



Department of Toxic Substances Control

M60050.002370
MCAS EL TORO
SSIC #5090.3



Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

Winston H. Hickox
Secretary for
Environmental
Protection

Gray Davis
Governor

MEMORANDUM

TO: Mr. Tayseer Mahmoud
Remedial Project Manager

FROM: Ms. Marsha Mingay *mmg*
Public Participation Specialist

DATE: January 21, 1999

SUBJECT: PROPOSED PLAN FOR GROUNDWATER REMEDIATION AT MARINE
CORPS AIR STATION EL TORO (OPERABLE UNIT 1 SITE 18 AND
OPERABLE UNIT 2A SITE 24)

Thank you for the opportunity to review the above referenced document. The document attempts to fully explain the remedial investigation and feasibility studies done for OU 1 Site 18 and OU2A Site 24. Please note that in conducting my review, I did not compare the information in the Proposed Plan with the information contained in the remedial investigation and feasibility study reports or the proposed agreement between the United States and the Irvine Ranch and Orange County Water Districts.

In addition to the comments presented below, please note that in mailing documents to the Mr. Joyce's address (the same address that public comments are to be sent to), we have had several pieces of mail returned as "address unknown".

If you have any questions regarding the following comments, please contact me directly at (714) 484-5416.

GENERAL COMMENTS:

1. This document, which is written with the intent of educating the public and inviting them into the decision making process, is hindered in achieving its goal by the documents length and small font. Both of these make the document hard to read and it is difficult to conceive an average person spending the time to review the full 18 pages. It is strongly suggested that the text be further simplified and shortened to increase the reader's ability to understand the material being presented.
2. Throughout this document, please substitute the proper name "United States" with the agency's name who is responsible for the agreements and decisions. This clarification

will help the reader to understand what agency within the federal government is responsible for the cleanup and agreements being made.

3. Since this document contains technical information and many definitions, it is suggested that a glossary be included. Having all definitions in a central place may increase the reader's ability to understand the material being presented.

SPECIFIC COMMENTS:

4. Page 1, Public Comment Period, text inset — Please add the following words to the existing sentence; the addition will clarify the documents available for public review and comment. "We encourage you to comment on this Proposed Plan, Remedial Investigation and Feasibility Study for OU1 Site 18 and OU2A Site 24. The thirty-day comment period begins on xxx and ends on June 9, 1999. All comments postmarked by June 9, 1999 will be evaluated in the final decision. Please mail comments to Written responses to comments received will be recorded in a Record of Decision (see page 17)."
5. Page 1, first column, third paragraph — It is believed that this paragraph also addresses Site 18; however, the introductory sentence only mentions Site 24. Please review and correct as applicable.
6. Page 1, first column, third paragraph — To clarify the information presented, please add the following word to the existing sentence, "TCE is present in a groundwater plume that ...". Additionally, to assist in minimizing unnecessary concern, please add a sentence that states "The groundwater is currently not used as a drinking water source."
7. Page 1, first column, third paragraph — To shorten the length of the Proposed Plan, and to remove information that may be of secondary importance, it is suggested that the following information be deleted. (Please note that this information is found, in greater depth, on page two.) "Two large aircraft hangars and other ...TCE is no longer used at the Station".
8. Page 1, second column, second full paragraph — This paragraph, which summarizes a proposed agreement between the "United States" and Orange County Water District and Irvine Ranch Water District, is confusing. Conclusions drawn from this paragraph are: 1) groundwater will be treated to drinking water standards; 2) VOC treatment will be done at the expense of Orange County Water District and Irvine Ranch Water District; 3) VOCs will be treated at the Irvine Desalter Project treatment plant; and, 4) Orange County Water District and Irvine Ranch Water District will also treat total dissolved solids and nitrates. Are the above conclusions correct? If not, please make the appropriate changes.

Additionally, the paragraph leaves several questions: If the preferred alternative is based upon this proposed settlement with Orange County Water District and Irvine Ranch Water District, then isn't the public comment period moot? If the proposed settlement fails, what is the proposed alternative? It would seem that Orange County Water District and Irvine Ranch Water District is paying for the removal of VOCs. If this is correct, why are they paying for cleanup of groundwater that the Department of Defense contaminated?

It is suggested that new wording be created to address these types of probable questions from the community. To address the possibility that the proposed settlement is not signed, the following statement is suggested, "The Department of the Navy will consult with regulatory agencies and propose a different alternative that will be subjected to public review and comment."

9. Page 1, second column, second full paragraph — To increase the reader's ability to understand this document at a glance, state the preferred alternative's number.
10. Page 1, second column, second full paragraph — As stated in the General Comments listed above, state the agency's name that is entering into the agreement with Orange County Water District and Irvine Ranch Water District.
11. Page 1, second column, second full paragraph — The second sentence needs to be further clarified by using the proper name versus the pronoun of "their" ("... at a VOC treatment plant constructed at their planned Irvine Desalter Project ...").
12. Page 1, second column, second full paragraph — Include definitions for "total dissolved solids" and "nitrates".
13. Page 2, introductory paragraph, last sentence — Since this section also includes a summary of OU2A Site 24, it is believed that the sentence is incomplete in introducing the material in this section. The following wording is suggested. "An overview of the environmental investigation results pertaining to groundwater contamination and soil contamination (VOC source area) at these two sites is presented below."
14. Page 2, first column, second paragraph under "Site Background" — The sentence states, "Water from the irrigation wells used for agriculture is not adversely impacted by the low TCE concentrations in the groundwater. Drinking water wells ... are also not affected." Please clarify in the Proposed Plan what is meant by "not adversely" and "not affected". By clarifying the information presented, the average reader will know if the agricultural products can be currently eaten without risk to human health and if drinking water today from the "drinking water well" is safe for human health. In essence, a plain and

straightforward approach to these basic concerns would assist the reader in understanding the material under review.

15. Page 2, second column, first paragraph, last sentence — It is feared that the word "incidental" will be interpreted to mean, secondary or inconsequential. Since it is assumed that the Department of Defense does not intend this meaning, please replace this word.
16. Page 2, second column, "Previous Studies" — It is suggested that this information be further simplified to the basic interests of the reader; namely, several studies were conducted, former employees were interviewed, a cleanup and abatement order was issued (also state that this was for), investigations verified VOCs were present in groundwater, and the cleanup and abatement order was rescinded (also state why it was rescinded). Currently, the information explains Site Inspection Plan of Action and the number of sites recommended for investigation. It is felt that this level information is secondary to a general overview of the above mentioned activities.

However, if the current wording remains, please incorporate the following: 1) define a remedial investigation/feasibility study, 2) state what the cleanup and abatement order was for, 3) state where the three extraction wells came from (did DoD install them for this express use), and 4) state why was the cleanup and abatement order rescinded.
17. Page 3, map — To increase the visual reference for Site 24, follow the layout for Site 18. Specifically, insert "Site 24" into the white area outside of the base map.
18. Page 3, first line on page — Please change the following sentence as indicated since investigations prior to this stage had verified chemical releases had occurred. "... and characterize the nature and extent of ~~potential~~ chemical releases into the environment ..."
19. Page 3, first full paragraph, first sentence — Please remove the word "extensive" since it is subjective and unsupported in meaning.
20. Page 3, first full paragraph, second sentence — The sentence explains why the first phase concentrated on IRP sites within the Station, but does not explain why it also focused on the groundwater west of the Station's boundary. Please provide additional information.
21. Page 3, first full paragraph, third sentence — It is suggested that the word "but" be replaced with the word "and". Using the word "and" corrects the sentence's meaning.
22. Page 4, second column, "Irvine Desalter Project" — To clarify the information presented, insert the common name of the inorganics being referred to in this sentence, the following

language is suggested, "Remediation of inorganic compounds (nitrates and total dissolved solvents) in groundwater ...".

23. Page 5, text inset box — It is thought that the average reader will interpret the information to mean that although the cleanup of VOCs is the Department of Defense's responsibility, they are proposing to use a treatment system built and paid for by the Orange County Water District and Irvine Ranch Water District (see last paragraph of text). Please add sufficient information to clarify the relationship.
24. Page 6, introductory paragraph — To increase the reader's understanding of the risks, add the following words to the existing sentence, "potential risks to human health are present if untreated water is used for drinking or bathing."
25. Page 6, introductory paragraph — The information states that ecological risk assessments were not performed because groundwater is too far below the surface for plant and animal exposure. However, the average reader may be interested in how the shallow soil area at Site 24 affects plants and animals. Please provide additional information to answer this concern.
26. Page 6, "Identifying Exposure Pathways" — The paragraph states what assumptions were made to determine risk from groundwater. Please state the assumptions made to determine risk from shallow soils.
27. Page 6, "Estimating Human Health Risks" — Although the first two sentences were used in prior Proposed Plans reviewed by this office, the statements could be improved by stating why these declarative sentences are true.
28. Page 6, "Estimating Human Health Risks", first paragraph, last sentence — Please clarify the term "reasonable maximum potential risk" or use the language from a previous proposed plan (i.e., "The assumptions made during the risk assessment process lead to an overestimation of potential risk and provide a margin of safety").
29. Page 6, "Estimating Human Health Risks", second paragraph, third sentence — Clarify the meaning of "extended" in the sentence, "... it is calculated assuming an individual has an extended exposure to the chemicals."
30. Page 6, "Estimating Human Health Risks", second paragraph, last sentence — To improve clarity, insert commas before and after the phrase, "in addition to those cases that otherwise occur".

31. Page 6, "Estimating Human Health Risks", last paragraph, last sentence — Please note that there is no mention of using the hazard index to determine risk to human health and the environment for current or future uses. It is suggested that this be added.
32. Page 6, "Risk Assessment Results" — Please delete the phrase, "and exposure to untreated groundwater at some locations has risk levels that exceed 10^{-4} " since this subsection addresses soil only.
33. Page 7, second column, first partial paragraph — To clarify the information and further educate the reader insert, in parenthesis, examples of the VOCs attributable to Station activities.
34. Page 7, second column, first full paragraph — Since the VOCs exceed maximum contaminant levels (MCLs), and since page 6 states that MCLs set the maximum permissible level of contaminate delivered to a user of public water, the sentences in this paragraph seem incorrect. A more appropriate sentence (versus the sentences in this paragraph) would read, "The VOCs in the principal aquifer exceed MCLs therefore remedial action must be taken to bring the VOCs into compliance with the drinking water standards."
35. Page 7, Table 1 — To increase the reader's ability to understand the material being presented, include, in the table, a column which provides the maximum detected VOCs levels found at the site. Without this information, it is hard for the reader to comprehend how much cleanup is needed to bring the site into compliance with the standards.
36. Page 8, first column, first full paragraph — To improve the flow of information being presented, it is suggested that the sentence, "Leaching is a process ... through the soil" be stated within parenthesis. This will appropriately set it off from the main text and identify it as an explanation of the preceding sentence.
37. Page 8, second column, first partial paragraph — The paragraph states, "The IDP Project relies on the VOC-related wells and treatment system being planned by OCWD/IRWD". This sentence creates the idea that the OCWD and IRWD will be extracting and treating VOCs. This is a new fact and needs to be clarified and explained. As stated in an earlier comment, the community may ask, "Why is the water districts paying for the cleanup of VOCs contamination caused by the Marine Corps?". Please add sufficient information which clarifies this issue for the reader.
38. Page 8, Alternative 6A — To further educate the reader, provide a definition for "blending".

Mr. Tayseer Mahmoud

January 21, 1999

Page 7

39. Page 8, Alternative 6A (and in all other areas where this issue arises) — To clarify the process and further explain the roles and relationships, explain why the IDP is treating VOCs versus treating for total dissolved solids and nitrates.
40. Page 8, second column, last partial paragraph — To further offset Alternatives 2A and 6A from the text, insert a space between the description of Alternative 6A and the paragraph which precede it. This will match the format established between the introductory paragraph and the description of Alternative 2A.
41. Page 9 — It is suggested that the text include, in parenthesis, the cost of the groundwater extraction and treatment system for the principal aquifer. This will substantiate the reference to "high cost".
42. Page 9 — The definitions for natural attenuation and monitored natural attenuation seem to be lost in the text. Since it is secondary to the information being presented, place the information in parenthesis.
43. Page 10, Alternative 7B - The text does not specifically state that the Marine Corps will use the irrigation wells to extract groundwater. Please add supporting text to clarify. The text also does not state that the extracted groundwater will be treated in the existing VOC treatment system for shallow groundwater. Add sufficient wording to clarify this process. Also state how the treated water will be injected into the deeper aquifer.
44. Page 10, Alternative 8 — The phrase, "extracts groundwater from wells in the shallow groundwater unit at the existing wells located primarily in the principal aquifer", is confusing. It is not clear if the wells extract from within Site 24 shallow area, outside Site 24 shallow area or from the principal aquifer or all of the above. Please review and reword to clarify the information.
45. Page 11, Site 24, introductory paragraph, second sentence — Should the word "include" be substituted with the word "used"? Please review and make the necessary correction as applicable.
46. Page 11, Alternative 10B — Since this alternative is similar to 10A which is identical to 6A, and since 6A has a conceptual drawing in the proposed plan and 10A does not, it would be clearer for the reader if the reference is to 6A and 10A. Please review and make appropriate changes to the document.
47. Page 12, Remediation of VOC-Contaminated Soil at Site 24, first sentence — To minimize the possibility that the reader believes this was a final remedy, insert the word "interim" before the phrase, "remedy selected to remove VOCs from soil".

Mr. Tayseer Mahmoud

January 21, 1999

Page 8

48. Page 12, Remediation of VOC-Contaminated Soil at Site 24 — Please substantiate or delete the sentence "SVE is an integral part of the groundwater remedy". As the paragraph is written, the sentence does not connect with the surrounding sentences.
49. Page 12, Remediation of VOC-Contaminated Soil at Site 24, second paragraph, first sentence — Although soil vapor extraction has been used successfully at some sites, there are critics of this technology who would state that it is not a "proven technology". To remain with purely factual statements, it is suggested that the first sentence in this paragraph be substituted with an opening phrase that leads into the definition of soil vapor extraction and how conditions at the base promotes the VOC extraction.
50. Page 12, Remediation of VOC-Contaminated Soil at Site 24, third paragraph, first sentence — The purpose of the Proposed Plan is to educate the reader sufficiently enough so that they can comment on the proposed cleanup actions. Since the alternatives in this Proposed Plan rely upon soil vapor extraction, it is believed that the following phrase needs to be substantiated so that the reader can determine if soil vapor extraction is "effective, technically feasible for site conditions, and poses a minimum of risk to public health and the environment".
51. Page 12, Remediation of VOC-Contaminated Soil at Site 24, last paragraph — To increase the reader's ability to understand the material being presented, include a definition for "rebound effect".
52. Page 12, Remediation of VOC-Contaminated Soil at Site 24, last paragraph — To increase the clarity of the information being presented, define what is meant by "concentrations are minimal" and "VOC mass that can be removed is very small". At what level, or at what mass, will the Marine Corps reevaluate and perform a technical and economic feasibility analysis? Please include this information to assist the reader in understanding the proposal.
53. Page 12, Remediation of VOC-Contaminated Soil at Site 24, table — To increase the reader's ability to understand site conditions and the amount of cleanup required to meet cleanup goals, include, in the table, a column which provides the detected soil gas levels found at the site.
54. Page 13, introductory paragraph — Since an alternative named "Enhanced Alternative 8" was not introduced in the previous sections, this terminology needs to be explained prior to introducing it as the preferred alternative.

Mr. Tayseer Mahmoud

January 21, 1999

Page 9

55. Page 13, Enhanced Alternative 8, last sentence — Please state the reference for the conclusion "Enhanced Alternative 8 is the functional equivalent of the Site 18 Alternative 6A in terms of VOC mass removal, the volume of extracted groundwater ..."
56. Page 13, Alternative 10B' — The following questions arise from reading the current wording. It is suggested that additional information be added to the Proposed Plan in order to answer these issues before they arise.
- What criteria will be used by the Marine Corps and regulatory agencies in determining the actual number and location of wells? Why is this information not included in the proposed plan? Why is the public not allowed to comment on this part of the proposal?
 - Why does the preferred alternative include a drop in the flow rate? Is this drop in flow rate more effective?
 - How can the cleanup time be comparable to 10B when the flow rate has dropped from 800 gallons per minute (gpm) to 440 or 550 gpm?
57. Page 13, Enhanced Alternative 8 and Conceptual Design — The conceptual design depicts a "VOC Pretreatment Plant at Site 24". This stage of the process is not explained in the Enhanced Alternative 8 description. Please add information which describes this stage. Note that it is not clear to this reviewer why the pretreatment of VOCs is not within CERCLA.
58. Page 13, Additional Measures, first paragraph — The information is confusing and needs to be written in a more straightforward manner. The following is suggested, "If the Marine Corps preferred remedy is selected, the Record of Decision will include specific procedures which authorize the temporary and/or permanent shut down of the IDP. This will be used in the unlikely event that additional contaminants are detected which would not be adequately treated by the IDP."
- To increase the flow of information, place the last paragraph in column two immediately following the suggested wording listed above.
59. Page 13, second column, first paragraph and the two bullets — To separate the CERCLA activities from the non-CERCLA activities, create a subheading for non-CERCLA activities.
60. Page 14, First paragraph -To present the information which follows, include an introductory sentence which tells the reader there are two settlement agreements.

Mr. Tayseer Mahmoud

January 21, 1999

Page 10

61. Page 14, first paragraph — As stated in earlier comments, please clarify why there are VOC related components in the Irvine Desalter project.
62. Page 14, Comparative Cost Estimate Summary - It is not clear to the average reader, why the preferred remedy is lower in costs than the alternatives that it is based on. It is strongly suggested that an explanation, in non-technical terms, be provided.
63. Page 15, introductory text — Please state at the end of the text, "A more in-depth evaluation of all the alternatives is contained in (name of document). This document is available for review and comment. Please see 'Where to Get More Information' for viewing locations."
64. Page 15, Primary Balancing Criteria, first bullet — The term "air stripping" has not been defined in the Proposed Plan. Please provide a definition either in this section or in the descriptions of the alternatives.
65. Page 15, Community Acceptance, last two bullets — The Superfund Amendments and Reauthorization Act of 1986 requires that the remedial investigation reports also be available for public comment. Please include this information in the bullet. Additionally, the third bullet should state, "Public comment on the Proposed Plan **and the remedial investigation and feasibility studies** will be reviewed **and considered** during the preparation of the Record of Decision."
66. Page 16, text inset "Rationale for ..." - The first sentence states why the Marine Corps prefers the alternative. State and community acceptance are included among their justifications. Since acceptance by the state and community is yet to be determined (as correctly stated in two previous places within the Proposed Plan), it is inappropriate to include them as a rationale for preferring this alternative. Please delete them from the sentence.
67. Page 17, first column, first paragraph, last sentence — The sentence refers to an IRP process that is shown on page 14. Please correct this to read, "... on page 17".
68. Page 17, second column, third full paragraph — Please ensure that this milestone will be achieved prior to publishing this Proposed Plan (i.e., "In January 1999, the Proposed Plan for soil cleanup at OU-3 Sites 8, 11, and 12 was released for public comment.").
69. Page 17, "What Happens ...", second paragraph, fourth sentence — To avoid confusion, substitute the word "and" with the word "or". The sentence would read, "All comments received in writing **or verbally** provided to the court reporter ...".

Mr. Tayseer Mahmoud

January 21, 1999

Page 11

70. Page 19, "Where to Get More Information" — As stated in earlier documents, please correct the title for Ms. Marsha Mingay. The correct title is "Public Participation Specialist".