

# Arc Ecology

Environment, Economy, Society, & Peace

July 13, 2004

Keith Forman  
BRAC Environmental Coordinator  
Southwest Division  
Naval Facilities Engineering Command  
BRAC Operations  
1230 Columbia Street, Suite 1100  
San Diego, CA 92101-8517

**Re: Draft Workplan, Zero-Valent Iron Injection Treatability Study, Building 272, Parcel C, Hunters Point Naval Shipyard, San Francisco, California, dated June 14, 2004**

Dear Mr. Forman:

Thank you for providing Arc Ecology with the opportunity to review the *Draft Workplan, Zero-Valent Iron Injection Treatability Study, Building 272, Parcel C, Hunters Point Naval Shipyard, San Francisco, California*, dated June 14, 2004. Arc Ecology has the following comments on the document:

1) Table 3 *Implementation Schedule for Field Activities* indicates that regulatory review of this document is scheduled for June 15, 2004, to July 30, 2004. The same table indicates that the fieldwork kickoff meeting is scheduled for June 15, 2004, and that zero-valent iron (ZVI) injection is scheduled to take place between June 28, 2004, and July 22, 2004. Is this schedule correct? If so, this suggests that the primary activities addressed in the draft work plan and its appendices will be completed prior to the close of the regulatory review period. Why was fieldwork scheduled prior to close of the regulatory review period? This schedule and timetable suggest that the Navy views this regulatory review period – and related state and federal agency input -- as a perfunctory formality. The Navy should recognize that even the appearance of this approach and attitude undermines the Navy's credibility with the community.

2) The planned pneumatic fracturing will increase the bulk permeability and hydraulic conductivity in the treatment area. How will this affect groundwater flow in the vicinity of the treatment zone long term? If the treatability study does not reduce chlorinated volatile organic compound levels to below screening levels, how might this increased hydraulic conductivity impact contaminant migration in this area?

3) Based on Figure 3, it appears that almost all of the indicated monitoring wells and soil borings are within the boundary of the groundwater plume, as indicated on the cross-section. The lower boundary of the plume is indicated as located primarily in bedrock. If little or no data exist to demonstrate the maximum depth of the plume, and no particular stratigraphic unit is indicated

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833 Market Street, Suite 1107  
San Francisco, California 94103, United States of America  
PHONE: 415.495.1786 | FAX: 415.495.1787 | EMAIL: arc@igc.org

that might act as a lower boundary, how has the Navy determined the lower boundary of the plume, as indicated on the cross-section?

4) It is not clear from the existing figures and text that the selected monitoring wells will be sufficient to fully assess the treatability study's zone of influence and to monitor possible displacement of the plume as a result of injection, in particular to the north of the study area. Please explain the Navy's rationale for these selections and for the placement of the two new proposed wells.

5) If the results of baseline sampling do not support the Navy's current plume model, how will the Navy go about revising well placement, ZVI injection, and related groundwater monitoring plans in a timely fashion to reflect the new data?

6) Given ongoing community concerns about high levels of some metals at Hunters Point Shipyard, it might be useful for the Navy to explicitly address how ZVI injection impacts subsurface iron levels over time. While the Navy may feel that this information is unnecessary, including a paragraph on the issue (for example, in section 5.2 *Protection of Surface and Groundwater Resources*) would be a way to proactively address community concerns, demonstrating the Navy's awareness of and responsiveness to these types of community concerns.

Minor comments:

7) Figure 3: When labeling geologic units on cross-sections (e.g., Qu, Qaf, etc.), please include explanations of those abbreviations in the figure legend.

8) Figure 3: The hand-drawn lines and arrows indicating the cross-section locations on the inset map are difficult to read. Please revise the inset map to more clearly indicate the cross-section locations.

9) Figure 4: It would be helpful to have the plume isoconcentration lines overlaid on the bedrock contour information.

Arc Ecology appreciates having the opportunity to review this document. If you have any questions about our comments, please contact me at (415) 495-1786.

Sincerely,

Cian B. Dawson  
Staff Scientist

Cc (electronic):

Michael Work, U.S. Environmental Protection Agency, Region IX

Tom Lanphar, California Department of Toxic Substances Control

Jim Ponton, California Regional Water Quality Control Board, San Francisco Bay Region

Amy Brownell, City of San Francisco, Department of Public Health

Maurice Campbell, RAB Community Co-Chair