MOFFETT FEDERAL AIRFIELD
DRAFT OPERABLE UNIT 5 FEASIBILITY STUDY
RESPONSE TO COMMENTS
JANUARY 30, 1995

This report presents point-by-point responses to regulatory comments on the draft Operable Unit 5 (OU5) Feasibility Study (FS) Report prepared July 11, 1994 by PRC Environmental Management, Inc. (PRC) for Moffett Federal Airfield (Moffett Field). Mr. Michael Gill of the U.S. Environmental Protection Agency (EPA) provided comments in a letter dated September 12, 1994. Comments were also received from the EPA; Mr. Joseph Chou of the Department of Toxic Substances Control (DTSC); and Mr. Michael Bessette of the San Francisco Bay Regional Water Quality Control Board (RWQCB) during a meeting on September 9, 1994.

The response to comment is divided into two sections: the first section presents responses to EPA written comments, and the second section presents responses to EPA, DTSC, and RWQCB comments received during the September 9, 1994 meeting. In each section, regulatory agency comments are restated, followed by responses.

EPA COMMENTS

GENERAL COMMENTS

Comment 1: The groundwater in the A1-aquifer zone has been impacted by petroleum-related contamination, in addition to the volatile organic compound (VOC) contamination. As a result, there needs to be discussion regarding how the cleanup of the petroleum hydrocarbon groundwater contamination will be coordinated with cleanup of the VOC contamination in the A1-aquifer.

Response: *Section 1.4.2 has been expanded to include a reference to the Moffett Field petroleum sites corrective action plan (CAP) and a statement that the corrective action activities will include the total extent of petroleum contamination in OU5.*

Comment 2: A brief summary of the soil contamination present at each of the sites contributing to the groundwater contamination should be provided. This will facilitate a better understanding of the source areas and the strategy for locating extraction wells or the permeable reaction cell.

Response: *The nature and extent of soil contamination is presented in the OU2 remedial investigation (RI) report (IT 1993b). The unsaturated soils do not act as a source to groundwater contamination based on leaching models evaluated in the OU2 RI (IT 1993b). Therefore, the draft final OU5 FS does not include soil concentration information. Section 1.2.2 gives an overview of contamination at each of the sites within OU5.*

Comment 3: Although funding has been appropriated for a treatability study of Alternative 4A (permeable reaction cell), the lack of documented case studies, technical discussion, and general water quality data makes it difficult to properly evaluate the alternatives. It is recommended that a discussion be presented of case studies conducted on the alternatives (particularly Alternatives 4A, 4B, and 5C) so that an evaluation can be completed. It is unclear if the permeable reaction cell is a demonstrated technology. A full discussion should be provided describing the permeable reaction cell's breakdown of halogenated organics, the cell's permeability, the surrounding soil's permeability, the required residence time for dehalogenating the contaminants, and calculations for the expected life of the cell. Overall, a much better technical discussion of the permeable reaction cell is needed, perhaps as a treatability study report.

Response: *An evaluation of the current information on the effectiveness of pump and treat technologies, the site-specific hydrogeology, and the probable risks associated with OU5 indicates that Moffett Field is a good candidate for innovative remedial strategies. Section 6.4 in the FS report includes an overview of the permeable reaction cell bench-scale study currently underway. A full report on the bench-scale study will be submitted in March 1995 and a treatability study report outlining specific design parameters will submitted after implementation of a pilot-scale system.*

Comment 4: A discussion should be provided regarding the selection of 75 gallons per minute (gpm) as the anticipated flowrate for the groundwater extraction technologies. It is unclear what the basis is for this flowrate. Did the Navy use modeling software to estimate this flowrate?

Response: *Section 4.4.8 discusses the basis for selecting the remedial system flow rate. A groundwater flow model has been used in the draft final FS report to estimate the restoration time frames and groundwater extraction rates.*

Comment 5: The feasibility study's conclusions and remedial action alternatives must be based upon data of known quality. The authors should discuss/document in the FS report whether or not data quality was assessed or taken into consideration during the site characterization process. EPA's data quality objectives require that the data generated during the site characterization be of known quality, and that the qualified-unusable data not be used to develop the conclusions or remedial action alternatives in the FS report.

Response: *Section 1.4.2 has been revised to contain a statement that the data used to prepare this report were gathered in accordance with regulatory agency-approved sampling and analysis plans.*

Comment 6: The presentation of risk appears to be incomplete, as the text does not reflect what is presented in Appendix C. Please clarify that a residential scenario assuming an ingestion pathway has been considered in the calculations.

Response: *Additional text has been added to Section 1.4.3 to reflect information presented in Appendix C. The human health risk assessment (HHRA) and the chemical or contaminant of concern (COC) selection were based on residential exposure to groundwater via ingestion, inhalation of volatilized compounds, and ingestion of irrigated produce. The values in Appendix C reflect occupational exposure risk-based concentrations (RBCs) only; these values were used to evaluate protective levels for occupational receptors. Appendix C RBCs demonstrate that the groundwater does not pose unacceptable risks for occupational receptors.*

Maximum contaminant levels (MCLs) will be used as remediation goals for OU5. MCLs are based on the classification of groundwater as a potential drinking water supply and are established by EPA. MCLs are health-based concentrations that account for economic and technical feasibility of achieving the cleanup level. MCLs inherently account for residential exposure, based on a 2-liter per day ingestion rate and 30-year exposure duration.

Comment 7: The development of background data for inorganics in groundwater did not consider the use of EPA's preliminary remediation goals (PRGs) for comparison with other data.

Response: *PRGs were not used to develop background values for inorganic constituents in the revised draft OU5 FS. The Navy does not believe that PRGs are relevant to establishing background data. The Navy uses background values to establish the naturally-occurring levels of constituents and to identify effects Navy activities have had on the environment. The Navy considers PRGs when evaluating risk to human health caused by the presence of chemicals in soil or water. PRGs may be used to help decide if remedial action is warranted. The Navy has added PRGs to Figures A7 through A18 in Appendix A for comparison in the draft final OU5 FS.*

Comment 8: Schedules of the various treatability studies should be presented to the regulatory agencies so potential delays to remedial action can be anticipated in the overall site activities.

Response: *Two treatability studies, soil vapor extraction and air sparging (SVE/AS) and the iron curtain technology, have been initiated at Moffett Field. A brief discussion and schedule for each of the treatability studies has been provided in the FS report.*

The SVE/AS pilot-scale study was completed in January 1995. Data are currently being compiled and evaluated. The bench-scale study for the iron curtain technology was also completed in January 1995. The positive results indicate that a pilot-scale study should be initiated at Moffett Field. The Navy has funded this study and expects construction to begin in summer 1995. Reports for all studies will be submitted to the regulatory agencies. The heterogeneous nature of Moffett Field requires that any technology be implemented in a phased approach, beginning with a pilot-scale system, to optimize performance.

SPECIFIC COMMENTS

Comment 1: Section 1.3.3.1, Page 15, Last Paragraph. This paragraph discusses future federal government control of Moffett Field is speculation. Please delete it.

Response: *The draft final FS report has been revised as suggested.*

Comment 2: Section 1.3.4, Page 19, First Paragraph. Just because the government shows an interest in controlling Moffett Field today, does not mean that the interest will hold forever. Again, this paragraph is speculative. Please remove it.

Response: *This paragraph has been deleted.*

Comment 3: Section 1.3.4, Page 20, First Paragraph. Because the cities of Sunnyvale and Mountain View report "surplus" water supplies does not mean that the resource will never be utilized by other parts of the county. It also does not take into consideration future drought conditions. EPA realizes this data was reported by the cities of Sunnyvale and Mountain View, but the surrounding areas in Santa Clara County also need to be considered.

Response: *The Navy believes that Sunnyvale and Mountain View represent the only local water supply entities. The paragraph has been expanded to state that areas outside the cities of Sunnyvale and Mountain View have not been considered in the water supply evaluation.*

Comment 4: Section 1.4.2, Page 24, Third Paragraph. Will the results from the additional investigation of OU5 be included in the draft final version of this document?

Response: *The additional investigation results have been included in the draft final FS report.*

Comment 5: Section 1.4.2.1, Page 33, First Paragraph. Insert an explanation for "background." Suggestion: "Background levels are the distribution of naturally occurring levels of inorganic constituents in groundwater.", as in Appendix A.

Response: *The draft final FS report has been revised as suggested.*

Comment 6: Section 2.1, Page 48. A discussion should be provided regarding petroleum hydrocarbons present in the A1 aquifer. Although petroleum hydrocarbons are excluded under CERCLA and this FS, they can still adversely affect cleanup of the groundwater and need to be considered in the evaluation of the technologies.

Response: *Section 1.4.2 discusses petroleum hydrocarbons. The area of chlorinated VOC and petroleum commingled plumes is very small. Since a separate CAP (PRC 1994) has been prepared for Moffett Field to address petroleum contamination, the effectiveness of the different OU5 alternatives on cleaning up petroleum hydrocarbons is not considered a critical screening parameter. Remedies selected under the corrective action program will address the entire extent of petroleum contamination. Petroleum hydrocarbons will not adversely affect any of the alternatives developed in the FS report.*

Comment 7: Section 3.0, Page 53, First Paragraph. Insert citation for your quote, 40 Code of Federal Regulations (CFR) §300.400(g)(1).

Response: *The draft final FS report has been revised as suggested.*

Comment 8: Section 3.0, Page 53, Second Paragraph. Insert citation for your quote, 40 CFR §300.400(g)(2).

Response: *The draft final FS report has been revised as suggested.*

Comment 9: Section 3.0, Page 54, Second Paragraph. Your language implies that you will waive applicable or relevant and appropriate requirements (ARARs) if it is "relevant" to do so. A more accurate way to state this might be:

> The Comprehensive Environmental Response Compensation, and Liability Act of 1980 (CERCLA) §121 provides that under certain circumstances an otherwise applicable or relevant and appropriate requirement may be waived. These waivers apply only to meeting ARARs with respect to remedial actions on site; other statutory requirements, such as the remedies be protective of human health and the environment, cannot be waived. A waiver must be invoked for each ARAR that will be attained or exceeded.

Keep in mind, if EPA does not agree with the remedy you select, EPA has the authority to select the remedy (42 USC §(e)(4)(A)).

Response: *The suggested paragraph has been added to the draft final FS report.*

Comment 10: Table 3-1, Page 56, First Citation. Delete reference to Middlefield, Ellis, and Whisman (MEW). Maximum contaminant level goals (MCLGs) are not ARARs for the reasons you stated in your comment section.

Response: *The reference has been deleted.*

Comment 11: Resolution 68-16. This resolution may be considered a chemical-specific ARAR if it is not an action-specific ARAR.

Response: *Resolution 68-16 may be applicable or relevant and appropriate depending upon the nature of the CERCLA remediation and the circumstances at the site. For this FS the Navy believes that consideration of Resolution 68-16 as a potential action-specific ARAR is an adequate means to satisfy the Navy's obligation to comply with the State's anti-degradation policy.*

Comment 12. Table 3-1, Page 58, Last Citation. Secondary MCLs are not ARARs.

Response: *The table has been corrected accordingly.*

Comment 13: Section 3.1, Page 59, Second Paragraph. Please delete this paragraph. In your discussions regarding MCLs and MCLGs you refer to the MEW Superfund site. You make it sound as though EPA's decision for not using MCLGs at MEW site is the only reason for not using MCLGs at Moffett Field. Possible language to be inserted here is:

> Under the authority of the NCP (40 CFR §300.430(f)(5)), MCLGs set at levels above zero must be attained by remedial actions for ground or surface water that is currently or potentially a source of drinking water, where the MCLGs are relevant and appropriate under the circumstances based on factors in the NCP (40 CFR §300.400 (g)(2)).

Response: *The paragraph has been rewritten as suggested.*

Comment 14: Section 3.1, Page 59, Fifth Paragraph and Table 3-1, Page 58. Are you saying that by meeting the MCL you would be complying with Resolutions 68-16 and 92-49? Resolution 68-16 is an ARAR. Our region has historically taken this position and Resolution 68-16 was the subject of a dispute at Mather Air Force Base. The Mather decision confirms that the Agency believes that Resolution 68-16 is an ARAR. Just because California has laws that are named Resolutions and Policies does not mean that they have not been promulgated and are not legally enforceable. They are enforceable if promulgated.

Response: *The draft final FS report states that complying with the basin plan cleanup goal selection procedures "should result in compliance with other water quality protection requirements" (including Resolutions 68-16 and 92-49). At RWQCB's recommendation, this discussion has also been expanded to state that remediating to background levels is not technically feasible.*

The Navy recognizes that the Mather decision identified Resolution 68-16 as an ARAR. The Mather dispute was focused on setting the treatment goal for a water stream that was being reinjected into the aquifer. Therefore, it appears that the ruling identified Resolution 68-16 as an action-specific ARAR for the discharge created from a pump and treat system. In addition, the dispute recognized that the identification of Resolution 68-16 as an ARAR should be made on a case-by-case basis. The FS report does not state that Resolution 68-16 is not promulgated or not legally enforceable.

Comment 15: Table 3-2, Page 61. The location-specific ARARs addressing construction restrictions in a floodplain, critical habitat for threatened or endangered (T/E) species, wetlands, coastal zone management, and archaeological preservation are not presented in Table 3-2 or Section 6.0, Detailed Analysis of Alternatives. Please identify the specific alternatives these ARARs will be applied to, and whether the ARARs will be attained.

Response: *Section 6.0 has been expanded to discuss these potential location-specific ARARs.*

Comment 16: Table 3-3, Page 63. Permit requirements for surface water discharge ARARs are presented as potentially applicable requirements. As presented on page 53 of the report, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP)

defines ARARs as "...substantive environmental protection requirements...". Permits are administrative requirements, not substantive requirements, and should not be presented as ARARs.

Response: *Permit requirements have been removed from Table 3-3.*

Comment 17: Table 3-3, Page 63, Fifth Citation. Publicly owned treatment works (POTWs) are considered off-site for ARAR purposes. Thus, this is not an ARAR.

Response: *This requirement has been removed from Table 3-3.*

Comment 18: Table 3-3, Page 68. Off-site hazardous waste transportation ARARs are presented as potentially applicable requirements. As presented on page 53 of the report, the NCP defines ARARs as on-site actions and "...address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site...". Off-site requirements are not ARARs.

Response: *This requirement has been removed from Table 3-3.*

Comment 19: Table 3-3, Page 68. Worker safety requirements for remedial action ARARs are presented as potentially applicable requirements. As presented on page 53 of the report, the NCP defines ARARs as "...substantive environmental protection requirements...". Worker safety requirements are not environmental protection requirements and should not be presented as ARARs.

Response: *This requirement has been removed from Table 3-3.*

Comment 20: Section 4.1.2, Page 70, Second Paragraph. It is not clear that ingestion is considered as a pathway for OU5 groundwater (potential drinking water source). The residential risk scenario needs to include these pathways and be presented to the public (as total risk), even if its use is not in the present land use plans.

Response: *Ingestion of groundwater, inhalation of volatilized chemicals, and ingestion of irrigated produce were evaluated in the human health risk assessment for the*

residential scenario. Risk values presented in Tables 1-2 and 1-3 present the chemical specific-risks for these three pathways as calculated in the OU5 RI report (IT 1993a). Results of the human health risk assessment were used to select COCs for the FS report. The text has been clarified accordingly.

Comment 21: Section 4.4.6.1, Page 90. Soil vapor extraction (SVE) has been used at the Sacramento Army Depot (SAAD) with some success. The Navy can find out more about the effectiveness of this technology by calling Mr. Marlon Mezquita of EPA Region 9 at 415-744-2393. He is the project manager for this site.

Response: *Mr. Mezquita was contacted and the effectiveness of the SVE technology at the SAAP site was discussed. The information has been incorporated into the draft final OU5 FS report.*

Comment 22: Section 4.4.7.2, Page 96. Ultraviolet (UV)/oxidation was the selected remedy for treating VOCs in groundwater at Lawrence Livermore National Laboratory (LLNL). At least two problems have arisen using this technology. Calcium carbonate buildup within the system has been a problem in the past and has caused system shutdowns for maintenance. The reasons are not fully understood. Also, unacceptable fish toxicity in the effluent has occurred because of suspect batches of hydrogen peroxide used in the process. The remedy is effective, but the Navy should be aware that these could be potential problems if the remedy is chosen.

Response: *The Navy is aware that there are unknowns and potential problems with UV/oxidation systems. If a UV/oxidation system is chosen as the remedial action alternative, a treatability study will be conducted to evaluate potential problems and system effectiveness in treating OU5 groundwater. At this time, however, the Navy does not plan to use a UV/oxidation system at Moffett Field.*

Comment 23: Section 4.4.7.3, Page 99, Third Paragraph. Steam stripping has proven to be a very effective method for removing gasoline from the groundwater at LLNL. It is an energy intensive operation, but performs the remediation very rapidly. In the long run, this can save operation and maintenance costs. This technique is also being researched by the Navy and University of California (UC) Berkeley for remediation of

various sites at Naval Air Station (NAS) Alameda. For more information, the LLNL point of contact for this project is Ms. Robin Newmark at 510-423-3644. They are also currently investigating the use of steam stripping at DNAPL sites.

Response: *The Navy agrees with the performance of steam stripping in removing gasoline from groundwater. However, in treating groundwater contaminated with low concentrations of VOCs, such as those found in OU5, air stripping is more effective than steam stripping. Steam stripping offers many advantages over air stripping for cases of highly contaminated groundwater. The Navy eliminated steam stripping from the FS screening process because it was not as effective to address low VOC contaminant levels. Additionally, EPA's document "Contaminants and Remedial Options at Solvent-contaminated Sites," EPA/600/R-94/203, November 1994, does not show steam stripping as an effective groundwater treatment technology on solvent contaminant groups.*

Comment 24: Section 6.1, Page 112, Second Paragraph. Quarterly groundwater monitoring is presented in the text for Alternative 1. Reference should be made to the CERCLA requirement for a no less than 5-year remedial action review for contaminants remaining on the site.

Response: *The Navy has added a specific reference to the CERCLA requirement for a 5-year remedial action review when contaminants remain on the site.*

Comment 25: Section 6.1, Page 113, Fourth Paragraph, Sentence 2. A reference should be provided for the following statement: "However, current available data indicate that the plume is not affecting the wetlands."

Response: *A reference has been provided as suggested.*

Comment 26: Section 6.2, Page 116, Fifth Paragraph. A statement should be provided regarding how the site-wide ecological assessment (SWEA) and its evaluation will be incorporated into the OU5 FS.

Response: *Preliminary results from the draft final phase I SWEA have been incorporated into the discussion and evaluation of remedies. The station-wide FS will also incorporate the results of the SWEA.*

Comment 27: Section 6.3, Page 119, Fifth Complete Paragraph. The requirements of the Bay Area Air Quality Management District (BAAQMD) are not presented in sufficient detail to determine what specific emission limitations must be attained. Please identify what specific standard, requirement, and/or limitation (that is, Best Available Control Technology [BACT], emissions limitation, monitoring, testing) must be attained.

Response: *The specific requirements for a future treatment plant will be dependent on the regulations in place at the time the plant is constructed and operational.*

Comment 28: Section 6.3, Page 121, Second Complete Paragraph. The cost for the water treatment plant (Appendix D) does not appear to include physical or chemical pretreatment that would be needed for air stripping.

Response: *The future treatment option assumes that the water users will remove inorganic compounds since the background levels exceed MCLs. It is the inorganic compounds that cause scaling problems.*

Comment 29: Section 6.4, Page 121, First Paragraph. An explanation should be provided concerning whether the permeable reaction cell will work on total petroleum hydrocarbon (TPH) constituents.

Response: *Section 4.4.6.2 has been expanded to include a statement that the chemical reaction cell will not reduce TPH compounds. Technologies presented in the OU5 FS will not be screened based on the ability to remediate TPH compounds. Please see response to EPA specific comment 6.*

Comment 30: Section 6.4, Page 123, First Incomplete Paragraph, Last Sentence. This sentence appears out of place and should be moved into the next paragraph.

Response: *The sentence has been moved into the next paragraph as suggested.*

Comment 31: Section 6.4, Page 124, Long-Term Effectiveness and Permanence. Because of the potential for the release of soluble iron, a discussion should be provided, based on case studies, that evaluates this inorganic contamination.

Response: *The discussion of soluble iron has been expanded based on information from a full-scale implementation of the technology. The inorganic data from the Navy's bench-scale study are still being summarized. This information will be included in the bench-scale summary report scheduled for submittal in March 1995.*

Comment 32: Section 6.4, Page 125, Reduction in Toxicity, Mobility, and Volume. A description should be provided of the reaction cell permeabilities. Can hydraulic control of these contaminants be maintained?

Response: *The treatment system has been evaluated for implementation in the sand channel areas only, as agreed in the conference call of January 7, 1995 between the regulatory agencies and the Navy. A description of the reaction cell permeability ranges in this area has been added to the report and compared to existing non-channel permeabilities.*

Comment 33: Section 6.4, Page 125, Reduction in Toxicity, Mobility, and Volume. It would be helpful if references to case studies were provided for the reader that document the effectiveness of this treatment process. Also, it is not clear if the leading edge of the plume will be treated or will not be captured.

Response: *The discussion has been expanded to provide additional information on the effectiveness of this alternative. In addition, the draft final FS report includes more detailed discussions on the implementation of the technology with regard to the plume location.*

Comment 34: Section 6.5, Page 129, Compliance with ARARs, Third Paragraph. Please delete the sentence: "The transportation and disposal of hazardous wastes off-site are subject to transportation and TSD facility requirements given in CCR Title 22, Division 4.5, Chapters 13 and 14." These are not ARARs because they apply to actions off-site. Off-site action must comply with requirements that are legally applicable and must comply with both substantive and administrative parts of those requirements.

Response: *The sentence has been deleted.*

Comment 35: Section 6.6, Page 136, First Paragraph, Last Sentence. The treatment of groundwater using an air stripper that meets the BAAQMD requirements does not remove those requirements as an ARAR. The BAAQMD requirements remain applicable and are attained using the technology selected for this alternative. The last sentence of this paragraph should be re-phrased to state that the alternative meets BAAQMD requirements.

Response: *The text has been changed accordingly.*

Comment 36: Section 6.6, Page 136, Second Paragraph, Sentence 2. Although the underground injection control standard (40 CFR 144-147) is presented in Table 3-3 (Potential Action-Specific ARARs), the California Toxic Injection Well Control Act (CTIWCA) of 1985 is not presented. Please present the relevance of this law and the application of the federal underground injection control program.

Response: *The CTIWCA has been added to Table 3-3 and additional information on reinjection has been added to ARAR discussion.*

Comment 37: Section 6.6, Page 136, Second Paragraph, Sentence 3. "In addition, all discharges must meet the concentration levels dictated by the basin plan and promulgated state water quality policies ... Insert the word "promulgated."

Response: *The Navy made the suggested change in the draft final FS report.*

Comment 38: Section 6.6, Page 136, Third Paragraph. OSHA is not an ARAR. OSHA is more properly viewed as an employee protection law rather than an "environmental" law, and thus it is not an ARAR. (See generally, Federal Register Vol. 55, No. 46, March 8, 1990).

Response: *OSHA has been eliminated from the ARAR discussion.*

Comment 39: Section 6.6, Page 136, Sixth Paragraph, Sentence 1. Your sentence is unclear. The way that it is worded makes it sound like the hazardous waste will be conducted by transporters... Please reword this sentence. Keep in mind that actions that take place off-site are not ARARs. However, any actions that need to be done at the site before transport off-site are ARARs.

Response: *The sentence has been reworded.*

Comment 40: Section 6.6, Page 138, Third Complete Paragraph, Last Sentence. Please provide a better description regarding those components likely to require replacement.

Response: *A partial list of components likely to be replaced over the life of the treatment system has been added.*

Comment 41: Section 6.7, Page 141, Paragraph 2. It is very likely that high turbidity levels are attributable to both filterable and nonfilterable solids, and not just one or the other. This paragraph should be changed to reflect this. Also, a discussion should be presented describing how the treatment system will be impacted by the turbidity if the bag filter system is inadequate.

Response: *The paragraph has been changed accordingly.*

Comment 42: Section 6.7, Page 142, First Paragraph. The basis for selecting the flowrate of 75 gpm should be provided.

Response: *Section 4.4.8 discusses the basis for selecting the remedial system flowrate.*

Comment 43: Section 6.7, Page 143, Second Paragraph, Sentence 3. See comment on second paragraph, second sentence of page 136.

Response: *Please see the response to EPA specific comment 36.*

Comment 44: Section 6.7, Page 143, Second Paragraph. You cite Resolution 63-16. It is assumed you mean 68-16. Also, insert the word "promulgated" before "state water quality policies..."

Response: *The text has been corrected accordingly.*

Comment 45: Section 6.7, Page 143, Third Paragraph. OSHA is not an ARAR for reasons indicated earlier.

Response: *OSHA has been eliminated from the ARAR discussion.*

Comment 46: Section 6.8, Page 151, First Paragraph. Insert the work "promulgated" before the phrase "state water quality policies...". Also, is the resolution supposed to be SWRCB 68-16?

Response: *The text has been corrected.*

Comment 47: Section 6.8, Page 151, Fourth Paragraph. Same comment as in page 136, sixth paragraph, first sentence. Your sentence is unclear.

Response: *The sentence has been reworded.*

Comment 48: Section 6.8, Page 151, First Paragraph, Sentence 4. See comment on second paragraph, second sentence of page 136.

Response: *Please see the response to EPA specific comment 36.*

Comment 49: Section 7.0, Page 155. You present eight criteria because you chose to combine state acceptance and community acceptance. This is fine, however, it could be a little confusing to a reader because they will be looking for nine criteria. You can either add a sentence that you will be discussing community acceptance and state acceptance together, or you can separate them.

Response: *State acceptance and community acceptance have been separated to avoid confusion.*

Comment 50: Section 7.0, Page 155. Presentation of the eight alternatives versus the nine criteria in a table showing weights assigned to each block might allow a somewhat objective look at the comparative analysis that has been done in Section 6.

Response: *A tabular presentation showing the comparative analysis of the eight alternatives versus eight evaluation criteria has been provided (community acceptance was not included).*

Comment 51: Please include the PRGs for inorganics in tap water from the attached EPA PRG tables in the figures which show the histograms of the maximum inorganics values detected in the A1 and A2 wells (Figures A-7 through A-18). This will provide another baseline against which we can compare these detected values.

Response: *PRGs have been added to Figures A7 through A18 in Appendix A.*

EPA COMMENTS ON APPENDIX A BACKGROUND EVALUATION AND SPATIAL ANALYSIS

Comment 52: The Navy has attempted to use data from existing wells that would appear to be the least impacted by on-site activities for determining background for inorganics. It is difficult to insure no impact from Navy activities, as the initial placement of these wells was to determine extent of local contamination; the purpose was to install the wells closest to the impacts of Navy contamination. Because of the costs that would be involved in setting up another series of wells specifically for determining background, EPA agrees with this attempt at using existing data. But some of the locations are questionable. The Navy should present the Installation Restoration Program (IRP) sites and associated plumes on Figures A-5 and A-6 so that the reader can verify that these wells being used are, in fact, the least impacted. For example, with the history of use of Marriage Road. Ditch being one of a conduit for contamination from various sources, how can the Navy justify the locations of W3-3, W3-8 and W3-13 as background well locations?

Response: *Different wells have been selected that are not adjacent to Site 3; they can be used as replacement wells for those in question for establishing background values for metals in groundwater. However, the Navy believes the initial selection of background wells was representative of unaffected areas and showed no indication of contamination.*

Comment 53: It appears that there is a disconnect between the text (see comment regarding page 70) and this appendix. The Navy needs to calculate risk for a residential scenario including ingestion as a pathway and present it as such.

Response: *Please see the response to EPA specific comment 20.*

Comment 54: Region 9 reserves the right to use 10^{-6} as a departure point used to trigger a remedial response, regardless of OSWER guidance.

Response: *The Navy acknowledges EPA's desire for flexibility in meeting its responsibility to protect human health and the environment.*

EPA, DTSC, AND RWQCB COMMENTS (SEPTEMBER 9, 1994 MEETING)

SPECIFIC COMMENTS

Comment 1: Page 16, RWQCB. The Navy should identify all known groundwater supply wells on or near Moffett Field, including those of the Santa Clara Valley Water District (SCVWD).

Response: *There are no current groundwater supply wells on Moffett Field. The SCVWD has been contacted to identify all their municipal wells within a 5 mile radius of Moffett Field. However, the SCVWD response was not available at the time the draft final FS report was submitted. The information will be added to the final FS.*

Comment 2: Page 18, Second Paragraph, DTSC. DTSC questioned if land at Moffett Field had actually subsided due to groundwater pumping.

Response: *In the meeting on September 9, 1994, RWQCB and the Navy stated that, due to historical pumping of groundwater in the area, all of Santa Clara Valley experienced significant subsidence though this has been mitigated by controlled pumping. A reference has been provided in the FS report.*

Comment 5: Page 26, Figure 1-5, RWQCB. The two areas of highest trichloroethene (TCE) contamination should be clearly identified as such, the contours corrected to reflect this, and the locations of the possible sources (former Tanks 2 and 43) be presented.

Response: *The text and figure have been modified accordingly.*

Comment 6: Page 29, RWQCB. All wells mentioned in the text need to be shown on the appropriate figures.

Response: *The referenced wells have been included in the figures.*

Comment 8: Page 33, Third Paragraph, RWQCB. RWQCB asked whether chromium and arsenic are considered COCs and whether the additional sampling results for these metals will be included in the draft final report.

Response: *All chromium and arsenic data have been summarized in the FS report and these metals are not identified as COCs based on the results of the most recent sampling (November 1994).*

Comment 9: Page 34, Third Paragraph, RWQCB. In the screening of antimony from the list of COCs, RWQCB indicated that the Navy should identify how many sampling events were used to evaluate the presence of antimony at the wells in question.

Response: *The number of sampling events and detections have been provided in the draft final FS report.*

Comment 10: Page 35, Second, Third and Fourth Paragraphs, RWQCB. RWQCB reiterated that when screening antimony, arsenic, and beryllium from the list of C-aquifer COCs, the Navy should identify how many sampling events were used to evaluate the presence of these metals at the well in question.

Response: *The number of sampling events and detections for any constituent screened on the basis of background have been provided.*

Comment 17: Page 48, Third Paragraph, DTSC. DTSC asked the Navy to add data gathered during the July 1994 sampling event to the paragraph that screened bis(2-ethylhexyl)phthalate (BEHP) and bis(2-chloroethyl)ether (BCEE) from the COC list.

Response: *The text has been changed accordingly.*

Comment 18: Page 48, Third Paragraph, RWQCB. RWQCB expressed concern about the elimination of chloroform as a COC and requested that the Navy reevaluate its screening.

Response: *Summary data for chloroform have been included in the draft final FS report.*

Comment 19: Page 50, Second and Third Paragraphs, DTSC. DTSC requested that the Navy provide a table that comparing general water quality characteristics of the OU5 aquifers.

Response: *This table has been provided in the FS report.*

Comment 20: Page 51, Third Paragraph, RWQCB, DTSC, EPA. The agencies stated that they would like the Navy to show in Figure A-3 the location of the IRP sites in relation to the location of revised background wells. The agencies also would like the Navy to clarify that not all metals display a trend toward increasing concentration in groundwater in OU5 with increasing total dissolved solids (TDS) content. The Navy needs to avoid the use of vague terms such as "moderate" and provides specific ranges of values.

Response: *The text has been changed accordingly.*

Comment 21: Page 52, First Paragraph, RWQCB. RWQCB indicated that the Navy needs to clarify its discussion of the statistical comparison used to compare background and site data. Also, it would be helpful to show a summary table of the old background values, the revised background values, and a water quality standard.

Response: *The statistical discussion has been clarified. A summary table of the background values and water quality standards, however, has not been provided since they are discussed in the text.*

Comment 22: Page 53, Second Paragraph, RWQCB. RWQCB stated that the Navy needs to provide a complete discussion of the data for chromium and arsenic; determine if they are COCs and present a discussion of the risks associated with these metals.

Response: *The text has been changed accordingly.*

Comment 23: Appendix A, EPA. EPA recognizes the weakness of the old background values in that statistical comparisons cannot be made. However, EPA is concerned over the selection of some of the new background well locations in the vicinity of IRP sites. Specifically, wells W3-3 and W3-8, since they are adjacent to Marriage Road Ditch (Site 3).

Response: *Organic data for the wells W3-3 and W3-8 have been evaluated to assess whether the groundwater at the wells has been affected by Navy activities. No detections of organic chemicals have been observed at these wells. The Navy has agreed to replace these wells with other wells (WNB-4 and WNB-15) in the high TDS region of the shallow aquifer to maintain a representative number of background wells for statistical comparisons.*

REFERENCES

International Technology Corporation (IT). IT 1993a. Final Remedial Investigation Report, Operable Unit 5: East Side Aquifers. Naval Air Station, Moffett Field, California. August.

IT 1993b. Remedial Investigation Report, Operable Unit 2: Sites 3-11, 13, 14, 16-19 Soils. Naval Air Station, Moffett Field, California. May.

PRC Environmental Management, Inc. (PRC). 1994. Final Installation Restoration Program Petroleum Sites (And Wastewater Tanks and Sumps) Corrective Action Plan, Moffett Federal Airfield, California. November.