

CLEAN

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NAVAL AIR STATION MOFFETT FIELD
MOUNTAIN VIEW, CALIFORNIA

SITE 12 FIRE FIGHTING TRAINING AREA
DRAFT ACTION MEMORANDUM

NAVY RESPONSE TO EPA AND DHS COMMENTS

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84

TABLE OF CONTENTS

<u>Section</u>		<u>Page</u>
1.0	INTRODUCTION	1
2.0	INCORPORATION OF EPA COMMENTS	1
3.0	INCORPORATION OF DHS COMMENTS	12

1.0 INTRODUCTION

PRC Environmental Management, Inc., (PRC) and James M. Montgomery, Consulting Engineers, Inc., (JMM) received Contract Task Order (CTO) No. 0030 from the Navy's Western Division, Naval Facilities Engineering Command (NAVFACENCOM), under Contract No. N62474-88-D-5086. CTO 0030 calls for PRC and JMM to perform several tasks at NAS Moffett Field, including designing and implementing source control measures at Site 12.

In June 1990, the Draft Action Memorandum for the Site 12 Fire Fighting Training Area was submitted to regulatory agencies for review. On August 1, 1990, NAVFACENCOM received comments from the U.S. Environmental Protection Agency (EPA). On August 8, 1990, NAVFACENCOM received comments from the California Department of Health Services (DHS). This document provides responses to the agency comments and describes how the comments were incorporated into the Action Memorandum.

2.0 INCORPORATION OF EPA COMMENTS

Incorporation of EPA's comments into the Site 12 Action Memorandum is described below. The comment numbers correspond to those provided to NAVFACENCOM by EPA.

GENERAL COMMENTS

General Comment 1

Appendix A: An explanation why only three VOC compounds (2-Butanone, Acetone, and Methylene Chloride) are presented in Appendix A. Are these the only VOC compounds analyzed in previous investigation? All existing data for Site 12 reviewed for the preparation of this document should be presented in Appendix A or as Tables in the text. Also, Appendix A contains an ARAR column. This column should include MCLs, were available, for the compounds listed in each table.

Navy Response

The three compounds (2-butanone, acetone, and methylene chloride) are not the only VOCs presented in Appendix A, rather, Appendix A includes only VOCs detected by IT (even if associated with method blank contamination or below detection limits). Only VOCs present in each sample are reported for that sample. All existing data for Site 12 reviewed for the preparation of this document are presented in Appendix A or in the main body of the report.

The ARAR column from these tables has been removed because it did not provide adequate space to list all ARARs and TBCs. ARARs and TBCs are discussed in the text.

General Comment 2

Existing Data: The report states that existing data on Site 12 was used to determine contaminants of concern and the recommended removal action for Site 12. However, this data does not characterize the vertical or lateral extent of contamination, nor does it characterize the most likely areas of contamination. No Sampling has been performed in the burn pit, soil

samples around the pit were collected at shallow depths of five feet, and no surface soil samples were collected.

This data is insufficient to adequately determine contaminants of concern. The selected removal action, "No Action", is an inappropriate alternative due to the gaps in existing Site 12 data.

It is recommended that the data being generated from the removal action field investigation at Site 12, be used to determine contaminants of concern as well as the preferred removal action. The text in this report should be changed to reflect the above.

Navy Response

One of the underlying rudiments of the Draft Site 12 AM is that the site was not adequately characterized for an EE/CA based on the results of the Phase I RI. Further field work was planned, and is now accomplished. This was stated early and often in the draft AM. The results of the current field work have been incorporated in the text of the final AM. Contaminants of concern do need to be addressed in the AM and not after removal action field investigations, because remedial alternatives need to be developed and screened based on contaminants or groups of contaminants, prior to the removal action.

General Comment 3

Dioxin: The removal action field investigation at Site 12 should include Dioxin analysis for soil samples.

Navy Response

Dioxin sampling and analysis was not performed during the current JMM field investigation. We suggest collecting two surface soil samples from the burn pit for dioxin analyses. This field activity would be coordinated with the IS 8 and 9 field investigation.

SPECIFIC COMMENTS

Specific Comment 1

Page 1, Paragraph 2, Sentence 1: The text should indicate that this report is a Draft Action Memorandum.

Navy Response

Point is accepted. The Action Memorandum is now final, however.

Specific Comment 2

Page 5, Paragraph 3: This paragraph should define source control and describe the purpose for performing such an activity at Site 12.

Navy Response

The following text has been added to the paragraph to clarify the scope of "source control": "Source control activities are intended to prevent continued or future groundwater contamination by known or suspected point sources located within the boundaries of NAS Moffett Field. These activities do not include remediation of the regional groundwater plume, which will be administered under a base-wide remedial program."

Specific Comment 3

Page 6, Paragraph 3, Last Sentence: The location of the subsurface feedline and its integrity should be determined during the field investigation for this removal action. A statement should address this determination in Section 2.6.1 of this report.

Navy Response

The description of a subsurface feedline was based on previous reports. Interviews with base personnel indicated that only an aboveground, flexible

feedline was used. This feedline was stored coiled near the aboveground fuel tank, except just prior to fire fighting exercises. Neither the geophysical survey nor the five-foot deep trench (TR 12-02) indicated the presence of a subsurface line. To the best of our knowledge, such a line never existed. The text has been changed to reflect this.

Specific Comment 4

Page 6, Paragraph 5, Sentence 2: The catch basin should be identified on Figure 3.

Navy Response

The description of the catch basin was based on previous reports. IT's Characterization Report (August 1990) does not indicate its presence and evidence of the basin was not found during the current field investigations by JMM. To the best of our knowledge, a catch basin never existed. The text has been changed to reflect this.

Specific Comment 5

Page 10, Paragraph 3, Sentence 3: The drainage depression and area of runoff should be shown on Figure 3.

Navy Response

Figure 3 has been revised to show the drainage depression.

Specific Comment 6

Page 11, Paragraph 2, Sentence 1: The depth to, and thickness of, the various aquifers and confining layers, if known, should be described in this paragraph.

Navy Response

Text has been added to describe the depth to, and thickness of, the various aquifers. Each of the aquifer zones in the vicinity of Site 12, are probably thinner than described in the text because of its proximity to the San Francisco Bay.

Specific Comment 7

Page 12, Paragraph 1, Sentence 1: Transect lines should be shown on a separate figure, which should follow Page 13.

Navy Response

A new figure has been added which shows the locations of the transect lines.

Specific Comment 8

Page 13, Paragraph 1, Sentence 3: This paragraph or a table should state VOC ambient concentrations for soil gas at Site 12. Also, on page 13, second paragraph, last sentence, the text indicates that the head data is from March 1987, while the figure reports March 1989.

Navy Response

The correct date was April 1987. The figure has been revised based on the results of the JMM field work (July 1990).

Specific Comment 9

Page 13, Paragraph 3: According to Appendix A, 2-Butanone was detected above reportable detection limits and the compound was also found in the trip blanks in borings SB12-6 and SB12-7. This sentence should be added to paragraph 3.

Navy Response

The information concerning 2-butanone (methyl ethyl ketone) has been added.

- **Chromium.** Seven samples were above the baseline of 76.5 mg/kg, with a maximum value of 84.3 mg/kg.
- **Cobalt.** Nine samples were above the baseline of 18.6 mg/kg, with a maximum value of 23.3 mg/kg.
- **Copper.** Twelve samples were above the baseline of 56.7 mg/kg, with a maximum value for all but two samples of 88.4 mg/kg. Copper was elevated in two samples-SB 12-2 (3 ft., split-6,010 mg/kg) and SB 12-12 (5 ft.-11,800) These values may be an artifact of sampling and analysis.
- **Lead.** One sample was above the Moffett baseline of 28.3 mg/kg, with a value of 47.1 mg/kg. This value is within the baseline ranges for the Hetch-Hetchy and MV-18.
- **Nickel.** Two samples were above the baseline of 88.5 mg/kg, with a maximum value of 89.6 mg/kg.
- **Silver.** One sample was above the Moffett baseline of 2.4 mg/kg, with a value of 118 mg/kg. This single occurrence of silver cannot be explained.
- **Vanadium.** Two samples were above the baseline of 78.2 mg/kg, with a maximum value of 91.8 mg/kg.
- **Zinc.** Three samples were above the baseline of 104.1 mg/kg; one sample had a value of 115 mg/kg. Zinc was elevated in the same two samples that copper was-SB 12-2 (3 ft., split-2,590 mg/kg) and SB 12-12 (5 ft.-4,880) These values may be an artifact of sampling and analysis (e.g, they may represent shavings from the brass (copper-zinc alloy) sleeve lining the split spoons or chips of brass from equipment usage at the site.)

IT Corp's (1990b) conclusion is that with the possible exceptions of copper, zinc, aluminum, and silver, elemental concentrations are not suggestive of contamination."

Specific Comment 14

Page 16, Paragraph 2, Sentence 6: The high concentration of metals found in SB-12-2 and SB-12-12 may not be artifacts of sampling or analysis but localized hot spots.

Navy Response

Text has been added to suggest that the high concentrations of metals may be the result of localized hot spots as well as an artifact of sampling and analysis.

Specific Comment 15

Page 16, Paragraph 2, Sentence 7: Due to the unknown vertical and lateral extent of potential contamination at Site 12 (i.e., no analytical data on the pit, the shallow depth of soil sampling, and no analytical data for surface soil) soil samples collected in the removal action field investigation should be sampled for all metals not just copper and zinc. The text needs to be revised.

Navy Response

The sentence has been modified to more clearly state its original meaning: that all CLP TAL metals will be analyzed.

Specific Comment 16 **Page 16, Paragraph 2, Sentence 1: Although PCBs and Tetraethyl lead were not detected in samples collected, these compounds were not consistently analyzed at 1, 3, and 5 feet for each boring presented in Appendix A.**

Navy Response The sentence has been modified to reflect the fact that IT did not analyze every soil sample for tetraethyl lead and PCBs.

Specific Comment 17 **Page 16, Paragraph 2, Sentence 2: What is the significance of 1 mg/Kg?**

Navy Response One mg/kg is an arbitrary, but convenient reference value for comparing the sample results with. It is not an ARAR, but an upper bound of currently measured values. "Above detection limits" has been added to revise the sentence to more accurately reflect the data.

Specific Comment 18 **Page 16, Paragraph 4, Sentence 6: The sump should be located on figures 8 and 9.**

Navy Response The sump has been added to Figures 8 and 9.

Specific Comment 19 **Figure 8 and 9: The basis for establishing the extent of contamination should be discussed in more detail in the text. How does MW12-3(A) "define" the limit of contamination, since it contains significant levels of TPH.**

Navy Response The following sentence replaces the sentence which described W-3(A) and SB 12-9 as "defining" the longitudinal extent of contamination: "W-3(A) and SB 12-9 represent the minimum longitudinal extent of estimated contaminated area...".

Specific Comment 20 **Page 21, Paragraph 1: Even though blank contamination existed this sentence should state that methylene chloride concentrations were detected above quantification limits listed in Appendix A.**

A statement regarding analytical results of metals should be added to this paragraph.

In addition, a statement is needed clarifying the presence of unknown BNAs in all three wells, not just the upgradient wells.

Navy Response The following phrase was added to first sentence: "except 2-butanone, methylene chloride, and acetone in samples that were associated with blank contamination."

A statement regarding analytical results of the metals was added: "IT Corp. (1990) developed estimates of background mineral content of groundwater in the NAS Moffett Field Area (Table 3). One range is from the Coyote Creek Hydrologic Area in the Santa Clara Hydrologic Unit and the other is from well W10-6(C) at NAS Moffett Field, which is a C-aquifer well, not within the regional contaminant plume. The elements detected in groundwater were generally within these background ranges. Five elements which are common constituents of sea water: calcium, iron, manganese, magnesium and antimony were consistently detected. These may be attributed to sea water intrusion which occurs to a greater extent in the A-aquifer. Site 12 is also much closer to San Francisco Bay than is

well W10-6(C). The ranges found at Site 12 were similar to those found at nearby Site 9 (IT, 1990)."

The second and third sentences were modified to more clearly state that unknown BNAs were found in all three wells.

Specific Comment 21

Page 21, Paragraph 2, Last Sentence: This sentence is vague and should be changed to state that BNAs, specifically methylene chloride were detected in the groundwater at concentrations above the quantification limits.

Navy Response

The following sentence replaces the one in question: "The only organic contaminant reported above detection limits in groundwater was methylene chloride, and only in samples associated with method blank contamination."

Specific Comment 22

Page 21, Paragraph 3, Sentence 1: This statement is not supported by any data presented in the document. Due to the presence of TPH at elevated levels in the soil there is a potential to impact groundwater. Performance of a vadose flux model on the site would assist in determining the potential migration of contaminants. This would provide a qualitative assessment of the potential environmental impact. This sentence should be revised. The method for determining the average concentration (800 mg/Ks) of the soil, and the data points used to compute that average, should be discussed.

Navy Response

This sentence has been revised based on data from the JMM field work.

Specific Comment 23

Page 21, Paragraph 3, Sentence 2: Methylene chloride was detected above its detection limit in the groundwater at Site 12. Although this compound may be a laboratory contaminant, that does not mean that no compounds were detected in the groundwater. This sentence should be rewritten to reflect the above.

Navy Response

The following sentences replace the one in question: "The only organic contaminant reported above detection limits in groundwater at Site 12 was methylene chloride, and only in samples associated with method blank contamination. Concentrations of minerals appear to be within ranges associated with background levels when the effect of sea water intrusion is accounted for."

Specific Comment 24

Page 22, Paragraph 1, Sentence 1: The report cites no data, such as data generated from a potential receptor survey or flux modeling, which would provide a qualitative assessment of the exposure potential of Site 12. The sentence needs to be rephrased to state the potential exposure for Site 12 contaminants is unknown due to lack of exposure data (i.e., surface soil concentrations).

Navy Response

The following sentence has been added: "However, no surface soil data, less than 1 foot) exist currently, to fully validate these two suppositions".

Specific Comment 25

Page 22, Paragraph 1, Sentence 2: Airborne exposure pathways may be important if contaminants exist in the surface soil. No surface soil data is presented in the report. If no surface soil data is available then it is unknown whether the air is an exposure pathway at Site 12. This sentence should be revised.

Navy Response	See Navy response to specific comment 24.
Specific Comment 26	Page 22, Paragraph 2, Sentence 2.
Navy Response	See Navy response to specific comment 24.
Specific Comment 27	Page 22, Paragraph 2, Last Sentence: How will a "no further action" alternative expedite the remediation of the area wide VOC groundwater plume.
Navy Response	The sentence has been revised.
Specific Comment 28	Page 22, Paragraph 4, Sentence 1: Sentence 1 contains assumptions on exposure and extent of contaminants which are based on existing data that do not sufficiently characterize Site 12. For example, soil and groundwater of the pit at Site 12 have never been sampled, this is the most likely area for soil and groundwater contamination. Sentence 1 needs to be revised.
Navy Response	The sentence has been revised. In addition, the current investigation confirms that the major area of contamination is around the aboveground fuel storage tank, and that the burn pit has only minor concentrations of TPH.
Specific Comment 29	Page 22, Paragraph 4, Last Sentence: This sentence is confusing. This Draft AM is addressing source control (i.e., removal actions). The no action alternative is normally used for comparative purposes only in removal alternative assessments. It is unclear why an assessment is being performed if no action is warranted. This sentence needs further clarification. Data from the ongoing field investigation may indicate removal actions are warranted. This paragraph should be revised.
Navy Response	The paragraph has been revised.
Specific Comment 30	Page 23, Paragraph 2, Sentence 5: During this field effort will surface soil samples be collected and analyzed?
Navy Response	Surface soil samples were not collected during the JMM field work. We suggest that two surface samples be collected from the burn pit for dioxin analysis. It is anticipated that this will occur in coordination with the IS 8 and 9 field work.
Specific Comment 31	Page 25, Paragraph 2, Sentence 3: Will the deepest sample collected be a 11 feet or at the upper portion of the silty clay layer (10 feet). Clarification is needed.
Navy Response	The text has been modified to be more consistent. The underlying premise is that the top of the silty-clay layer would be identified in the field and is only approximately at 10 or 11 feet bgl.
Specific Comment 32	Page 25, Paragraph 1, Last Sentence: Soils samples should be analyzed for VOCs, BNAs, metals, TPH, PCBs, and dioxin. This sentence should include dioxin analysis.

Navy Response See navy response to specific comment 30.

Specific Comment 33 **Page 28, Paragraph 3: This report should not address contaminants of concern for the entire NAS Moffett Field. This paragraph should be deleted.**

Navy Response We do not agree that the paragraph should be deleted. This subsection introduces terms (e.g., Contaminants of Concern) and concepts that are used and expanded upon in subsequent subsections. The subsection heading has been changed from "Determination of Contaminants of Concern at NAS Moffett Field" to "Determination of Contaminants of Concern at Site 12".

Specific Comment 34 **Page 29, Paragraph 1, 2, and 3:**

Navy Response See Navy response to specific comment 33.

Specific Comment 35 **Page 29, Section 3.4.1: It seems inappropriate to identify contaminants of concern prior to adequate site characterization. Especially, since no soil samples have been collected from the burn pit. Analysis of these samples may detect additional contaminants, for example dioxin.**

Based on existing data TPH is the only compound, which has been sufficiently characterized to perform a technology assessment. The presence and extent of the remaining compounds detected at Site 12 (BNAs, VOCs, and metals) need further characterization prior to determining if they are contaminants of concern. Also, background levels for naturally occurring compounds have not been established.

If these compounds are found at levels above chemical specific ARARs or at levels which will adversely effect human health and the environment, they will need to be addressed in this action memorandum.

Contaminants of concern should be identified after data from the removal action field investigation is complete.

The section and the text on pages 30, 31, 32, 33, and the first two paragraphs of page 34 should be rewritten with text similar to the above paragraphs.

Navy Response See Navy response to general comment 2.

Specific Comment 36 **Page 36, Last Paragraph: The TPH soil standards, based on the recommendations of the South Bay Toxics Cleanup Division, are not ARARs, they are TBCs (To be Considered). A TBC is a non-promulgated advisory or guidance issued by the Federal or State government that are not legally binding and do not have the status of an ARAR.**

In some instances TBCs are considered with ARARs as part of a site risk assessment and may be used in determining the necessary level of cleanup for protection of human health and the environment.

The text in this paragraph and Table 2 should be changed to reflect the TBC designation for the guidelines of TPH in soil.

Specific Comment 41 **Page 41, Paragraph 3, Sentence 2: This report is for Site 12 not Site 14.**

Navy Response **This typographical mistake has been corrected.**

Specific Comment 42 **Page 47, Paragraph 6, Sentence 3 and 4: The text on page 25 state that samples collected during this investigation will be analyzed for metals, VOCs, and BNAs. Analysis should also include dioxin. The text needs to state if the on-going field investigation indicates elevated levels of any of the above compounds exist at Site 12 alternatives will have to be screened and the AM will have to be revised.**

Also the sentences refer to ARARs which is incorrect, these are TBCs. The text needs to be revised.

Navy Response **The text has been revised to reflect the result of the JMM field investigation.**

Specific Comment 43 **Page 48, Paragraph 1, Sentence 3: Existing data on the presence and extent of contaminants at Site 12 is insufficient to make such an assumption. This sentence should be removed.**

Navy Response **The JMM field investigation supports this statement.**

Specific Comment 44 **Page 48, Paragraph 3, Sentence 3: There is no soil ARAR of 100 mg/Kg for TPH, this is a TBC. The text needs to be changed.**

Navy Response **The text has been revised accordingly.**

Specific Comment 45 **Page 68, Section 8: The text on pages 68, 70, and paragraphs 1 and 2 on page 71 can be deleted and replaced with a reference. All this text has been presented in Section 2.**

Navy Response **The text has been revised accordingly.**

Specific Comment 46 **Page 71, Paragraph 3, Sentences 1 and 2: Exposure potential to Site 12 may be minimal because it is a restricted area; however, this is an assumption because of the following:**

- 1. No surface soil data is available for Site 12. This information would determine exposure potential of the site.**
- 2. No baseline risk assessment data is available to provide a qualitative assessment of the exposure potential.**

Both the above items are required for an adequate qualitative exposure assessment for Site 12. The text on page 71 should be revised to reflect the uncertainty of potential exposure at Site 12.

Navy Response **The text has been deleted.**

Specific Comment 47 **Page 71, Paragraph 4: Agree with the statements in this paragraph. In addition, existing data on Site 12 is insufficient to use as a basis for selecting a removal action. The paragraph should include this last statement.**

Navy Response The text has been revised to reflect the result of the JMM field investigation.

Specific Comment 48 **Page 73, Paragraph 3: The report states that TPH remaining in the soil has little potential for environmental or public health impacts. This is an assumption based on existing data which do not adequately characterize contamination in the soil or groundwater at Site 12. The paragraph needs to be revised. The report also states that the volume of contaminated soil is conservatively estimated at 685 cubic yards. There is no data to indicate where the limits of contamination are, so it is unknown if this estimate is conservative. The text should be revised.**

Navy Response The text has been revised to reflect the result of the JMM field investigation.

Specific Comment 49 **Page 74, Paragraph 1, Last Sentence: The selection of this removal action is inappropriate due to the gaps in data of Site 12. In addition, the report fails to clearly state how the no action alternative meets the removal action objectives described on page 26. See also general comment 2.**

Navy Response The text has been revised to reflect the result of the JMM field investigation.

3.0 INCORPORATION OF DHS COMMENTS

Incorporation of DHS's comments into the Site 12 Action Memorandum is described below. The comment numbers correspond to those provided to NAVFACENCOM by DHS.

COMMENTS

Comment 1 **The Department of Health Services (DHS) has reviewed the Draft Action Memorandum for Site 12 and finds that your conclusion of a no action alternative is based on incomplete data. The Action Memorandum is premature based on the fact that the Phase I Characterization Report has not been considered and that additional field work is planned. The Action Memorandum should be submitted after all data has been collected and analyzed. If you have any questions regarding this letter, please contact me at (415) 540-3818.**

Navy Response See EPA General Comment 2.