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22 Nov 1994

Ms. Alydda Mangelsdorf (H-9-2)  
Remedial Project Manager  
Federal Facilities Cleanup Program  
U. S. Environmental Protection Agency, Region IX  
75 Hawthorne Street  
San Francisco, CA 94105

Dear Ms. Mangelsdorf:

This letter acknowledges receipt of your letter of November 8, 1994, regarding the "Draft Field Sampling Plan, Hunters Point, Parcel A, Building 101 Parking Lot," at the Engineering Field Activity, West, Hunters Point Annex, San Francisco, CA. This work plan was prepared by the U.S. EPA for sampling of the ground water spring located in the parking lot behind Building 101 in the Parcel A lowlands. Enclosure (1) contains the Navy's comments on the work plan.

We would like to schedule a meeting with you and Mr. Cyrus Shabahari of the State of California Environmental Protection Agency, Department of Toxic Substances Control on December 1, 1994 to discuss our comments and to finalize the work plan for implementation.

If you have any questions regarding this letter, please contact either myself at (415) 244-3596, or Mr. William Radzevich at (415) 244-2555.

Sincerely,

**Original signed by:**

RICHARD E. POWELL  
Head, Environmental Restoration Section 1  
By direction of  
the Commander

Encl:

(1) November 22, 1994 PRC Environmental Management letter

**Copy to:**

**CA EPA, Department of Toxic Substances Control (Attn: Mr. Cyrus Shabahari)**

**Regional Water Quality Control Board (Attn: Mr. Richard C. Hiatt)**

**City and County of San Francisco, Department of Public Health (Attn: Amy Brownell, w/o encl))**

**PRC Environmental Management (Attn: Mr. James Sickles, w/o encl)**

**Harding Lawson Associates (Attn: Mr. David Leland, w/o encl)**

**Blind copy to:**

**T4D1MM, T4C, 09ER, 09ER1,**

**09ER1WR, 09CJC, 09CMN, 09CRG**

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**File: HPA**

PRC Environmental Management, Inc.  
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San Francisco, CA 94105  
415-543-4880  
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**PRC**

November 22, 1994

William Radzevich  
Engineering Facility Activity West  
Naval Facilities Engineering Command  
900 Commodore Drive  
San Bruno, CA 94066-2402

**Subject: Draft Comments on the EPA Parcel A, Building 101, Parking Lot Spring Field  
Sampling Plan, Hunters Point Annex, California**

Dear Mr. Radzevich,

Attached are draft comments on the Field Sampling Plan for the Parcel A Parking Lot Spring, prepared and submitted to the Navy, by the Environmental Protection Agency on November 8, 1994. The comments are from PRC Environmental Management, Inc., and Harding Lawson Associates.

If you have any questions, please call me at (415) 222-8344 or Scott Weber at (415) 222-8274.

Sincerely,



James Sickles  
Project Manager

cc: Richard Powell, EFA WEST  
Scott Weber, PRC  
Carl Michelsen, HLA  
File

**DRAFT COMMENTS  
FROM PRC ENVIRONMENTAL MANAGEMENT, INC.  
ON FIELD SAMPLING PLAN  
PARCEL A PARKING LOT SPRING  
HUNTERS POINT ANNEX, CALIFORNIA**

The following comments on the field sampling plan, which was prepared by the U.S. Environmental Protection Agency (EPA), are divided into PRC Environmental Management, Inc., general comments and specific comments, and Harding Lawson Associates, specific comments.

**General Comments**

1. Please include the preliminary remediation goals (PRG) from August 1994, the Base Closure PRGs (October 1994 from Cal/EPA/DTSC), and health-based levels (HBL) next to the maximum concentrations to put into context which compounds are of concern. Also include the concentrations that are now in place at each of the sites to show the decrease in concentrations due to the soil removals.
2. The concentrations listed in the tables are not consistent, some of the concentrations are from before excavation at the site; other concentrations are from after the initial excavation.
3. The qualifiers for the compounds should be listed, so when a concentration for a compound is estimated it is clear to the reader.
4. The term ambient concentrations is used several times, the Navy understands the correct term to be interim ambient levels (IAL). The discussion of IALs may not be relevant if the PRGs designated by the EPA are not exceeded.
5. Please move the paragraph after each of the tables in Sections 2.3.1, 2.3.3, 2.3.4, and 2.3.6 discussing the excavation and removal of contaminated soil to the beginning of each section or add it, and the additional information in general comments 1 through 4 to each of the tables.
6. At the suggestion of Alydda Mangelsdorf of EPA, the Navy used the Tri-Regional Leaking Underground Fuel Tank (LUFT) Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure, October 1989, published by the State of California, to determine a maximum concentration limit for TPH as motor oil. The Navy used Table 2-1 in the manual to arrive at a maximum concentration level for TPH as motor oil. Table 2-1 addresses gasoline and diesel specifically. The difference between gasoline and diesel is a factor of 10. Because of the heavy molecular weight of motor oil the maximum concentration for diesel was multiplied by a factor of 5 and 10 to determine a range for TPH as motor oil. The concentration for diesel was estimated to be 1,000,000 parts per billion (ppb). The concentration of TPH as motor oil that can be left in place ranges from 5,000,000 to 10,000,000 ppb.

## Specific Comments

1. Title/Signature Page

Mike McClelland should be Michael McClelland and  
Rich Hiatt should be Richard Hiatt

2. Table of Contents

Section 2.3 should be changed from Contaminant Sources to Potential Contaminant Sources

3. Section 2.2

In the first paragraph, third sentence take out the word "less." In the last sentence, replace the word "measured" with "estimated" and take out "approximately." The majority of the estimated flow was into the excavation and likely from the parking lot fill material, not from the spring. The statement that most of the springs and seeps were observed to flow at 1 to 2 gallons per minute needs to be more specific. Which springs and seeps are being referred to and what season were these observations made?

In the second paragraph the depth of the saturated zones should be listed. Water was encountered at approximately 30 to 75 feet mean sea level (MSL) with static water levels at approximately 70 to 80 feet MSL. The transmissivities of these wells is important, but the gallons per minute should be included to correlate with the information from the previous paragraph.

4. Page 3

In the second paragraph define MSL (mean sea level). The elevations of the groundwater first encountered in the wells and the static water levels should be mentioned.

5. Page 3

In the third paragraph define SE (southeast). The first sentence of this paragraph should be changed to read, "Within the framework of the EPA's conceptual model of the upland portion of Parcel A groundwater..."

6. Page 3

In the fourth paragraph, add the word "possibly" to "...fractures that are possibly interconnected to..."

7. Page 3

In the fourth paragraph, second sentence replace "may be" with "is."

8. Section 2.3

Add the word "Potential" to title: "Potential Contaminant Sources"

9. Section 2.3

Add "Draft Final" to Site Inspection Report

10. Section 2.3.2

In the last sentence of this section replace the word "documented" with "encountered" and "to 200 feet" should be added at the end of the last sentence.

11. Section 2.3.3

The compounds listed in this section were detected in soil and sandblast material, not just in the sandblast material. The final excavation removed most of these compounds to a depth of 2 feet.

12. Section 2.3.4

Sandblast Grit (IR-59) should be changed to Sandblast Grit "Investigation." The results of this investigation will be reported in the Parcel A SI report. In the first paragraph, first sentence replace the word "water" with "sewer." The Navy recommends that the second sentence be changed to read, "The sandblast grit was found from the surface to four feet below ground surface in an isolated location in the lot on Jerrold Street adjacent to Building B." Indicate that the utility line has been excavated, removed, and cleared of all contaminated soil. The Navy accelerated the investigation by using an EPA-approved field test kit for pesticides. The site was screened with the field test kits, and confirmation samples have been sent to the laboratory for final confirmation that the site is clean.

13. Section 2.3.5

The tables list total recoverable petroleum hydrocarbons as the analyses conducted. Actually, the analyses were for total petroleum hydrocarbons (TPH) and semivolatile organic compounds (SVOC). Indicate that SVOC were not detected.

14. Section 2.3.5

The order of the detections of motor oil should be switched. The 76,000 ppb was from the initial grab groundwater sample, and the 301 ppb was after the well was installed and developed. The initial grab groundwater sample had a sheen. None of the groundwater samples from the other wells in parcel A had a sheen.

15. Section 2.3.5

The Navy recommends the writeup be changed to read, "The following constituent was detected in a grab groundwater sample from open boring PA50B016." SVOC were also included in the analyses.

16. Section 2.3.5

The Navy recommends the last paragraph of the section read as follows: "The following constituent was detected in a grab groundwater sample collected at open boring IR59B002. SVOCs detected were at very low concentrations and qualified as possible laboratory contaminants." Delete the last sentence. The boring was not completed as a monitoring well.

17. Section 2.3.6

The Navy recommends the text be changed to read, "The following constituent was identified in a surface soil sample under a debris pile found during the IR-59 groundwater investigation. The area of stained soil was very limited and the discolored soil was removed with the debris pile."

18. Section 3.0 Maps

Figure 4 does not show contaminant sources, the parking lot at Building 101, or the spring. There should be a map showing the areas of investigation and potential sources of contamination. Plates 1 or 2 in the Parcel A SI report show the sites investigated and the Building 101 parking lot spring area.

Figure 5 can be drafted from the memo from Matt Hagemann to Alydda Mangelsdorf (November 9, 1994) which describes a monitoring well design. The Navy requests that EPA provide the design and schematic diagram for the monitoring well.

19. Section 4.1

The first sentence mentions contaminant sources. The Navy recommends this be qualified with "possible" or "potential." The Navy recommends the last sentence indicate the composite flow is from three likely sources, as stated in Section 2.2, paragraph 5. The three sources are: the veneer of fill underlying the parking lot, the shallow seepage from the adjacent hillslope along Hill Drive, and flow within fractures in the bedrock from the upland area.

20. Section 4.2

The Navy provided the EPA with basic information concerning monitoring well design. The memo from Matt Hagemann to Alydda Mangelsdorf (November 9, 1994) describes the EPA's preferences on screen length and the intervals for materials to construct a monitoring well. The Navy recommends that the filter pack interval be from 10 to 17 feet below ground surface (bgs) and the screened interval be from 12 to 17 feet bgs. A 10-foot grout and bentonite seal will minimize the contribution of flow from the veneer of fill underlying the

parking lot and from the shallow seepage from the adjacent hillslope along Hill Drive, and maximize the flow from the bedrock. The Navy will perform the drilling by a driven casing method (air rotary casing hammer or dual tube percussion).

21. Section 4.3

The order of the three samples will need to be changed since we are in the wet season. By the EPA prescribed sampling, dry season first then the wet weather samples, the transfer of Parcel A would be delayed 9 to 12 months. The Navy recommends that the storm samples be collected as soon as possible and the dry weather sample be collected in the spring of 1995 to accelerate the investigation and expedite the transfer of Parcel A to the City of San Francisco.

What is the criteria for a major precipitation event? Please describe the recording method and well location for determining the rising limb of the hydrograph for a precipitation event. Who will call whom and decide on the precipitation event? Criteria describing the precipitation event should be established and agreed upon before sampling.

22. Section 4.4

In paragraph 2 the maximum values are being used due to the limited number of samples to be collected. The Navy will compute the 95 percent upper confidence limit (UCL) under the reasonable maximum exposure (RME) scenario from the monitoring data to estimate exposure point concentration (EPC). However, if the 95 percent UCL is higher than the UCL, then maximum values will be used. Also, the attached EPA guidance indicates that the range for cancer risk is  $10^{-4}$  to  $10^{-6}$  not just exceeding the  $10^{-6}$ .

In paragraph 3 the Navy suggests replacing "conservative" with "health protective." As recommended by EPA guidance, the Navy will compute human health risks under the RME and central tendency exposure scenario.

The EPA Region 9 policy on groundwater cleanup (August 7, 1992) that is attached to the field sampling plan indicates that the groundwater in Parcel A at HPA is not a drinking water source. Currently groundwater at Parcel A does not serve as a drinking water source. The City of San Francisco will be supplying municipal water to the future tenants at HPA. The pumping tests conducted indicate the yields at Parcel A are in the range of 30 gallons per day, well below the Regional Water Quality Control Board (RWQCB) sustainable limit of 200 gallon per day. The concentration of TPH may not be considered by the RWQCB to be detrimental to the groundwater quality at Parcel A.

23. Section 5.1

In paragraph 1, replace the words "identified upgradient sources" with "possible upgradient sources that have been removed to health protective levels." In the second sentence, replace the word "analytes" to "classes of compounds", and replace the word "required" with "recommended."

The target detection limits should be practical quantitation limits (PQL) for all classes of compounds as required by the EPA's Contract Laboratory Program (CLP). Method detection limits (MDL) for volatile organic compounds (VOC) are too low; PQLs are more reliable limits.

In the second paragraph, points 2 and 3 are not usually conducted to follow the EPA's CLP program.

24. Section 5.2

The Navy did not receive the "Laboratory Document Requirements for Data Validation." The Navy receives all analytical data in a specific format. Please provide the Navy with the proposed format.

25. Section 6.1

In paragraph 1 the end of the first sentence replace "...each well." with "...the well."

The decontamination procedures are outlined in Section 6.3.

In the second paragraph replace "...the presence of..." with "...the possible presence of..."

In the fourth sentence should read "...moved downward to maintain..."

In the fifth sentence, dissolved oxygen will not be measured in the field. This parameter has not been measured in the past.

The Navy recommends collecting filtered and unfiltered samples for selected metals in these three samples.

26. Section 6.3

The Navy recommends dropping the rinses with 10 percent nitric acid and hexane, and include two deionized water rinses instead of three. The Navy also recommends using disposable tubing with the bladder pump.

27. Section 6.4

Replace the word "this" with "each."

28. Section 6.5

Preserved bottles come from the laboratory.

29. Section 6.7.1

Replace the word "identified" with "possible."

30. Section 6.7.2

This section needs to be removed. CLP requires that the laboratory run QC samples, and include the data with the analytical results.

31. Section 6.7.3

Will the EPA collect samples before or after the Navy?

Comments from Harding Lawson Associates on the EPA Parking Lot Spring Work Plan.

**Section 2.1 Geology**

Comment 1

Paragraph 2. Add the following phrase (in italics) to the sentence "All rock types underlying Parcel A-2 are fractured" *and the serpentinite and shales are pervasively sheared*. The text should mention the fine-grained nature of the sheared serpentinite and shales. Other mineral infillings include magnesite and silica.

**Section 2.2 Hydrogeology**

Comment 2

Paragraph 1: The text implies that intermittent flows of groundwater at springs and seeps occurs along the entire margin of Parcel A-2. The location of these springs and seeps should be clarified to read "the southern and eastern facing slopes along the margins".

The observations regarding correlations of flow to precipitation events and estimated flow rates apply only to the Hill Drive seepage area and the parking lot spring behind Building 101.

The estimated flow rate of 8 gallons per minute at the parking lot spring area refers to the rate of water inflow into the excavation; this rate was not observed at the spring itself. Since water that flowed into the excavation included both spring water and water released from storage on the sides of the excavation (e.g., fill materials beneath the pavement) it is misleading to imply that this flow rate represents the spring flow.

Comment 3

Paragraph 2: A discussion of the generally dry bedrock conditions at deeper horizons below monitoring wells IR59MW01-MW05 should be added. At two nearby borings, drilled about 200 feet below ground surface, generally dry conditions were encountered below about 70-80 feet bgs. The occurrence of groundwater is localized and bedrock is not saturated throughout the entire thickness.

Comment 4

Paragraph 3: The statement that "Groundwater is found at an elevation of approximately 100 feet above MSL" should be expanded and/or clarified. The occurrence of moisture which was investigated ranged from approximately +30 to +75 feet MSL with static water levels of approximately +70 to +80 feet MSL. In addition the Navy recommends that the work plan provide clarification of the nature and occurrence of groundwater in Parcel A. This includes for example the semi-confined nature of groundwater in the upland portion of Parcel A and the localized occurrence of moist and wet zones in what appears to be predominantly dry bedrock.

## Comment 5

Paragraph 4: The characterization of groundwater flow by EPA as "primarily along interconnected fractures within the rock" may create an inaccurate impression of groundwater flow in the rocks of the Franciscan Assemblage. Just as the physical properties associated with Franciscan rocks are highly variable within very short distances, so also is the variability of hydraulic properties. When conceptualizing groundwater flow in the Franciscan, the condition of relatively hard and brittle rock inclusions juxtaposed by shearing (tectonic mixing) against and within a fine-grained, pervasively sheared rock matrix (e.g., the melange) is of foremost importance. It is important to understand that groundwater flow in Franciscan rocks is highly complex, even relative to other fractured rock systems and likely involves flow in fractures interrupted by the generally porous media of the sheared fine-grained matrix. As a consequence, comparison of Franciscan rocks to more conventional fractured rock systems, and application of characterization methods developed for those more common systems, should, at a minimum, be used with caution; there is the possibility that application of those methods may not be valid.

The location of the large landslide should be specified. Is this in reference to the landslide immediately behind Building 813?

## Section 2.3 Contaminant Sources

### Comment 6

The data presentations used in Sections 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.5, and 2.3.6 should clarify whether or not the soils still remain at the site and the depth of sample collection. This type of data presentation (e.g., use of maximum values) does not factor in depth versus concentration information and tends to overstate the potential for groundwater contamination. In other words, when chemicals are found in a thin veneer on the surface and groundwater is several tens of feet below the contamination, this may not represent a realistic potential to contaminate groundwater. Consideration of attenuation by processes such as adsorption, ion-exchange, and degradation, and the chemical characteristics of the contaminant should be factored in when assessing the potential for groundwater contamination. This is especially true for compounds like DDT, DDE, DDD, and Aroclor 1260 which readily adsorb to soil materials and therefore do not readily migrate in the vadose zone or groundwater. The low mobility of DDT compounds is readily apparent at PA-43 and the sandblast investigation area. At both of these areas pesticide contamination in the soil only extends a few feet below the ground surface.

In Section 2.3.5, a note should be added that the TPH-motor oil concentration of 76,000 (ppb) represents a grab sample of the sheen (see also Comment 10).

### **Section 2.3.2 Sanitary Sewer**

#### **Comment 7**

The text should be more specific about the statement "groundwater was not documented in borings advanced to depths greater than 22 feet". At this location, borings drilled to 80 feet below ground surface did not encounter significant quantities of groundwater. In addition, no soil samples below about 26 feet contained detectable concentrations of herbicides.

### **Section 2.3.4 Sandblast Grit (IR-59)**

#### **Comment 8**

The investigation of sandblast grit and associated contamination is not considered by the Navy to be part of IR-59, the groundwater investigation of Parcel A. The results of this investigation will be reported as an addendum to the Parcel A Site Inspection Report.

### **Section 2.3.5 Motor Oil at Monitoring Wells and Open Borings**

#### **Comment 9**

Add the following phrase (in italics) to the sentence: "The following constituent was detected in open boring PA50B016. This boring was later completed as IR59MW01F." *The results are indicative of the concentration of petroleum hydrocarbons in a thin sheen at the surface of groundwater and a localized interval at the bottom of the boring and are not considered representative of groundwater conditions in the bedrock.*

### **Section 3.0 Maps**

#### **Comment 10**

Map 5, the Monitoring Well Schematic Diagram, should be provide in the final work plan.

### **Section 4.2 Monitoring Well Design**

#### **Comment 11**

The Navy recommends that EPA provide the final design for the monitoring well.

### **Section 4.3 Frequency**

#### **Comment 12**

The work plan was received a few days after a major storm event on November 4-6, 1994. Given that the rainy season has begun, it may not be possible to conduct initial sampling during this year/season after two consecutive weeks of dry weather. What is the basis for the two week duration? It is unlikely that two weeks of dry weather will be encountered in this abnormally rainy wet season. This restrictive criteria could delay initial sampling of the well

until the end of the rainy season (e.g., April, 1995) and lead to delays in transferring Parcel A. The Navy suggests that EPA reconsider the need for dry weather sampling. If it is considered absolutely necessary, the Navy suggests it be conducted after the end of the rainy season in the Spring of 1995.

#### Comment 13

The definition of what is considered to be a "major precipitation event" should be provided. The last sentence implies that all parties will be available to agree upon whether a particular storm should be sampled and that agreement can be reached in a timely manner. This may not be possible especially since the parking lot spring appears to respond relatively rapidly to precipitation events. A better approach would be to establish an objective criterion of how much rain needs to fall (e.g., 0.5 inches of rain) before the sampling event is initiated. The text should also spell out in more detail the logistics of the relationship between how the decision to sample is made and when the well is sampled.

#### Section 4.4 Data Interpretation

#### Comment 14

Paragraph 1: If on the basis of comparisons of parking lot spring data to Region 9 PRGs, it appears that the risk to human health does not exceed  $10^{-6}$  for cumulative carcinogenic risk or a hazard index of 1 for non-carcinogens, will no further characterization of the groundwater be required by EPA or other agencies?

#### Comment 15

Paragraph 4: EPA should clarify exactly which locations/media for which they recommend the application of risk management decisions. The statement "...identification of clear risk management steps that could be taken to eliminate exposure of potential receptors to the spring water" implies that risk management decisions applied at the surface discharge point of the spring water would be acceptable to EPA. This is exactly the position taken by the Navy at a meeting with the agencies on June 29, 1994 when it was proposed that the surface outflow of the parking lot spring be captured via a french drain system and tied into the sanitary sewer system and thus eliminate the exposure to potential receptors at the spring. If this approach is acceptable, the Navy requests concurrence from EPA regarding this approach.

Paragraph 4 then goes on to say that groundwater must be cleaned up to MCLs or surface water quality standards if it is a potential source of underground drinking water. Since (1) the primary responsibility for groundwater protection rests with the states (Region 9 Groundwater Policy; August 7, 1992), (2) by California standards the groundwater would not be considered a drinking water source (based on pumping test data in the uplands area), (3) the groundwater in the vicinity of the parking lot spring meets the first exemption criterion of currently not serving as a source of drinking water, and (4) there is no surface water interconnection of the parking lot spring water (the local storm drain which collects surface water, was previously tied into the sanitary sewer system), the Navy believes that groundwater should be exempted as a source of underground drinking water.

## **Section 5.1 Methods of Analysis**

### **Comment 16**

Comparisons of MDLs and PQLs to MCLs, PRGs, and surface water standards should be provided to insure that target detection limits are sufficiently low to meet data interpretation needs. The table should be more specific about which metals will be analyzed.

## **Section 5.2 Request for Analysis Table**

### **Comment 17**

The "Lab Document Requirements for Data Validation" should be provided.

## **Section 6.1 Sample Collection**

### **Comment 18**

Paragraph 2: The workplan should specify what type of tubing is required for the bladder pump (e.g., teflon coated). Will tubing be replaced between purging and each sampling event, or will tubing be decontaminated? If tubing is to be decontaminated, how will this be accomplished? During sampling, where will the pump inlet be set relative to the screened interval? Will this be consistent for each sampling event? Will the pump and tubing be dedicated to the well or will it be removed after each sampling event? Where will decontamination fluids be disposed?

### **Comment 19**

Paragraph 3: The use of bladder pumps and low-flow rates to reduce the introduction of particulates into the monitoring well has not been tested in the aquifer materials at HPA. Assuming that non-filtered metals data collected from the parking lot spring will have high metals concentrations resulting, in part, from the introduction of particulate matter artifacts into the groundwater sample, how will such data be treated in the evaluation of whether or not additional characterization or cleanup is required? This problem is especially true for constituents such as nickel and chromium which are commonly found naturally at high concentration in the serpentinite soil materials in Parcel A. The Navy recommends that disposable tubing be used.

## **Section 6.3 Equipment Decontamination**

### **Comment 20**

Is pump tubing included in the list of equipment to be decontaminated? If so, is the tubing resistant to rinsing with hexane and nitric acid?