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APPROVAL

OTHER

Govt Comment "Draft Technical Memorandum"

Y01 I-IV

ACTION REQUIRED

WORK AUTHORIZATION
(R. Ward)

TITLE: DTSC COMMENTS "DRAFT TECHNICAL MEMO" VOLUME I-IV, PHASE 1 RI

OTHER

AUTHOR: JOE ZARNOCH/DTSC

DATE: 08/31/93

CATEGORY: 3.4

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COMMENTS-(Full set to LRCM, RCM(s), LPjM, PjM, TR, MTPQC cover sheet to others noted). PM to receive full sets of Code 185 comments/top copy of all others.

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL

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245 West Broadway, Suite 350
Long Beach, CA 90802-4444



August 31, 1993

Commanding General
Attn: LCDR L. Serafini
Environmental Department, 1AU
Marine Corps Air Station
El Toro, California 92709-5010

Dear Sir:

PART TWO COMMENTS ON MARINE CORPS AIR STATION [MCAS] EL TORO, EL TORO, CALIFORNIA, INSTALLATION RESTORATION PROGRAM, PHASE I REMEDIAL INVESTIGATION, DRAFT TECHNICAL MEMORANDUM

The California Department of Toxic Substances Control (Department) has completed a second phase of the review of the subject *Draft Technical Memorandum (Technical Memorandum)*, Volumes I through IV, dated May 7, 1993. Based on a memorandum from CH2M Hill dated August 17, 1993, the MCAS El Toro Remedial Investigation (RI) sites have been grouped and prioritized for review during the Data Quality Objective (DQO) process. In order to provide comments in the order the sites are addressed, the Department's comments on Group 3 Sites (Sites 1, 3, 4, 5 & 17) appear below. The comments consist of three sections: I) General Comments, II) Site-Specific Comments, and III) DQO Issues for Phase II Investigations. Comments were prepared by: 1) Joe J. Zarnoch, Project Manager, and 2) Kathleen A. Considine, Associate Engineering Geologist, with concurrence from Stephen G. Belluomini, Senior Engineering Geologist. The DQO issues in Section III are provided for consideration in determining the scope of work for Phase II investigations.

It is understood that the *Technical Memorandum* will not be revised into a final version, however, the Department's comments stated herein should be addressed in the DQO process for Phase II investigations and applicable subsequent documents (e.g., the Phase II RI Workplan and/or the comprehensive RI Report).

I. GENERAL COMMENTS:

1. Based upon the information presented in the *Technical Memorandum*, the Department agrees that Sites 1, 3, 4, 5 and 17 are not likely sources of the volatile organic compound (VOC) plume.



II. SITE-SPECIFIC COMMENTS:

Site 1 - Explosive Ordnance Disposal (EOD) Range

1. Appendix B1.1 (Site Description) and Figure B1-1

The site description and Figure B1-1 should include the locations of the three current detonation pits.

2. Table B1-1

This table should be revised in applicable subsequent documents to indicate pesticide/PCB analyses for surface and near-surface soil samples within the EOD range.

Site 3 - Original Landfill

1. Appendix B3.1 (Site Description)

Aerial photographs apparently indicate two areas east of Aqua Chinon Wash that were excavated in 1952 and apparently another excavation was conducted during the construction of Building 746. This section of the report should provide a summary of the excavations, including the reasons for the excavations and a summary of the analytical results.

2. Appendix B3.3 (Field Investigation)

Section B3.1 (Site Description) states that other sampling locations were selected based on suspected areas where contamination was believed to be most probable. Yet Section B3.3 indicates the deep boring was relocated between the trenches that had been found during the geophysical survey. Information presented during the DQO process for Phase II investigations and applicable subsequent documents should include a figure with the sampling locations (e.g., Figure B3-1) and the locations of the six separate pits and trenches based on aerial photographs, geophysical surveys, etc.

3. Appendix B3.4.2 (Analytical Results)

Under "Volatile Organic Compounds (VOCs)", the comprehensive RI Report should indicate the concentrations of acetone detected in runoff sample 03_AC1 and methyl [sic] chloride detected in all three runoff samples.

4. Appendix B3.6.3.1 Volatile Organic Compounds (VOCs)

This section states that acetone was detected up to 17 ug/kg in vadose zone soils. Yet Section 4.3.2 (on page 4-6 under "VOCs - Soil") indicates acetone up to 78 ug/kg. Please make the necessary correction in applicable subsequent documents.

5. Appendix B3.6.3.3 (Pesticides, Polychlorinated Biphenyls (PCBs) and Herbicides)

In the text of the comprehensive RI Report, please provide the detected concentrations of MCPP in the 35- and 215-foot samples collected at 03_DBMW39.

6. Appendix B3.9 (Summary and Conclusions)

The Department strongly disagrees with the statement "In general, contamination at Site 3 is low...". Phase I sampling results do not necessarily justify such a conclusion. Please see Site 3 under DQO Issues for Phase II Investigations below.

Site 4 - Ferrocene Spill Area

1. Figure B4-1

In applicable subsequent documents, please include the location of the (former?) 500-gallon ferrocene tank.

2. Section 4.4.2 (Results and Conclusions)

This section should have included the results for TFH-gasoline (769 ug/L) and TFH-diesel (77.7 ug/L) detected in groundwater at 04_DBMW40.

3. Appendix B4.5.2.2 (Stratum 1: Stain Area)

In the comprehensive RI Report, please provide the detected concentrations of endosulfan I, 4,4'-DDD and 4,4'-DDT for the surface sample next to the deep boring; also provide the detected concentration of 4,4'-DDT at 04_SA2 at 4 feet. Please provide the concentrations (range) of acetone detected in "several" samples. Also, please note that detection of acetone is not indicated in Section 4.4.2 (Results and Conclusions).

4. Appendix B4.5.2.3 (Stratum 2: Drainage Ditch)

The last complete sentence on page B4-10 does not make sense. According to Table B4-2, TFH-diesel was detected at the surface of 04_DD1 at a value of 16,400 mg/kg.

Site 5 - Perimeter Road Landfill

1. Section 4.5.2 (Results and Conclusions) and Appendix B5.6.3 (Analytical Results)

Section 4.5.2 indicates that toluene was the only VOC detected in soil, yet Appendix B5.6.3 indicates that the VOC detected was acetone.

2. Appendices B5.3 (Field Investigation) and B5.3.3 (Vadose Zone Soils (Soil Borings))

Appendix B5.3 indicates that 17 vadose zone soil samples were collected, yet Appendix B5.3.3 indicates that the number was 20.

Site 17 - Communication Station Landfill

1. Figure B17-2

Figure B17-2 does not indicate the groundwater level elevation (water table).

III. DOO ISSUES FOR PHASE II INVESTIGATIONS:

Site 1 - Explosive Ordnance Disposal Range

1. In addition to the more standard analytical suites, any additional soil characterization should include analyses for pH, nitrated toluenes, phosphorous compounds, and radionuclides (the latter due to purportedly unsubstantiated reports that a portion of the site was used to dispose of radioactive material). What reports or records indicate this site may have been used for the disposal of low-level radioactive material?
2. Where are the two disposal areas described in the *Initial Assessment Study of Marine Corps Air Station, El Toro, California (IAS)* [dated May 1986]? The two disposal areas were located on either side of the main

north-south unpaved roadway running through the EOD range. Both areas were apparently small, no more than 100-feet in diameter.

3. The limited Phase I soil sample locations were assigned randomly and not in areas (based on aerial photographs), including the FS Smoke Disposal Area, that have a more likely probability of exhibiting contamination. The Phase I shallow soil samples did not characterize soils actually within former trench areas.

Site 3 - Original Landfill (Note: wastes were burned)

1. What are the locations of the buried waste that were uncovered during the construction of the Flight Simulator Building (Building 746) and a nearby parking/office area? What remediation was performed on these areas? Were these wastes excavated as indicated in figures of the IAS?

According to a memorandum entitled "Redefinition of Operable Units (OUs), Assignment of Sites on Basis of Phase I Data" (CH2M Hill, dated July 7, 1993), Solid Waste Management Units/Areas of Concern (SWMUs/AOCs) 194, the former incinerator site, and 300, the solvent spill area, will be included in Site 3. What is the location of the trench(es) in the area of SWMU/AOC 300 where digging was halted for a water supply line in October 1992 due to the presence of a strong petroleum odor?

The IAS indicates that a number of disposal pits may have been located over a wide area.

2. One dioxin, octachlorodibenzo-p-dioxin, was detected (1 ng/g) in a surface soil sample collected at Site 3. This was apparently the only dioxin sample collected at the site; it is unclear whether the 10-foot depth dioxin/furan sample, as specified in the *Draft Final Sampling and Analysis Plan Amendment (SAP Amendment)*, dated August 26, 1992, was actually collected and analyzed at this location. According to Table B3-1 in the *Technical Memorandum*, a 20-foot depth sample was analyzed for dioxins/furans; this sample may have been targeted too deep. Additional dioxin/furan characterization is necessary within Site 3.
3. Did disposal of radioactive material occur at this

landfill that would account for the elevated levels of gross alpha activity in groundwater?

4. Phase I soil sampling, within the site boundary, was limited to: 1) surficial samples, and 2) a single deep boring located between trench or pit disposal areas.

The geophysical survey findings apparently indicate three former disposal pits in the northern portion of the site (west of Aqua Chinon Wash). The 1963 aerial photographs apparently indicate two possible former trenches in the southwestern portion of the site. The original information in the *Draft Final Sampling and Analysis Plan (SAP)*, dated February 28, 1991, indicated three trenches, two 1-acre disposal pits and a 4-acre disposal pit located in a slightly different configuration.

Based on Plate 5 of the *SAP Amendment*, the surface soil samples located west of Aqua Chinon Wash were not within trench or pit disposal areas. The two surface samples (east of Aqua Chinon Wash) were apparently located in areas excavated in 1952. Were the surface samples actually taken from fill material?

5. The *SAP Amendment* states that piles of debris and mounded material existed north of the Motor Pool area and that heavy staining was also observed in the Motor Pool area west of the landfill area.
6. The *SAP Amendment* states that the geophysical survey results indicated the presence of three main potential areas of buried waste west of Aqua Chinon Wash and one smaller area east of the wash. The smaller area east of the wash was not indicated in Plate 5 of the *SAP Amendment*. Was this smaller area investigated in Phase I?
7. Was abandoned well 24-4247 (east of Building 385) properly decommissioned?
8. This site does not appear to be a source of the VOC plume. However, it is upgradient of the northern benzene plume and fuels were detected in the soils. As is the case with many of the sites, few deep soil samples have been collected and analyzed. More soil sampling at depth may be warranted to determine if Site 3 is a source of fuel hydrocarbon contamination of groundwater.

9. The need for additional characterization at this site should be evaluated considering the use of institutional controls (e.g., deed restrictions), closure procedures, and groundwater monitoring strategies. The need for additional groundwater data at greater depths should be considered.

Site 4 - Ferrocene Spill Area

1. Former excavation areas at this site should be identified.
2. This site is not considered to contribute to the regional groundwater contamination, but it is located within the northern benzene plume; benzene was detected at 3 ug/L in upgradient well 04_UGMW63. The water table may have been above the screen interval of well 04_UGMW63 (see Figure B4-2) during sampling and apparently the pump is positioned near the bottom of the screen; higher concentrations of benzene at the water table may be present.

It may be possible that well 04_UGMW63, albeit just upgradient of Tank Farm 5, is being impacted by releases from Tank Farm 5. However, well 04_UGMW63 is also downgradient from Site 3. The well downgradient from Tank Farm 5 screened in the shallow zone (18_BGMW01E) exhibited 270 ppb benzene.

TFH-gasoline and TFH-diesel were also detected in groundwater at the site. Wastes containing fuel hydrocarbons are documented as being disposed or handled in this area (TFH-diesel was detected in a surface soil sample at 16,400 mg/kg). Only one deep boring was completed at this site, so information on the vadose zone below 4 feet is scarce. The location of the former 500-gallon ferrocene tank should be identified.

As discussed previously in Part One of the Department's comments, if the tank farms are considered potential sources for the benzene plumes, then these sources should be identified as part of the RI.

Site 5 - Perimeter Road Landfill (Note: wastes were burned)

1. It is unclear if the *Technical Memorandum* reports the dioxin/furan results for the surface and 10-foot depth soil samples as specified by the *SAP Amendment*.

According to Table B5-1 in the *Technical Memorandum*, the 10-foot depth dioxin/furan sample was not collected and analyzed.

2. Did disposal of radioactive material occur at this landfill that would account for the elevated levels of gross alpha and beta activity in groundwater?
3. The *IAS* indicates that supplies with an expired shelf life were disposed of at Site 5 from 1955 through the early 1970s; some of these supplies/wastes may have included liquid chemicals.
4. Based on the latest aerial photograph information, the following areas identified in the *SAP Amendment*, but excluded from investigation in Phase I, should be reviewed:
 - a) a large tract of disturbed ground located southwest of the landfill observed in a 1980 aerial photograph;
 - b) disturbed ground and a possible impoundment filled with an unidentified liquid located northwest of the landfill;
 - c) a possible impoundment, located west of the impoundment described in b above, observed in 1986; and
 - d) a dark area northwest of the landfill observed in a 1991 aerial photograph.
5. Are the two areas south of the landfill (as indicated in Figure B5-1) the two smaller pockets of buried wastes that, according to the *SAP Amendment*, exist south of the access road?

The *IAS* indicates that this site actually consisted of three separate trenches with a combined length of 1,200 feet. Apparently the site boundary indicated in Figure B5-1 encompasses the three trenches.

6. Soil sampling was limited to: 1) surface samples, some of which were located within the actual landfill boundary, and 2) vadose zone samples located outside of the actual landfill boundary.
7. The need for additional characterization at this site

should be evaluated considering the use of institutional controls (e.g., deed restrictions), closure procedures, and groundwater monitoring strategies.

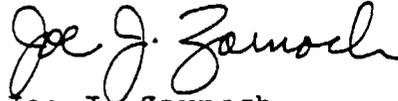
Site 17 - Communication Station Landfill

1. Figure 8-17 of the IAS indicates that the Communication Station Landfill is shaped like an "L" with the lower portion extending to the east. In the *Technical Memorandum* (see Figure B17-1), the lower portion of the landfill is depicted as extending to the west.
2. Phase I soil samples were concentrated near the lower portion of the landfill. Only two surface/near surface soil samples were located in other portions of the landfill and neither of the two samples were located in fill areas identified through aerial photographs. Moreover, the surface/near surface soil samples at the landfill were likely located in fill cut from a nearby hill to provide fly zone clearance.
3. Only one of the three proposed downgradient wells were installed. Additional downgradient monitoring control is needed.
4. The Phase I groundwater sample was not analyzed for gross alpha and beta activity.
5. TFH-gasoline, TFH-diesel and TRPH results for boring 17_SA2 generally indicate an increasing concentration with depth.
6. Metal results for 17_LF3 indicate chromium at 297 ppm at 0-depth but only 7.5 ppm chromium in its duplicate.
7. The need for additional characterization at this site should be evaluated considering the use of institutional controls (e.g., deed restrictions), closure procedures, and groundwater monitoring strategies.

LCDR L. Serafini
August 31, 1993
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If you have any questions concerning these comments, please contact me at (310) 590-4878.

Sincerely,



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August 31, 1993
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