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

AUTHOR: JOE ZARNOCH/DTSC

DATE: 09/13/93

CATEGORY: 3.4

MODs, Stop Work Orders- (RCMs, CM, CA, LPjM, PjM, PCM, CSE, 280 PjM)

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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Date:	No. of Pages: (including cover) 13
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FROM: Joe Zarnoch	CONTACT NO.: (310) 590-4878

SUBJECT: Final comments on Group 5 Sites -
MCAS EI Tors

COMMENTS:

John & Chuck -

As from draft version marked
in left margin.

Joe Z

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DEPARTMENT OF TOXIC SUBSTANCES CONTROL



Region 4
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September 13, 1993

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

Dear Sir:

PART FOUR 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 fourth 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 5 Sites (Sites 11, 13, 14, 15, 19 & 20) 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 11, 13, 15, 19 and 20 are not likely sources of the chlorinated volatile organic compound (VOC) plume.



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The Department concludes that Site 13 and/or Tank Farm 2 or another upgradient site (e.g., Site 16) are potential sources for the southern benzene/fuel hydrocarbon plume present at MCAS El Toro.

Contrary to what is stated in the *Technical Memorandum*, the Department believes that Site 14 could be a potential contributor to the carbon tetrachloride detected in groundwater.

The Department believes that Site 15 may be a source of fuel hydrocarbons (diesel) detected in groundwater.

2. The Department is aware that authors of the *Technical Memorandum* may not have had discretionary control of the document format. However, the Department recommends that redundancies, present in the *Technical Memorandum*, be eliminated in applicable subsequent documents. With the exception of an executive summary, specific subjects should be addressed in detail in one, and only one, section of the document; repetition of information should be avoided.
3. All buildings and streets indicated in specific RI site maps should be identified by number/name.

II. SITE-SPECIFIC COMMENTS

Site 13 - Oil Change Area

1. Appendix B13.1 (Site Description)

In applicable subsequent documents, please provide disposal details for the previous oily dirt pile at the north end of the site.

2. Appendix B13.5.2.2 (Stratum 1: Southeast of the Tank Farm)

This section, as well as following sections for Site 13, should indicate the depth of the soil samples.

This section states "TRPH levels in Stratum 1 are below 1,000 mg/kg. However, these samples are located at the periphery of the stain." Please explain this statement in applicable subsequent documents. According to Plate 14 of the *Draft Final Sampling and Analysis Plan Amendment (SAP Amendment)*, dated August 26, 1992, one sample is located within a stain observed in a 1970

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aerial photograph, two are located within a stain observed in a 1965 aerial photograph, and only one (18_SA1) is located on the periphery of a stain (also observed in a 1970 aerial photograph). However, in contrast to the perhaps more reliable aerial photograph information, Figure 8-13 of the *Initial Assessment Study of Marine Corps Air Station, El Toro, California (IAS)*, dated May 1986, indicates that the area, including the oily dirt pile, is more to the northeast.

The *Technical Memorandum* should have indicated the reason for the elevated detection limits (20,000 ppb) for polycyclic aromatic hydrocarbons (PAHs) in the surface soil sample at 13_SA2.

The *Technical Memorandum* should have indicated the reason for the elevated detection limit (276 ppm) for arsenic in the 2-foot soil sample at 13_SA3.

3. Appendix B13.6.3 (Soil Vapor Headspace Concentrations)

It does not appear, as indicated, that the organic vapor analysis (OVA) headspace contours are superimposed on the geologic cross section in Figure B13-2.

4. Appendix B13.7.2 (Analytical Results)

Under "Metals and Cyanide", the *Technical Memorandum* states that mercury was detected in the downgradient well sample at 160 ppb, however it was also detected in the laboratory blank. What was the concentration detected in the laboratory blank? The federal and state Maximum Contaminant Level (MCL) is 2 ppb.

5. Table B13-7

The Maximum Contaminant Level (MCL) for aluminum is listed as 50 ppb, however, the correct value is apparently 1,000 ppb.

Site 14 - Battery Acid Disposal Area

1. Appendices B14.5.2.2 (Stratum 1: Battery Acid and Paint Waste Disposal Area) and B14.5.2.3 (Drainage Ditch)

These sections report relatively significant detected constituent concentrations but do not identify the sample locations and depths; this becomes frustrating

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for the reviewer who then has to scan tables for the pertinent information.

2. Appendix B14.9 (Conclusions)

The Department strongly disagrees with the statement "There is no [*underline added for emphasis*] indication that Site 14 is the source of this VOC [carbon tetrachloride] detected in groundwater."

Evidence that indicates that Site 14 could be a potential contributor to the carbon tetrachloride detected in groundwater includes:

- a) semi-upgradient wells at Site 13 did not exhibit the presence of carbon tetrachloride, at least not above regulatory levels;
- b) the concentration of carbon tetrachloride is similar or slightly decreased in semi-downgradient well 18_DW135; and
- b) the *Technical Memorandum* in Section B14.2 (Suspected Waste Types and Contaminants) states that methylene chloride and other solvents associated with paints are potential contaminants. The disposal of paint wastes in the area of Site 14 indicates that painting occurred in the vicinity and likely degreasing activities occurred prior to painting. Solvents were likely used at Building 245 at Site 14 since it was the heavy duty maintenance shop. Carbon tetrachloride would be a potential contaminant at Site 14.

Site 19 - Aircraft Expeditionary Refueling (ACER) Site

1. Appendix B19.1 (Site Description)

A comparable section in applicable subsequent documents should describe the fuel farm (101?) located at this site. Indicate the number of underground storage tanks (USTs) and the contents of each (both current as well as historic contents). Indicate if the tanks have been tested, and if so, in what year(s) and what were the results? Indicate the location of the fuel farm (and individual tanks) on the site map. The site map should also identify paved and unpaved areas.

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The location of the 15,000 gallon spill of JP-5 should be identified.

The site description should include the results of the RCRA Facility Assessment (RFA) investigation for Solid Waste Management Unit/Area of Concern (SWMU/AOC) 20. A 5-foot depth sample of boring H2 had a TFH-diesel result of 463 ppm, but deeper samples were not collected. The locations of the RFA borings should be included in the site map.

Site 20 - Hobby Shop

1. Figure B20-1

The locations of the 600-gallon waste oil tank and the three oil/water separators should be indicated.

2. Appendix B20.3.3 (Vadose Zone Soils)

The monitoring well borings are incorrectly coded for Site 19.

3. Appendix B20.5.2.3 (Stratum 2: South Drainage)

The *Technical Memorandum* should have indicated the reason for the elevated detection limits (up to 22,000 ppb) for PAHs in the surface soil samples at 20_DD5 and 20_DD6. The interference may have been due to the presence of petroleum hydrocarbons; this section did not report the TRPH detected in the surface soil samples at 20_DD5 (7,046 ppm) and 20_DD6 (84,590 ppm). The statement "SVOCs were found at only one station, and only bis(2-ethylhexyl)phthalate was detected above CRDL" may not be entirely accurate in assessing the presence or absence of PAHs.

4. Appendix B20.9 (Summary and Conclusions)

The third paragraph does not accurately describe the TRPH contamination at Stratum 2.

III. DOO ISSUES FOR PHASE II INVESTIGATIONS

Site 11 - Transformer Storage Area

1. Where is the possible stained area located at the center of the site as seen in a 1965 aerial photograph

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(see the *SAP Amendment*)? What evidence indicates that transformers or other units containing PCBs were not stored in other portions of the fenced dirt lot?

2. PCB field screening techniques may be useful in delineating contaminated areas at Site 11.
3. The Department believes the scope of work at Site 11 should possibly be expanded (and/or Site 22 expanded) based on the following information found in the *RCRA Facility Assessment Draft Preliminary Review/Visual Site Inspection Report (RFA-PR/VSI)*, dated July 3, 1991.
 - a) On September 29, 1982, approximately 50 gallons of PCB contaminated oil spilled when a transformer fell off a truck between Buildings 369 and 335. Did the PCB Spill Team effectively clean-up the area? Was confirmation sampling performed? Did other PCB spills occur in the vicinity of Site 11?
 - b) On April 18, 1978, approximately 2,700 to 4,000 gallons of JP-5 was released from a ruptured fuel bladder east of Building 369 at Site 11. The fuel flowed across a fuel truck unloading area, across a parking lot on the east side of Building 369 and into the storm drain located at the southeast corner of Building 369. The fuel on the parking lot was washed into the storm drain that leads to Bee Canyon Wash.
 - c) On March 23, 1979, an unspecified volume of JP-5 was released from a ruptured fuel bladder and in transferring fuel from one bladder to another, a valve was inadvertently left open resulting in an additional release of fuel. Fuel on the parking area next to Building 369 was washed into the storm drain leading to Bee Canyon Wash.
 - d) On April 13, 1979, approximately one to several thousand gallons of JP-5 spilled out of a TAFDS fuel bladder and "liquified" the asphalt in the parking lot by Building 369. The JP-5 also entered the storm drain at Building 369 and flowed into Bee Canyon Wash.

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Please note that elevated levels of TFH-gasoline and TFH-diesel were found in angle boring samples from Bee Canyon Wash.

Site 13 - Oil Change Area

1. The Drum Storage Area (RFA SWMU/AOC 67) located northeast of Building 242 and UST (RFA SWMU/AOC 217) and oil/water separator (RFA SWMU/AOC 218) located east of Building 242 should be evaluated for possible investigation in Phase II.
2. Apparently only one stained area in Stratum 2, identified in a 1965 aerial photograph, was sampled in Phase I.
3. A review of the Phase I results prompts a number of questions concerning Site 13.
 - a) The RFA-PR/VSI indicates that tank tests were conducted in 1990 for the two USTs evaluated at Tank Farm 2. Were tank tests conducted for the other USTs at Tank Farm 2? If so, in what year(s) and what were the results?
 - b) Historically, what were the contents of all of the USTs at Tank Farm 2? The RFA-PR/VSI indicates that, at least for the two USTs investigated during the RFA, the tank contents were waste oil. However, Section 4.13.1 (Background [for Site 13]) in the *Technical Memorandum* indicates that the USTs at Tank Farm 2 may have contained JP-5, in addition to waste oil. In applicable subsequent documents, please identify the UST-specific contents.
 - c) If the contents of the USTs at Tank Farm 2 were/are waste oil, would this likely result in a release of benzene detected in well 13_UGMW32 (at a concentration of 730 ppb (15 ppb based on not yet validated round two results))? The detection of benzene would more likely be attributed to JP-5, or more likely yet from JP-4 or aviation gas either at Tank Farm 2 or from an upgradient source (e.g., Site 16).
 - d) Could a release from Tank Farm 2 impact upgradient well 13_UGMW32 through preferential migration (e.g., a course grain channel) or is the benzene

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in this well due to another source (perhaps Site 16)? According to Figure B13-1 of the *Technical Memorandum*, well 13_UGMW32 is located approximately 100 feet upgradient of the nearest UST at Tank Farm 2. Please see Site 16 of the Department's Part Three Comments on the *Technical Memorandum*, dated September 1, 1993.

- e) Are the metals (aluminum, cadmium & manganese) detected in downgradient well 13_DGMW78 indicative of a release(s) from Tank Farm 2 and/or Site 13, given a depth to groundwater of approximately 130-140 feet below ground surface? Manganese, used in the manufacture of alloys (including of aluminum), was detected in all three wells at Site 13, but at approximately an eighteenfold concentration in downgradient well 13_DGMW78.
4. Site 13 is most likely not contributing to the regional chlorinated VOC plume. Wells at this site do contain benzene, xylene, ethylbenzene, toluene, gasoline and diesel. As stated previously, suspected sources of these contaminants are Tank Farm 2 or another upgradient location such as Site 16. The identification of a source(s) must be an objective in Phase II.

Site 14 - Battery Acid Disposal Area

1. Lead was found in surficial soils during Phase I above background levels at 14_DD4, 14_DD6, 14_GN2 and 14_GN5 at 161, 145, 415 and 923 ppm, respectively.
2. Analysis for soil pH should be considered in future characterizations.
3. The Department believes that Site 14 could be a potential contributor to the carbon tetrachloride detected in groundwater up to 19 ppb (up to 26 ppb based on not yet validated round two results); the round one result was apparently the highest detection for carbon tetrachloride on the Station. Soil gas samples collected during the Perimeter Investigation indicated concentrations of carbon tetrachloride (as well as TCE) above background in the vicinity of Site 14 (*MCAS El Toro Perimeter Investigation Interim Report*, April 1989).

Site 14 does have petroleum hydrocarbon contamination

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in soil; semi-downgradient well 18 DW350 with a screened interval of 310-350 feet below ground surface did exhibit 943 ppb TFH-diesel (430 ppb TFH-diesel based on not yet validated round two results).

Figures in Appendix A1 indicate an irrigation supply well (18 TIC055) near the cluster wells south of Site 14. Could this well, located in the carbon tetrachloride plume, provide a pathway for deeper migration of contaminants? Is this well currently in use? If so, for what purpose?

Site 15 - Suspended Fuel Tanks

1. The Drum Storage Area (RFA SWMU/AOC 31) located at Building 29 should be evaluated for possible investigation in Phase II.
2. A heavy duty maintenance shop was located in Building 31 at Site 15 prior to moving to Building 245 at Site 14 in 1977. The IAS states that waste oil was drained onto the ground behind Building 31 until 1983. The Department believes the scope of work at Site 15 should be expanded to include this area.

Applicable subsequent documents should discuss whether the three borings completed at SWMU/AOC 273 were located in the waste oil disposal area. While soil samples from the three borings were analyzed for TRPH and VOCs, analyses for TFH, semivolatile organic compounds, PCBs and metals were not performed.

3. Hydrocarbon interference resulted in high detection limits for PAHs in at least one sample (the *Technical Memorandum* should have noted this).
4. The upgradient shallow boring had an elevated concentration of TRPH (3,751 ppm) at the surface indicating possible oil contamination. The *SAP Amendment* states that a 1991 photograph indicated the presence of debris and stains north of Building 29. Was the upgradient boring located within the stain areas? Other than possible oil contamination, is there an explanation for the elevated TRPH level?
5. This site may be a source of fuel hydrocarbons; 3,370 ppb TFH-diesel was detected in Site 15 well 15_DBMW51 whereas 436 ppb TFH-diesel was detected in upgradient Site 13 well 13_DGMW78. The Summary and Conclusions

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section in Appendix B15 includes a statement that since petroleum contamination in the soil is limited to the upper 5 feet, this site is not a source of fuel hydrocarbon contamination. This is based upon only one boring sampled at depths greater than 5 feet.

This site is also located within the south benzene plume and downgradient from Site 13. As stated previously, suspected sources of benzene are Tank Farm 2 or another upgradient location such as Site 16.

Site 19 - Aircraft Expeditionary Refueling (ACER) Site

1. The 4-foot soil sample at upgradient location 19 UGS had a organic vapor analysis (OVA) reading of 1,700 ppmv, several orders of magnitude greater than any other OVA reading at Site 19. Yet laboratory results indicate that the concentrations of TFH (diesel & gasoline) and TRPH are below their CRDLs. What could explain this phenomenon? Could the elevated OVA reading be due to the presence of VOCs for which analysis was not performed?
2. PAHs were found at elevated levels in surface and near-surface soil samples at Stratum 1.
3. Phase I soil samples were not located in the drainage channel along the northwest side of Stratum 1.
4. Stratum 2 (the rectangular 300-feet by 60-feet area) was excavated to a 2-foot depth. Was fill material used to grade this area back to the original surface elevation? Were the surface and/or near-surface samples collected in fill material? The Department is aware that the 15-foot pit is still present at the site.
5. TPH-diesel (31.4 ppm) and semivolatile organic compounds, including PAHs, were found in the 140-foot depth sample at 19_DGMW85; yet TFH (diesel & gasoline) and semivolatile organics were not found in groundwater.
6. Phase I soil samples for Stratum 3 were not located in (probable) stain or trench areas observed in aerial photographs.
7. RFA results for SWMU/AOC 20 indicate potential petroleum hydrocarbon soil contamination in the

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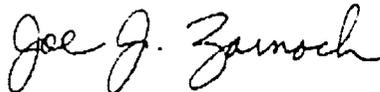
vicinity of Site 19.

Site 20 - Hobby Shop

1. The Vehicle Wash Rack (RFA SWMU/AOC 157), the Drum Storage Area (RFA SWMU/AOC 158) and the oil/water separator (RFA SWMU/AOC 159) located at Building 626 should be evaluated for possible investigation in Phase II.
2. It is not clear if Phase I soil samples were located near the waste oil tank and oil/water separators since the locations were not identified in the *Technical Memorandum*.
3. The elevated TRPH results for 20_SA1 (up to 12,572 ppm) indicate potential oil contamination; this coincides with the IAS which states the ground around the waste oil tank is "saturated" with oil. Elevated lead levels (2,870 ppm) were also found at 20_SA1; did battery acid disposal occur here?
4. Results for Stratum 4 indicate diesel fuel/oil contamination at the surface in the vicinity of 20_GN2 and diesel fuel contamination at 2-feet in the vicinity of 20_GN3. What are potential sources? Is the contamination due to the former practice of washing the asphalt with kerosene? Is the asphalt damaged in these areas? Has this area been repaved?

If you have any questions concerning these comments, please contact me at (310) 590-4878.

Sincerely,



Joe J. Zarnoch
Associate Hazardous Materials
Specialist
Site Mitigation Branch

cc: See next page.

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