

DEPARTMENT OF TOXIC SUBSTANCES CONTROL M600

M60050.000724
MCAS EL TORO
SSIC # 5090.3Region 4
245 West Broadway, Suite 425
Long Beach, CA 90802-4444
(310) 590-48681994 OCT 4
SEP 24 AM 9:56

September 29, 1994

Mr. Wayne D. Lee
Assistant Chief of Staff
Environment and Safety
Marine Corps Air Station El Toro
P.O. Box 95001
Santa Ana, California 92709-5001

Dear Mr. Lee:

DRAFT SOIL GAS SURVEY TECHNICAL MEMORANDUM SITES 24 AND 25

The Department of Toxic Substances Control (Department) has completed review of the above mentioned document. The Departments comments are enclosed.

The document is well written and concise. The Department looks forward to incorporating the information obtained and provided in this document into the Phase II Remedial Investigation (RI) as it is being developed. We look forward to working with you on this project.

If you have any questions, please call me at (310) 590-4920.

Sincerely,

Juan Manuel Jimenez,
Associate Hazardous Substances Scientist
Region 4 Base Closure Unit
Office of Military Facilities

Enclosures

cc: Ms. Bonnie Arthur
U.S. Environmental Protection Agency
Region IX
Hazardous Waste Management Division, H-9-2
75 Hawthorne Street
San Francisco, California 94105



Mr. Wayne D. Lee
September 29, 1994
Page 2

Mr. Joseph Joyce
BRAC Environmental Coordinator
Department of the Navy
Naval Facilities Engineering Command
Environmental Division
1220 Pacific Highway, Room 18
San Diego, California 92132-5181

Mr. John Broderick
Remedial Project Manager
California Regional Water Quality Control Board
2010 Iowa Avenue, Suite 100
Riverside, California 92507-2409

Dante J. Tedaldi, Ph.D., P.E.
BECHTEL National Inc.
401 W. A Street, Suite 1000
San Diego, California 92101-7905

Draft Soil Gas Survey Technical Memorandum Sites 24 and 25

GENERAL COMMENTS

- A) It is difficult to tell exactly when the events took place, please provide a chart showing the planned event dates and the actual event dates associated with the activities discussed in this report.
- B) In the future, Corrective Action Plan(s) should be developed and implemented between sampling events.
- C) Overall, this report is well written and concise.
- D) How will the Phase II RI Work Plan incorporate the trend which shows levels detected increasing with depth? Is it possible that a slug of contamination is present below the areas which were sampled during Phase I and the Soil Gas Survey? This will require a presentation and lots of communication instead of a very long response. Please propose some dates in the near future.
- E) Not all the flags associated with the analytical results are defined in the text, at the end of the tables or in the diagrams. Please propose a solution. (Errata sheets can be easily inserted in the existing document.)

Draft Soil Gas Survey Technical Memorandum Sites 24 and 25

SPECIFIC COMMENTS

Pg. ES-4 Para. 3 Line 6-8

The last sentence in this paragraph is puzzling. The text in the conclusion of this report stated that the air knife sub objective was inconclusive. However, the text in this section states: "Based on these results, the Navy, regulatory agencies, and the Jacobs Team agree that the air knife would not affect soil gas results and that the air knife should be used for the soil gas survey."

Pg. 1-1 Para. 2 Line 3-4

Please describe exactly how this data will be used to assist in the planning of the Phase II Remedial Investigation (RI) field work. Include in your discussion the names and phone numbers of the people who are primarily responsible for incorporation of this large amount of data into the Phase II RI workplan. In addition, please provide the pertinent portions of the Contract Task Order(s) (CTOs) which will develop and implement the Phase II RI. Last of all a schedule for these CTOs and for the finalization of the Technical Memorandum should be included.

Pg. 1-3 Para. 3 Line 6-7

Provide the new submittal date for Navy and agencies review of the revised Phase II RI work plan. It seems highly improbable that an October 1994 due date can be met. THE IMPORTANCE OF THIS PLAN AND ITS SUBSEQUENT IMPLEMENTATION CANNOT BE OVERLY STRESSED. THIS IS A PRIORITY FOR THE DEPARTMENT.

Pg. 2-13 Para. 5 Line 1

Specify which commercial analytical lab was used for the soil samples. Is it certified?

Pg. 2-15 Para. 3

Please provide a copy of the memorandum that was prepared as a result of the 24 June field QA audit. Why did it take so long to prepare the 28 July, 1994 Corrective Action Plan? Were the corrective action recommendations incorporated in a timely manner? What benefit was obtained by preparing a Plan after the last sample was taken?

Pg. 2-17 Para. 1 Line 1

Where is the project note that included observations and recommendations to improve analytical chemistry and QA/QC? What are the observations and recommendations to improve analytical chemistry and QA/QC? Was it implemented?

Pg. 2-21 Para. 2 Line 1

How many samples were tested using a PID for confirmation? How many total samples were taken after June 22, 1994?

Pg. 2-26 Para. 3

Notify the Department how and when the Investigation Derived Wastes (IDW) are disposed of.

Pg. 3-17 Para. 2

The team should re-evaluate the use of the Air Knife in future sampling events. At this time it seems that it is of dubious benefit. As Table 3-3 shows the majority of the samples were taken using a hand auger. Recommended that it not be used at EL TORO.

Pg. 3-27 Para. 2 Line 6

The reference to Table 3-5 in this is in error. Table 3-5 lists maximum concentrations. Table 3-6 lists the compounds in this paragraph. Modify.

Pg. 3-37 Para. 2 Line 3-4

The statement "Except for the area near the east corner of Building 297, concentrations of TCE in soil gas were generally observed to increase with depth" is misleading. The east corner of Building 297 has two borings near it which increased with depth, one does not. Please replace the first "the" with the word "one".

Pg. 3-43 Para. 2 Line 3

There is a reference to Table 3-8. Table 3-8 does not summarize TCE and PCE Levels detected in Soil. Change the reference to Table 3-10.

Pg. 3-44 Para. 4 Line 3

There is a reference to Table 3-8. Table 3-8 does not summarize aromatic hydrocarbons detected in soil. Change the reference to Table 3-11.

Pg. 3-53 Para. 3

Why did the Soil Gas survey resample less than 30 ft samples in areas where the elevated BTEX concentrations were already known to exist?

Pg. 3-57 Para. 3

Referenced Figure 3-22 is missing from the copy of the report the Department received. Please provide.

Pg. 3-58 Para. 58 Line 2

Referenced Figure 3-23 is missing from the copy of the report the Department received. Please provide.

Table 3-4, Pg. 1 of 7

Why was it decided not to take soil gas samples at the former edge of the pavement? This would seem to be a likely choice for the TCE to run to, would it not? Seems like a probable sampling location as well. Please discuss.

Pg. 4-2 Para. 4 Line 12

It will be necessary to discuss the benefits of the air knife in the stratigraphy present at the EL TORO MCAS before it is used again. As noted on page 3-8 of this report soils were clay and silty sand. Clay is not conducive to the air knife, so that its use is questionable at best.

Pg. 4-9 Para. 3 Line 4-5

The statement "These locations are not considered to have a high potential of affecting ground water." should be deleted. Figure 3-21 shows that the ground water has been impacted. In addition, the trend of increasing concentrations with depth overall is a possibility at depths below 30 feet (bgs). This trend has yet to be evaluated and the possibility of these areas affecting ground water has yet to be determined.

Pg. 4-15 Para. 2

The Department cannot concur at this time with no further investigation recommendation of area numbers 3-4, 3-5, 4-3 and 4-4. While these areas exhibited low levels of halogenated hydrocarbons in soil gas, the intent was to use this information for focusing the Phase II RI, not strata elimination. The levels present below 30 ft (bgs) have yet to be determined and the ground water beneath these

sites have confirmed TCE levels. Lets discuss.

Table 4-1, Page 3 of 4

Area 3-4 had one soil gas sample at 15 feet and two soil samples which did not detect VOCS. The soil gas sample detected 1,1-DCE at 33.7Ug/L-v. As a result, elimination of this area at this time seems inappropriate. **First**, page 1-1 of the text states: "The primary objective of the Phase II RI will be to adequately characterize the sites (...) to determine if remediation is required or if No Further investigation is required." It is, therefore, beyond the scope of this investigation. Let us wait until after the results of the Phase II are evaluated to eliminate strata, if appropriate. **Second**, the source(s) which are contributing to the groundwater contamination have not been defined, yet. **Third**, the possibility of this area having contaminants below thirty feet has not been evaluated. **Finally**, there is contamination present in the groundwater below this location. It may be necessary to take samples in the area below the thirty foot bgs level and at the vadose zone.

Table 4-1, Page 3 of 4

Area 3-5, the North End of the Motor Pool has a soil gas hit and known TCE, PCE and CT concentrations present in the groundwater. For the reasons stated above it is recommended that it be left in the investigation.

Table 4-1, Page 4 of 4

Areas 4-3 and 4-4, No Further Action at this time seems to be inappropriate at this time for the reasons stated above.

DEPARTMENT OF TOXIC SUBSTANCES CONTROL



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West Broadway, Suite 425
Long Beach, CA 90802-4444

M E M O R A N D U M

TO: ^{JIMENEZ}
Juan Jimenez
Office of Military Facilities
Base Closure Unit
245 West Broadway, Suite 425
Long Beach, California 90802

FROM: Facility Management Branch
Geological Support Unit
245 West Broadway, Suite 425
Long Beach, California 90802

DATE: September 19, 1994

SUBJECT: COMMENTS ON MARINE CORPS AIR STATION EL TORO, CALIFORNIA,
INSTALLATION RESTORATION PROGRAM, REMEDIAL
INVESTIGATION/FEASIBILITY STUDY, DRAFT SOIL GAS SURVEY
TECHNICAL MEMORANDUM SITES 24 AND 25

INTRODUCTION

As requested, the Geological Support Unit (GSU) of the Department of Toxic Substances Control (DTSC) has reviewed the document entitled *Marine Corps Air Station (MCAS) El Toro, California, Installation Restoration Program, Remedial Investigation/Feasibility Study, Draft Soil Gas Survey Technical Memorandum Sites 24 and 25 (draft report)*, dated September 5, 1994. The draft report was prepared by Southwest Division, Naval Facilities Engineering Command, in conjunction with Jacobs Engineering Group, Inc. and CH2M Hill.

The purpose of the soil gas survey is to identify vadose zone sources of volatile organic compounds (VOCs) in the southwest quadrant of the Station at Sites 24 and 25 that may be the cause of, or contributing to, groundwater contamination. This soil gas survey was originally designed as a reconnaissance or gross analysis for identification of potential VOCs sources. The data are to be integrated into the Phase II RI/FS workplan to act as a foundation for the second phase of the soil gas survey. This second phase is to better define the extent of contamination, both



vertically and laterally and also help to identify boring locations. The second phase of the soil gas survey should precede other field activities in areas where soil gas is the primary method used to determine extent of contamination.

As discussed extensively, with the Clean I contractors, GSU would like to inform the Clean II contractors that the second phase of the soil gas survey must incorporate flexibility into the design. Predetermined sampling locations and depths may be subject to on-site field changes.

GSU recommends that DTSC is ensured by the Clean II contractors that the first round of soil gas survey results are used for the intended purposes.

Listed below are general issues directed to MCAS El Toro and the Clean I and Clean II contractors. Before approval of this document, GSU recommends that the following concerns be addressed.

GENERAL ISSUES

1. Executive Summary

If soil data are to be used for future risk assessments and feasibility studies as stated, ensure that the Clean II contractor utilizes the information by integrating it into existing data.

2. Section 2.1.4 - Air Knife Nondestructive Drilling Utility Clearance

Although the QA/QC test results demonstrated that the air knife did not affect the integrity of the soil gas sample, in practice the air knife is not applicable at MCAS El Toro. The shallow soils beneath the Station tend to be fined-grained and often moist, making the air knife less effective than originally anticipated. During each of the three visits GSU staff made to sites where the air knife crew was working, boreholes were being hand augered because the air knife was unable to advance through the soil. At each visit GSU staff was informed by the air knife field crew that many of the utility clearance boreholes were hand augered due to air knife failure.

3. Section 2.3.4 - Field Audits

Attached are the concentrations for the Performance Evaluation (PE) samples provide by the USEPA. The final report should include a table comparing the PE samples with the field results and an accompanying discussion regarding the discrepancies.

4. Section 2.5.3 - Soil Gas Analytical Method / Section 3.3.2 - Halogenated Hydrocarbons

The *draft report* should flag Freon 113 soil gas results that were estimated using an average FID response factor.

Provide a discussion comparing the estimated Freon 113 results to quantified Freon 113 results (initial calibration performed).

5. Section 4.2 - Methanol Sample Preservation Comparison Results

The approach to use methanol preservation for VOC soil samples must be re-evaluated. As stated in the *draft report*, there were an insufficient number of samples collected to draw definitive conclusions on the advantages of a methanol preservation method. It is suggested that the BCT collectively gather data and information that may be available from other facilities regarding methanol preservation. If conclusive studies from other sites cannot be obtained, GSU suggests that either soils be collected and preserved using the standard CLP approach or that an on-site pilot study be conducted.

It is recommended that further technical discussions occur in the near future in regard to the purpose of the soil gas results and the impact to the Phase II RI/FS workplan.

Mr. Jiminez
September 19, 1994
Page 4

Thank you for the opportunity to review and comment on this document. If you have any questions, please contact me at extension 5528.



Sherrill Beard
Hazardous Substances
Engineering Geologist
Geological Service Unit

Concur: Karen Thomas Baker, CEG
Unit Chief
Geological Services Unit

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EPA REG. 9 LAB →→ REG NINE

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CYL 2 "TRUE VALUES"

Calculated Values

| Compound | CAS RN | Primary Ion | Conc ppbv | Molecular Weight | Conc (ug/l) |
|---------------------|----------|-------------|-----------|------------------|-------------|
| Vinyl chloride | 75-01-4 | 62 | 4000.000 | 62.5 | 11.15 |
| 1,3-Butadiene | 106-99-0 | 39 | 4000.000 | 54.09 | 9.85 |
| Methylene chloride | 75-09-2 | 49 | 4000.000 | 84.93 | 15.16 |
| 1,1-Dichloroethane | 75-34-3 | 61 | 4000.000 | 98.96 | 17.66 |
| Chloroform | 67-66-3 | 83 | 4000.000 | 119.38 | 21.30 |
| Benzene | 71-43-2 | 78 | 4000.000 | 78.12 | 13.94 |
| Trichloroethylene | 79-01-6 | 130 | 4000.000 | 131.39 | 23.45 |
| 1,2-Dichloropropane | 78-37-3 | 63 | 4000.000 | 112.85 | 20.16 |
| Toluene | 108-88-3 | 91 | 4000.000 | 92.15 | 16.48 |
| Tetrachloroethylene | 127-18-4 | 164 | 4000.000 | 163.63 | 29.59 |
| 1,2-Dibromoethane | 106-93-4 | 107 | 4000.000 | 187.87 | 33.53 |
| Chlorobenzene | 108-90-7 | 112 | 4000.000 | 112.68 | 20.08 |

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1st PE "True Values"

Calculated Values

| Compound | CAS RN | Primary Ion | Conc ppbv | Molecular Weight | Conc (ug/l) |
|---------------------|----------|-------------|-----------|------------------|-------------|
| Vinyl chloride | 75-01-4 | 62 | 4000.000 | 62.5 | 11.15 |
| 1,3-Butadiene | 106-99-0 | 39 | 4000.000 | 54.06 | 6.85 |
| Methylene chloride | 75-09-2 | 49 | 4000.000 | 84.93 | 15.16 |
| 1,1-Dichloroethane | 75-34-3 | 61 | 4000.000 | 98.98 | 17.88 |
| Chloroform | 67-66-3 | 83 | 4000.000 | 119.38 | 21.90 |
| Benzene | 71-43-2 | 78 | 4000.000 | 78.12 | 13.94 |
| Trichloroethylene | 79-01-6 | 130 | 4000.000 | 131.39 | 23.48 |
| 1,1-Dichloropropane | 78-87-5 | 63 | 4000.000 | 112.99 | 20.16 |
| Toluene | 108-88-3 | 91 | 4000.000 | 92.15 | 16.45 |
| Tetrachloroethylene | 127-18-4 | 164 | 4000.000 | 163.83 | 29.69 |
| 1,2-Dibromoethane | 106-93-4 | 107 | 4000.000 | 187.87 | 33.53 |
| Chlorobenzene | 108-90-7 | 112 | 4000.000 | 112.56 | 20.09 |

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CYL3: "TRUE" VALUES

| Compound | CAS RN | Conc | Molecular Weight | Conc (ug/l) |
|----------------------------------|----------|----------|------------------|-------------|
| Propylene | 115-07-1 | 4000.000 | 42.08 | 7.50972624 |
| Chloroethane | 75-00-3 | 4000.000 | 64.52 | 11.5144377 |
| Trichlorofluoromethane (Halo 11) | 75-69-4 | 4000.000 | 64.52 | 11.5144377 |
| n-Pentane | 109-66-0 | 4000.000 | 72.15 | 12.8761108 |
| 1,1-Dichloroethene | 75-35-4 | 4000.000 | 96.94 | 17.3002108 |
| 3-Chloro-1-propene | 107-05-1 | 4000.000 | 78.53 | 13.6577792 |
| trans-1,2-Dichloroethene | 156-60-5 | 4000.000 | 96.94 | 17.3002108 |
| cis-1,2-Dichloroethene | 156-59-2 | 4000.000 | 96.94 | 17.3002108 |
| Hexane | 110-54-3 | 4000.000 | 86.18 | 16.3799478 |
| Carbon tetrachloride | 56-23-5 | 4000.000 | 153.82 | 27.4511903 |
| Heptane | 142-82-3 | 4000.000 | 100.21 | 17.8837848 |
| 1,1,2-Trichloroethane | 79-06-5 | 4000.000 | 133.41 | 23.808759 |
| 1,1,2,2-Tetrachloroethane | 79-43-5 | 4000.000 | 167.85 | 28.9550273 |