UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SFD 8-3

December 4, 2003

Thomas Macchiarella
BRAC Operations, Code 06CA.TM
Department of the Navy, Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101

RE: Draft Focused Groundwater Feasibility Study Report, Installation Restoration Site 26

Dear Mr. Macchiarella:

Please find enclosed EPA's review of the above referenced document. The document was prepared by Bechtel Environmental and submitted by the Navy to the agencies on September 3, 2003. EPA requested, and was granted, a 30-day review extension in accordance with the Alameda FFA Section 10.7, which pushed the submittal of comments date to December 3, 2003.

While the groundwater plume beneath Site 26 is small in terms of both areal extent and concentration, EPA does not support the recommended remedy for this site. The required lines of evidence have not been established to show that Monitored Natural Attenuation (MNA) is occurring, and the data for the site are so limited that model predictions cannot be used with any degree of confidence. EPA is willing to consider using MNA as a remedy in an interim Record of Decision, but would prefer to see an active remedy implemented at Site 26.

We appreciate the opportunity to review this Feasibility Study and look forward to resolving our concerns. Please call me at (415) 972-3029 to discuss these comments.

Sincerely,

Anna-Marie Cook

Anna-Marie Cook
Remedial Project Manager

enclosures: EPA Site 26 Draft FS Comments
EPA Determination of Beneficial Uses of Groundwater letter, January 3, 2000

cc list: Glenna Clark, SWDiv
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Judy Huang, RWQCB
Elizabeth Johnson, City of Alameda
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EPA Review of the Draft Focused Groundwater Feasibility Study Report
Installation Restoration Site 26, Alameda Point

General Comments

1. Alternative 3 and 4 appear much better alternatives than Alternative 2. Over the long term they are much cheaper, they meet EPA's preference for treatment and they would not require that the Navy bear a long term responsibility for implementing and enforcing the LUCs that Alternative 2 proposes. See EPA's Specific Comment # 6 regarding our disagreement with the estimated time to meet RAOs for Alternative 4.

2. VOCs are the contaminant of concern in the groundwater. EPA is concerned about the exposure pathway formed by VOCs off-gassing in the very shallow groundwater (2 feet) and into indoor air. We do not want this pathway to present a health risk to current and future residents of any buildings that are located over this plume. This exposure pathway is not listed as a potential health threat and no reasons are given for not considering it as a problem.

3. The Executive Summary (page ES-2) states that "data do not indicate that migration of chemicals through subsurface conduits (storm sewer lines) would be a significant pathway" in reference to groundwater surfacing to a surrounding water body. To what data is this statement referring? In addition, has the condition of the storm/sewer systems been sufficiently evaluated to ensure that no plume migration will occur away from Building 20 and into surrounding parcels? Would the high permeability trenching materials that storm and sewer pipe are typically placed in cause migration of contaminated groundwater away from the site?

4. RWQCB's proposed dedesignation is one of the reasons to support the conclusion that the groundwater beneath Site 26 is unlikely to be used as future drinking water. However, as documented on EPA's letter to the Navy dated January 3, 2000 (see enclosure), regarding the status of groundwater at Alameda Point, the State of California does not have an EPA endorsed Comprehensive State Groundwater Protection Plan (CSGWPP) which means that EPA's federal guidelines are still more stringent than the RWQCB's designation in this case. Therefore, the groundwater beneath Site 26 still meets the criteria to be deemed a Class II aquifer and MCLs may apply to cleanup. EPA has stated in the letter of January, 2000 that for CERCLA cleanup purposes, EPA will not require MCLs to be met due a variety of reasons that make this particular aquifer unlikely to be used as a source of drinking water in the future. However, source reduction and plume containment must be included in the remedy.

5. MNA has not been demonstrated using the required lines of evidence. One of the most important lines of evidence is the demonstration of plume stability. There are numerous statements in the discussions of the MNA alternative for remediation that mention concerns over plume migration and size. There are also concerns that the estimated attenuation timeline may be wrong because insufficient information is known about the plume to use the model with a high degree of confidence. Of the four lines of evidence used to demonstrate natural attenuation that are discussed in the report, only the presence of degradation products and modeling indicate that natural attenuation might be occurring, and no evidence of degradation past the vinyl chloride stage has been found. There are no monitoring wells, so there is insufficient data to evaluate historical trends or to evaluate whether the plume is stable. Further, microbiological data has not been collected at Site 26. Demonstration of plume stability is a basic requirement for MNA, but this cannot be done without monitoring wells In addition the report states (Appendix D) that changing the source-decay coefficient used in modeling has a dramatic effect on the predicted concentrations and that the accuracy of the calculated tetrachloroethene (PCE), trichloroethene (TCE), and dichloroethene (DCE) coefficients is low because so few data points were used. If the Navy insists on selecting Alternative 2 as the chosen remedy, EPA will require that the ROD be an interim ROD until sufficient monitoring data has been collected to demonstrate that MNA is indeed occurring at the site.

6. The plume has not been adequately defined to the north of the apparent hot spot.

7. Alternative 5 seems a fairly good option and EPA would like to see it carried through the full screening with the other 4 alternatives.

Specific Comments:

1. EPA notes on the cc list attached to the cover letter of the document that neither the USFW or the California Department of Fish and Game have received a copy of this document. Since the site borders the Wildlife Refuge and the documents contains ARARs used by these agencies, the resource trustees should participate in review of the proposed alternatives for remediation of the site.

2. **Page ES-2, Page 3-2, Table 3-1**: Discuss the indoor air pathway and calculate the risk posed by this pathway for future residential use.

3. **Page ES-3**: The Navy must still adhere to the EPA criteria for designating the aquifer.

4. **Section 1.1, Purpose, Page 1-2:** One of the stated goals of this report is to develop and compare remedial alternatives for Site 26 groundwater that are compatible with the reuse plan for the site; however, the reuse plan is not discussed in the report and it is not clear how the remedial alternatives are compatible with the reuse plan.

5. **Section 2.3, Physical Setting, Page 2-3:** The report indicates that the Alameda Wildlife Refuge is located immediately west of Site 26, and Figure 1-2 is referenced, but the location and extent of the Wildlife Refuge is not indicated on Figure 1-2.

6. **Section 2.4, Nature and Extent of Contamination, Page 2-4:** The second paragraph describes activities which may have contributed to groundwater contamination, and parenthetically refers to an associated oil-water separator and a detached wash rack. It is not clear if these structures are still in place or have been removed. It is also not clear if an investigation was conducted beneath and around the oil water separator and associated piping. The report concludes (5th paragraph) that observations during soil sampling did not suggest the presence of a continuing subsurface source in the vadose zone, but it is not clear from the information presented in the report if the likely source areas such as the oil water separator and underground piping (if any) were investigated. Please clarify whether structures, such as the oil water separator, wash rack, and associated piping, which may have been sources of groundwater contamination were investigated for the presence of a continuing subsurface source.

7. **Section 2.4, Nature and Extent of Contamination, Page 2-4 and Figure 2-11:** The extent of groundwater contamination northeast of 26B46 is unknown. No samples have been collected north or northeast of 26B46, so it is unclear if contamination extends north of this boring or north of former Building 582. The groundwater contours on Figure 2-7 indicate that there could be a northerly component of groundwater flow in this area. It is also unclear whether the storm sewer impacts groundwater flow in the vicinity of former Building 582 because there is no information in the report and because there is insufficient data to evaluate the stability of this groundwater contaminant plume. Since the extent of contamination is unknown, the contour lines north and northeast of 26B46 on Figure 2-11 should be dashed. Please discuss how this data gap will be addressed and dash the contour lines north of 26B46 on Figure 2-11.

8. **Section 2.5, Risk Assessment, Page 2-7:** The risk assessment does not appear to consider the ultimate discharge of groundwater beneath Site 26 to surface water, or the associated risk to human and ecological receptors. It appears that shallow groundwater at Site 26 ultimately discharges to Oakland Inner Harbor. Please revise the Report to quantify the risk to human and ecological receptors of

contaminants in groundwater at Building 20 discharging to Oakland Inner Harbor, and clarify whether there is any risk of contaminants entering the waters of the Alameda Wildlife Refuge, adjacent to the site.

9. **Section 3, Remedial Action Objectives, Page 3-1:** Even though the VOC plumes at Site 26 do not currently extend to surface water, and therefore there are currently no human populations or ecological receptors exposed to VOC-impacted groundwater, it appears that there could be in the future, if the plume is allowed to migrate.

10. **Page 3-6**: The aquifer beneath Site 26 is not considered a Class III aquifer. Please refer to the EPA letter to the Navy of January 3, 2000. The aquifer meets both the federal TDS and yield requirements to be considered a Class II aquifer. The RQWCB's proposed dedesignation does not alter the federal classification and because the State of California does not have a CSGWPP, the EPA guidelines must be followed as the more stringent criteria.

11. **Section 4.3.3.2, Conclusions, Page 4-13:** The first bullet cites Site 26's 'inland location' as a reason the site is a good candidate for MNA. It is debatable whether Site 26 can be considered an inland location only 1,000 feet away from Oakland Inner Harbor. Please revise this bullet item to clarify that the location is apparently sufficiently distant from surface water bodies to allow MNA to operate without significant risk of degradation of those water bodies.

12. **Page 5-2**: The lines of evidence necessary to establish that MNA is occurring and to allow MNA to be proposed as the remedial alternative do not exist for this site. There is no data to indicate that degradation past vinyl chloride will occur and no trends to establish that the plume is stable or decreasing in size. Until adequate monitoring of plume stability and degradation have occurred, this remedy can only be used in an interim ROD.

13. **Page 5-4**: It does not make sense that with 90% of the contaminant mass removed from the plume, the remaining 10 % contamination will take 40 years to attenuate to RAOs. It raises the question of whether the modeling was performed correctly or whether insufficient data is known about the plume to generate a realistic model output. Degradation rates should at least be linear if indeed the necessary attenuation is occurring, and thus the remaining 10% contaminant mass should take no longer than about seven years to degrade.

14. **Section 5.2, Screening of Remedial Alternatives, Page 5-5:** Alternative 5, In Situ Bioremediation/Monitored Natural Attenuation/Land Use Controls (ISB/MNA/LUCs), was eliminated from further consideration because it was judged considerably more complex than ISCO treatment. However, it appears that

ISB and ISCO have about equivalent complexity. Both would involve a two-phase process, pilot studies, specialized expertise, and safety concerns. It appears that a decision between these two in-situ options would be based primarily on cost. Therefore, it would be useful to carry ISB through the detailed analysis of alternatives as an in-situ remediation process option and develop a cost estimate for both. Please carry this alternative through the detailed analysis of alternatives.

15. **Table 5-1, Screening of Remedial Alternatives for IR Site 26, Page 5-7:** There appears to be an error in this table; under implementability, it states that a longer duration for treatment is envisioned for Alternative 5 than for Alternative 2, but Alternative 5 has a duration of 5 years and Alternative 2 has a duration of 70 years. Please revise the description of the duration of Alternative 5.

16. **Page 6-1**: It would be useful for readers unfamiliar with CERCLA criteria to define the terms "threshold', "balancing" and "modifying". The document does not state anywhere that the first two threshold criteria must be met or the alternative is not eligible for consideration. The alternatives do not have to meet all balancing criteria, although it is preferred. Modifying criteria is the last test to determine whether the state and the community find the alternative acceptable.

17. **Section 6.3.1.2, Well Installation, Page 6-7 and Figure 6-1:** The text indicates that six monitoring wells will be installed as part of Alternative 2, but none of these wells are proposed for the area north-east of 26B46 where there is a data gap. Groundwater from this grab groundwater location had the highest contamination and it is unclear whether contamination extends northeast of this location in the area between Building 20 and former Building 582. Please propose an additional monitor well in this area or explain how this data gap will be addressed.

18. **Page 6-8, Section 6.3.1.3**: For purposes of estimating a cost for the alternative, annual groundwater monitoring after the first year is possibly an acceptable assumption, although it will yield a low end cost. However, the ROD for the site will determine the actual groundwater monitoring frequency, which is likely to be quarterly for the first few years until MNA has been adequately demonstrated, and thereafter the monitoring frequency may be reduced with the concurrence of the EPA and the State.

19. **Page 6-9, Section 6.3.1.4**: It is unclear what an annual drive by inspection would accomplish as far as verifying LUC compliance.

20. **Page 6-9, Section 6.3.1.5**: Please be aware that modifications to a ROD are not simple and require a ROD amendment or an ESD. Because the lines of evidence for MNA have not been established, EPA will require an interim ROD for this site

if Alternative 2 is chosen as the remedy.

21. **Page 6-10, Section 6.3.2.3**: The Navy is ultimately responsible for administering any LUCs even after property transfer.

22. **Page 6-10, Section 6.3.2.3, last paragraph**: The plume is not allowed to migrate to any extent. One of the key lines of evidence to establish MNA is that the plume is stable with no migration.

23. **Page 6-10, Section 6.3.2.5**: Please simply state in this section that there is no treatment provided by the MNA. As far as treatment goes, it is exactly the same as no action.

24. **Table 6-1**: The long term costs for Alternative 2 far exceed the long term cost of the other Alternatives (i.e $16 million compared to $2.6 and $7.3 million), yet because the remedy takes so long to achieve RAOs, the present value cost shows Alternative 2 to be the most cost effective. Because of the uncertainty in future budgets and the uncertainty in timeframe for achieving RAOs for Alternative 2, EPA prefers an active remedy that will achieve the RAOs in a few years rather than many decades.

25. **Page 7-2, Section 7.3**: Alternatives 3 and 4 should rate high on long term effectiveness since most or all of the contamination will be eliminated within the first three years. Alternative 2 should rate low because it will take 70 years to achieve RAOs and in the meantime the Navy will have to rely on adequacy of LUC implementation and enforceability to protect human health.

26. **Page 7-5, Section 7.4**: Alternative 4 should get a rating of high in terms of reduction in toxicity, mobility or volume through treatment, since 90% of the contaminant mass will be knocked out in the first year through treatment.

27. **Page 7-7, Section 7.7**: Due to the very long time frame involved in Alternative 2, the costs are actually significantly higher with this alternative than with Alternatives 3 or 4. Also, Alternative 2 has almost certainly underestimated the frequency of groundwater monitoring that will be required for the first five years. Quarterly rather than annual monitoring is the most likely frequency that will be required in the interim ROD for the first few years, and this fact will drive up the cost of this alternative.

28. **Page 7-8, Section 7.10**: EPA disagrees with the conclusions of this report and favors Alternative 3 over Alternative 2.

29. **Appendix E, Cost Development Summaries:** The tables summarizing costs for

each alternative are confusing. The tables list a 20 percent contingency and 3 percent per year escalation as line items, but it is not clear to what numbers the contingency and escalation rates are applied. For example, in the tables it appears that the escalation rate is applied to the sum of capital and O&M costs, but it should only be applied to O&M costs. Please revise the cost summary tables to clearly indicate how these calculations were performed.

Minor Comments:

1. The dates used by the CTO leader and the civil engineer on the title page of the document use the year 2002. To avoid possible confusion in the Administrative Record, these dates should be changed to the year 2003.

EPA Office of Regional Counsel Comments

Comments regarding recommendation of Alternative 2

1. **- Preference for treatment.** It is not clear how the requirement in CERCLA 121 that a remedy satisfy the preference for treatment as a principal element, or provide an explanation why the preference was not met, will be met. (Sec. 7.11, p. 7-9)

2. **- Long term effectiveness.** EPA disagrees with the Navy's rating Alternatives 2, 3 and 4 all as "medium" in terms of long-term effectiveness and permanence. We consider Alternatives 3 and 4 to be higher in terms of long-term effectiveness and permanence than Alternative 2 because of Alternative 2's reliance on LUCs for several decades and the uncertainty regarding the time frame for the MNA.

3. **- Recommendation of Alternative 2.** The discussion in this FS of the Navy's recommendation of Alternative 2 as the final remedy does not present a compelling case for selection of this alternative. In the absence of more explanation, it appears that the selection is being based primarily on the cost of the alternatives, as determined by the present value calculation. As discussed in EPA guidance, however, "Cost may play a significant role in selecting between options that appear comparable with respect to the other criteria, particularly long-term effectiveness and permanence, or when choosing among treatment options that provide similar performance" (emphasis added). USEPA, *A Guide to Selecting Superfund Remedial Actions*, OSWER Dir. 9355.0-27FS (April 1990). The Navy's apparent reliance on the cost comparisons does not appear consistent with this guidance. The fact that there is a cost differential between remedies does not necessarily demonstrate that the more expensive remedy is not cost effective, which, under CERCLA, is the appropriate inquiry.

Comments regarding cost analysis

4. **- Exclusion of LUC costs.** On page E-5, the Navy indicates that in developing the cost estimate for Alternative 2, it did not include the costs of the LUCs. This cost estimate must be revised to include the costs for implementing, maintaining, monitoring and enforcing the LUCs for this Alternative, as well as for Alternatives 3 and 4, which also include LUCs.

5. **- Calculation of present value--discount rate.** EPA guidance in USEPA, *A Guide to Developing and Documenting Cost Estimates During the Feasibility Study*, OSWER 9355.0-75 (July 2000) (p. 4-5) indicates that for federal facilities, the standard 7% discount rate should not be used. Rather, agencies should use "the real discount rates found in Appendix C of OMB Circular A-94" (guidance p. 4-5). The real interest rate in the January 2003 Appendix C is 3.2 percent.

Comments regarding classification and uses of the aquifer

6. **- Federal classification of aquifer.** On pages 3-6 and B2-3, the Navy interprets the groundwater to be a Class III aquifer. EPA disagrees. As discussed in our January 3, 2000 to Patricia McFadden, EPA's aquifer classification system is a set standard used for all federal environmental programs, and not exclusively reserved for CERCLA. While in certain circumstances other compelling site specific factors (e.g. those listed on page B2-3 of the FS) may be used in deciding what level of CERCLA cleanup is needed for an aquifer, these site specific factors do not affect the general classification of the aquifer. Rather than labeling the aquifer a Class III aquifer, the FS should indicate that it is a Class II aquifer, but explain that based on the factors listed on p. B2-3 of the FS, the Navy has determined that it is not considered a potential drinking water source for the purpose of this particular CERCLA cleanup.

7. **- Other pathways.** There should be some discussion of whether there are threats posed by exposure by any pathways other than ingestion, e.g. inhalation, dermal contact, and risks associated with irrigation use. As discussed in EPA's letter to the Navy dated May 12, 1999 (*Application of Federal Criteria for Determining Beneficial Uses of Groundwater for CERCLA Cleanups*, Enclosure 5 to letter to Navy regarding Hunters Point), "Consideration should also be given to the potential health threats that may result from unanticipated or even prohibited uses. For example, if the failure of a groundwater remedy that relies on institutional controls could result in a significant or even acute health threat, a more active remedy may be appropriate."

8. - **Beneficial uses.** Pages ES-3 and B2-2 indicate that the groundwater will retain designations as potentially of beneficial use for industrial process water, industrial service water, and agricultural water supply. As set forth in the NCP, EPA expects that groundwaters shall be returned to their beneficial uses whenever practicable, and within a reasonable time period. 40 C.F.R. Sec. 300.430(a)(1)(iii)(F). In this FS, however, there is no discussion of risks associated with such uses, whether the groundwater is currently suitable for such uses, whether there are ARARs related to protecting such uses, or what PRGs are necessary to ensure that those uses are protected.

9. - **Groundwater cleanup goals.** The FS indicates that MCLs are not considered to be ARARs for this action because the groundwater is not potential drinking water. However, it indicates that MCLs "are generally used as PRGs" in the FS, and that "establishing final remediation goals is an iterative process." EPA notes that when this action proceeds to the ROD stage, it will be necessary to set numerical PRGs in the ROD.

Comments regarding LUCs

10. - **Deed restriction.** In various places, e.g. Sec. 6.3.1.4 at p. 6-8 and Sec. 6.4.1.3 at page 6-13, the FS indicates that the layered LUCs will include a deed notice. This is insufficient. There should be a deed restriction in the Navy's deed transferring the property.

11. - **Land use covenant.** The FS (e.g. bullets on page 6-8) indicates that one component of the LUCs is "entry of the DTSC into a land-use covenant...." The FS should clearly indicate that the Navy will be entering into such a covenant with DTSC, as provided in the Navy's 2000 agreement with the State of California regarding LUCs.

12. - **Reports to regulators.** In various places (e.g. Sec. 6.3.1.5 at p. 6-9 and p. 6-18), the FS indicates that there will be reports to the regulators concerning Alternative 2, which includes the LUCs, every five years. This is insufficient. Reports to the regulators need to be submitted at least annually.

13. - **Navy responsibility for enforcement.** The FS at Sec. 6.3.2.3 at p. 6-10 acknowledges that the long term effectiveness of the LUCs would depend on their continued enforcement, and notes that "one or more local agencies would be responsible for enforcing these controls...." The FS needs to acknowledge the Navy's ultimate responsibility for assuring that the LUCs are enforced.

Comments regarding ARARs

14. - **General comment.** The ARARs discussion in Appendix B is confusing because in several places it indicates that the Navy "accepts" certain provisions as potential ARARs; however, it later becomes clear that the Navy is not, in fact, considering these provisions to be ARARs for this action. See, e.g., first paragraph under *Comprehensive Water Quality Control Plan for San Francisco Bay Basin (Basin Plan)* on page B2-8. It appears that what is meant is that for CERCLA cleanups in general, the Navy accepts these provisions as ARARs. This needs to be clarified.

15. - **Provisions which are not ARARs.** It is not necessary to include the discussion of what is not an ARAR both in the text and in the ARARs Table. The ARARs Table should provide a simple overview of the requirements that are considered to be ARARs.

16. - **ARARs Tables.** Page numbers in the ARARs Tables would be much appreciated.

17. - **22 CCR 66264.94.** It is not clear whether the Navy intends to include 66264.94(d) as an ARAR. It is included in the bullets on page 3-7, but not in the ARARs Table (B2-1) or in the discussions on pages 3-6, B2-1 and B2-5. If the Navy concludes that (d) should not be an ARAR, this should be explained.

18. - **Porter Cologne.** In the ARARs Table (B2-2), certain portions of the California Water Code are listed in the "Citation" column, and on page B2-7, the FS states that the Navy accepts the substantive portions of these sections "as enabling legislation as implemented through [various authorities] as potential state ARARs." This language is confusing, and it is unclear whether the Navy is including these provisions as ARARs. The code sections cited by the Navy all provide authority to the State and do not themselves establish requirements that should be considered ARARs in a Superfund cleanup. The last paragraph on page B2-7 is also confusing because it indicates that "the Navy accepts....state primary MCLs as potential state ARARs." This is inconsistent with the Navy's determination these MCLs are not ARARs and needs to be clarified.

19. - **Basin Plan.** The FS at page B2-8 and in Table B2-2 indicates that substantive provisions of Chapters 2-4 of the Basin Plan are potential ARARs. However, the only provisions that are specified are the beneficial uses of groundwater other than MUN. The Navy should indicate which specific substantive provisions in the Basin Plan are in fact ARARs for this action.

20. - **SWRCB Resolution 88-63.** EPA does not consider Resolution 88-63 to be an

ARAR when the Regional Board has agreed that the exemption criteria are met, because in that situation the Resolution does not contain any requirements which will affect this cleanup.

21. **- Waste characterization.** EPA agrees with the Navy that requirements to characterize waste such as those found in 22 CCR 66262.11 are action-specific ARARs. However, EPA generally does not consider the regulations that the Navy has included as chemical-specific ARARs that give the definitions of various types of waste or characteristics such as toxicity to be ARARs. Additionally, it is confusing that the FS lists Cal/EPA ARARs in Table B2-2--Soil, but in the text (next-to-last paragraph on page B2-12) discusses different Title 22 requirements (those related to whether a waste is a RCRA hazardous waste).

22. - **Air Requirements.** Table B2-2-Air suggests that there will be a discussion of BAAQMD Regulation 8, Rule 47 in Table B4.2, but there is not. As noted below (Miscellaneous comments-Air emissions), the FS is inconsistent in its discussion of whether Alternatives 3 and 4 could potentially generate air emissions.

23. **- Corrective Action ARARs.** The Navy identifies 22 CCR 66264.100(c) as an ARAR for Alternatives 2, 3 and 4 (Table B4-1). This regulation requires the owner to implement measures that reduce COCs "by removing the waste constituents or treating them in place." The Navy does not explain how Alternative 2 meets this ARAR.

24. **- State demonstration and monitoring requirements.** Page B4-5 (Sec. B4.2.1.5) mentions State regulations in Titles 23 and 27 CCR regarding compliance demonstration following a cleanup. The ARARs chart, Table B4-1, under "Completion of the response action," states: "See Table A4-2 for more stringent state demonstration requirements at Cal. Code Regs. tit. 27." This is quite confusing, in several respects.

- There is no Table A4-2. It should be Table B4-2.
- Table B4-2 does not include Title 23 Sec. 2550.10(g)(2), which is referenced in the text on page B4-5.
- Instead of including both State and federal requirements in different parts of the ARARs table, it would be much better to have a separate chart comparing the State and federal monitoring and demonstration requirements and indicating which of each is the ARAR. Having to flip back and forth between the State and federal requirements is exceedingly burdensome for the reader.
- Non-ARARs should not be included in the ARARs table. The ARARs table as currently structured is extremely unwieldy and loses much of its effectiveness by the inclusion of non-ARARs.
- The FS states that 27 CCR 20410 is not included as an ARAR because it is not more stringent than 22 CCR 66264.96; however, 66264.96 is not included

in the ARARs chart.

- The FS states that 27 CCR 20420 is not included as an ARAR because it is not more stringent than 22 CCR 66264.98; however, 66264.98 is not included in the ARARs chart.

- The FS states that 27 CCR 20425 is not included as an ARAR because it is not more stringent than 22 CCR 66264.99; however, 66264.99 is not included in the ARARs chart.

25. - **LUC requirements.**

- EPA does not agree that the cited sections of the California Civil Code and Health and Safety Code are ARARs, and appreciates the Navy's inclusion of EPA's position on page B4-6. However, EPA's position should also be noted on the ARARs Table (B4-2).

- EPA does consider substantive portions of 22 CCR 67391.1 to be ARARs and recommends that the Navy include this in the ARARs table and discussion.

26. **- Soil cuttings and well development water.** The ARARs discussion at Sec. B4.2.1.6, page B4-5, indicates that various RCRA or State storage requirements would become ARARs if the soil cuttings and well-development water generated under Alternative 2 were determined to be hazardous waste under either RCRA or State law. This raises the issue of what the Navy plans to do with the soil cuttings and well development water. The FS should discuss how these materials are to be disposed of. The Navy should also consult with the Regional Board regarding water requirements that would apply to disposal of the well-development water, e.g. NPDES requirements.

Miscellaneous comments

27. - **Uncertainties in modeling.** In discussions on page 5-3 and 6-7, the FS notes that "there are significant uncertainties in the modeling analysis, and the results should be interpreted based on the comparative effectiveness among the alternatives rather than on the absolute cleanup time frames, which could vary significantly." This sentence needs to be clarified. The implication appears to be that the natural attenuation could take significantly longer than the 70 years discussed in the FS.

28. **- No action alternative.** The discussion in section 7.10, page 7-8, indicates that Alternative 1, the no action alternative, "scored competitively" but cannot be selected because it is assumed that it will be unacceptable to the State. This comment is misleading. As acknowledged by the Navy on page 7-2, Alternative 1

fails to meet the threshold criterion of overall protectiveness. Thus, it cannot be chosen for that reason.

29. **- Air emissions.** The FS in Sec. 6.4.2.5 at page 6-15 mentions uncontrolled release of hazardous vapors as a potential risk of Alternative 3 (ISCO) However, no air ARARs are listed, and in Sec. B2.1.3 (p. B2-2), the FS states that addition of chemicals to the groundwater is not expected to be a potential source of air emissions. This needs to be clarified.