

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2
100 HEINZ AVE., SUITE 200
BERKELEY, CA 94710-2737



July 30, 1992

Ms. Louise T. Lew
Code 1811
Naval Facilities Engineering Command
Western Division
900 Commodore Drive
San Bruno, California 94066-2402

Dear Ms. Lew:

DATA SUMMARY REPORT, PHASES 2B AND 3 FOR RI/FS, Alameda Naval Air Station (ANAS)

The Department of Toxic Substances Control (DTSC) has completed its review of the Data Summary Report received on April 27, 1992. Enclosed are the Department's comments.

If you have any questions, please call Virginia Lasky at (510) 540-3817.

Sincerely,

A handwritten signature in cursive script that reads "Virginia L. Lasky".

Virginia L. Lasky
Associate Hazardous Materials
Specialist
Site Mitigation Branch

cc: Mr. Gary Munekawa
Code 1811
Naval Facilities Engineering Command
Western Division
900 Commodore Drive
San Bruno, California 94066-2402

Ms. Janette Baxter
SF Bay Regional Water Quality Control Board
2101 Webster Street, Suite 500
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Mr. Randy Cate
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Building 114, Code 52
Alameda, California 94612



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GENERAL COMMENTS

1. Unless otherwise indicated all comments refer to Volume 1 of the Data Summary Report.
2. You proposed that Water Quality Criteria (WQC) for the protection of marine life be used as standards to determine if any further investigation is needed. We concur with this determination except in instances where the Maximum Contaminant Level (MCL) for drinking water are more stringent than the WQC as in organics. Unless Alameda NAS provides sufficient information to show that the ground water do not meet the criteria for drinking water, the ground water in ANAS is considered drinking water potential.

In determining whether further investigation is needed, the Department used both MCL (organics) and WQC (inorganics) in screening the data. We did not use ANAS proposed attenuation factor. The DTSC's review did not result in a significant modifications to Navy's conclusions and recommendations.
3. We recommend that for ease in review of future reports that ANAS use "spider map" when presenting analytical results at each sampling point for both soil and ground water.
4. We would like to reiterate our point made in a letter dated January 29, 1992 that "cleanup levels" even for metals will strictly be derived from health based risk assessment.
5. Recommendations for additional investigations for soil and ground water lack some details such as: number, depths and locations.
6. Copies of all original field logs should be provided.
7. For ease of review, please provide narratives and explanations of formula every time calculations are involved as when deriving hydraulic conductivities from the slug tests.
8. Submit Baseline Risk Assessment and Preliminary Remedial Action Alternatives for contaminants at each site or operable unit. The purpose of this is to initiate the process with the best available information and continue to refine them as information is acquired.
9. For future reports, provide map of each site showing at least 300 feet radius beyond its boundary. The building number and its uses should be identified if obtainable.

10. Where source/s of contamination have been identified and could posed health hazards to the public or the environment, immediate source removal or containment may be necessary to prevent spread of contamination. Sites 4 (Plating Shop) and Site 7a (fuel service stations) fit this category.
11. Chapter 16, 1 of 2 of the Data Summary Report, page 16-6, provides explanations on the presence of PAH within the fill. Because of the different concentrations of PAH found at varying depths at several sites it would be best address when Baseline Risk Assessment for each site is being conducted.
12. You have recommended three additional quarterly monitoring. We concur with the general concept of studying the effect of seasonal fluctuations. However, the detail or what kind of information will be provided as a result of this study was not discussed. Another proposed use of the additional quarterly monitoring is to set up data baseline. It was also not clear what the purpose of this or how this data baseline will be put together. You may proceed, however, with the quarterly monitoring but need to provide information indicated above.

The quarterly monitoring should be implemented immediately upon receipt of these comments with at least 5 days notification to concerned agencies prior to the start of field task.

13. All Underground Storage Tanks (USTs) that have detected floating products in the soil or in ground water should be further investigated either by trenching or by some other means. If floating products exist, the focus of investigation should be geared towards the removal of the source or containment to prevent further spread of contamination.
14. It is not too early to propose a site or combination of sites as operable units. We encourage the Navy to initiate this process as early as possible.

SPECIFIC COMMENTS

Section 5, Site 4 (Building 360)

1. Although, there are other investigations that have been done on this site and results still need to be submitted, the concentration of Cr, over the MCL and the WQC limits in the ground water and in soil at alarming levels, are apparent all over Site 4. Also the presence of organics (TCA, TCE,

DCE, DCA and even Bis-2(ethyl-hexyl)phthalate) in the ground water even above the MCLs on some are apparent. There is no doubt that the source of contamination came from the years of operating this shop which has leached out to the soil and to the ground water. Because of the high concentrations of chromium found in ground water and in soil, it is necessary for the Navy to initiate an interim remedial action to contain or prevent the spread of contamination of chromium in soil and in ground water.

2. Elevated metal concentrations were observed in ground water at B-04-0. A grab ground water sample should be collected in the vicinity of this boring to confirm detected levels.
3. You have indicated that additional soil borings and monitoring wells are being evaluated as part of Phase 1 and 2A activities. However, additional shallow and deep wells should be installed downgradient of Site 4 to determine the horizontal and vertical extent of ground water contamination.
4. Acceptable detection limits for mercury, nickel and silver should be used for the next sampling round for ground water and compared to WQC without using any attenuation factor (this is applicable to most sites).
5. DTSC concurs with your recommendation that the plating shop be decommissioned and all liquid and particulate waste should be removed from the interior for proper disposal. Also include in your decommissioning plan procedures for decontaminating walls, interior and exterior surfaces of fixtures.
6. Deeper soil samples should be collected to determine the vertical extent of cyanide contamination.
7. You stated that the presence of bis(2-ethylhexyl)phthalate may have been introduced in the sampling process when decontamination water was stored in plastic bottles. Is this a normal practice? Are there plans in-place to ensure that this do not happen in the future.

Section 6, Site 5 (Aircraft Rework Facility)

1. Trichloroethane(TCA) and Trichloroethylene (TCE) were detected at elevated concentrations of 39,000 ug/kg and 2,200 Ug/kg at B05-11-014. Collect and analyze soil samples at the vicinity of B05-11 at proposed original depths and a grab ground water samples. If confirm, submit plan to

define the horizontal extent of soil contamination. Since the contamination is outside the building it could be an indication of another source or a hot spot.

2. Although in your summary you have indicated that TCA, TCE, DCE, and DCA are not present above the WQCs, still these volatiles are found to be above MCLs in M-05-02, M-05-03, M-05-04 and M-05-05.

Some volatiles including derivatives of fuels are found to be present in soil at the surface to about 4 feet deep at M-05-03, M-05-08 and B-05-10. TCE, TCA ... could come from the operation. The presence of volatile organics from fuel derivatives need to be further investigated.

3. DTSC concurs with your proposal to install three monitoring wells at the said locations. However, additional wells should be installed at the deeper water bearing zone downgradient of M-05-05 to monitor for presence of contaminants and define lithology at this site. In addition, the well supposedly to be installed upgradient of M-05-02 should be placed further upgradient to also determine any upgradient source for ethylbenzene, toluene and xylene.

Section 7, Site 6, Bldg.41 (Aircraft Intermediate Maintenance Facility)

1. Provide the following information for the paint stripping tank/former wash pad, the hazardous waste storage area, and the solvent tank: capacity, the date the units started operating and the hazardous materials that were handled in the units.
2. Has leak test been done on the solvent and the paint stripping tanks? If not, leak test, and trenching or other procedures should be performed to determine any past spillage and leakage. These tanks could be possible sources of the volatiles detected in ground water at wells M-06-01, M-06-02.
3. Semi-volatiles are found to be present in the soil surface and at two feet deep in the southwestern portion of the building (B06-17 and B06-1). In contrast to semi-volatiles detected at deeper locations (11' to 14' deep) at other sites, source for these contaminants are coming from the surface. Could it be from the paint stripping tank/former wash pad? These need to be investigated further.

Beryllium (Be) is also consistently present in the soil at different depths at concentrations higher than the other

sites. A study should be conducted to determine the source of Be in this site.

Section 8, Site 7a, Building 459 (Navy Exchange Fuel Station)

1. Provide the following information regarding the two abandoned fuel underground storage tanks (UST) such as: type of fuel stored in the tanks, capacity, where there evidence of spill or leakage observed in the soil surrounding when the tanks were removed, if observed where remediations performed in the soil or ground water.

According to the DSR, Section 8.3 (2nd par.), free product in the ground water was seeping into ERM's B-1 and B-2, adjacent to the abandoned tanks, and appeared to be present underneath the concrete slab that overlies the abandoned tanks. If remediations were not recorded, this information has to be verified by performing further investigation such as trenching in the immediate area of the abandoned tanks or other appropriate procedure to verify the presence of free product.

2. DTSC called the Navy's Environmental Department to verify the integrity of existing tanks, however, conflicting information were received regarding the results of leak test performed on these tanks. Please verify with the Navy about leak tests on these tanks and update information in the Data Summary Report. Extra efforts should be put in obtaining the most current information.

If information indicate that any of the existing tanks fail to pass the leak test, similar investigation should be performed as in number 2, 2nd par.

3. Similar investigations such as trenching or other appropriate procedures should be performed on the waste oil and solvent USTs if no record of abandonment procedures, records of whether evidence of soil contamination surrounding soil and ground water were noted.
4. If during investigations, the Navy observed floating products, DTSC should be notified immediately.
5. A whole list of elevated metal concentration were detected in the soil at two and seven feet below the surface at M-07A-02. Confirm results by collecting soil samples at the vicinity of M-07A-02 at 0,2,7 and 13 feet deep.
6. Collect two additional soil boring at the former transformer pad at appropriate depths and analyze for PCB and the whole metal scan.

7. Install shallow wells east of Site 7A beyond the Navy property, and south and west (housing) of the site to determine if ground water is being affected in this area. Also install deeper wells downgradient of the site once ground water direction has been determined to monitor the second water bearing zone.
8. Provide boring logs for wells W-1, W-2 and W-3.
9. There are several types of contaminants in this site. Occurrence of semi-volatiles (mostly PAH) are mostly in the upper surface up to seven feet. Please investigate further what the possible sources are.

Arsenic, Barium, Antimony and Beryllium is in ground water above MCL at Well W3. This needs to be confirmed in the next quarterly ground water monitoring.

Section 9, Sites 7B and 11, Building 162 and Building 14 (Service Station and Engine Test Shop)

1. If record indicates that 7B was formerly used as a service station, as stated in page 9-1, Section 9.1.1, 1st par., geophysical methods or other appropriate methods should be used to locate USTs.
2. If evidence suggests the presence of USTs as indicated in Section 9.1.1, 2nd par, ANAS should verify this information. Presence of floating products should be immediately reported to the Department.
3. Provide the boring log for well WA-8.
4. A ground water monitoring well should be installed downgradient of B-11-05 to intercept contaminants in the trough area.
5. We concur with your conclusion and recommendations to define the lateral extent of TPH.

Section 10, Site 8, Building 114 (Pesticide Storage Area)

1. The PAH detected in soil at this site in several borings such as B08-04-014, B08-08-14 and duplicate, B08-09-014 and duplicate, and B08-11-014 are extremely high. Study has shown that PAH are strongly sorbed in soil because of its high K_{oc} and K_{ow} and considering other factors. At this site, however, ground water is very shallow (at an average depth of six feet below the surface) and with extremely high concentrations of PAH at 14 feet deep below the surface, the

likelihood of these constituents leaching is inevitable as shown in ground water samples although PAH were detected at lower concentrations. What is not known is how much PAH will leach out to ground water at these conditions. Also other factors have to be taken into consideration before we can make any determination on what impact PAH has on the environment.

2. We concur with your recommendation to take additional surface soil samples and to analyze for PCB at the northeastern portion of the site. However, composite samples are not acceptable therefore discreet samples should be taken instead. Also, include for analysis the whole metal scan because high concentrations of lead and zinc were found in this area.
3. We also concur with your recommendation on installing additional well east of M-05.
4. Deeper borings should be taken at appropriate locations to further define the site's lithology, and determine the existence and depth of a second water bearing zone.

Section 11, Site 10A, Building 400 (Missile Rework Operations)

1. Acceptable detection limits for mercury, nickel and silver should be used in the next quarterly sampling. However, no attenuation factor should be used when comparing results to WQC.

Section 12, Site 12, Building 10 (Power Plant)

1. During removal of tanks, provide records showing observations in the surrounding soil or ground water, and remediation measures. This is of concern because TPH is being detected consistently at elevated concentrations at several borings. If no records exist, trenching or other appropriate procedures should be performed to determine if any floating products or evidence of extensive contamination exist where the USTs were buried.
2. Please provide data to support your assertion that the possible source of elevated TPH concentration is the asphalt and base coat material covering the entire area and not the abandoned tanks that used to be filled with fuel oil.
3. It is apparent that TPH is present all over the site but mostly on the surface. Therefore, a sampling plan should be submitted to define the extent of TPH soil contamination.

Section 13, Site 14, Fire Training Area

1. DTSC concurs with proposal to lay out a surface grid outside the berm to determine the extent of TPH contamination.
2. DTSC concurs with your recommendation on defining the extent of PCB contamination outside the bermed area but also define the extent of dioxin contamination . Compositing samples are not acceptable so discreet samples should be taken instead.
3. Soil samples should be collected around the berm and through the concrete slab and sump to characterize the presence of volatiles.
4. Because of the detected benzene in the soil gas survey and other hazardous constituents detected in the unpaved area we think that the exposure pathway for inhalation for this area is complete.

Section 14, Site 15, Buildings 301 and 389 (Transformer Storage Area)

1. DTSC concurs with your recommendation to expand the grid to determine the extent of contamination for PCB, pesticides and semi-volatile organics but also include lead, zinc and barium which were detected in elevated concentrations in most surface samples.
2. DTSC concurs with your recommendation to expand the grid to determine the extent of contamination for PCB, pesticides and semi-volatile organics but the Navy should also include lead, zinc and barium which were detected at elevated concentrations in most surface samples.

Site Geologic and Hydrogeologic Characterization

1. Submit a plan identifying whether significant vertical ground water flow exists on the site.
2. Submit a plan to define lithology of the Site beyond the 15 feet level below the surface especially in areas where band of continuous clay layer do not exist unlike several areas at ANAS. The existence and extent of the second water bearing zone must also be define.
3. The fence diagram in Site 5 was not consistent with the reading of the boring log. Please verify and submit revised fence diagram.
4. Boring logs should include the following information:
 - a) reference elevation - should state if elevation is above mean sea level;
 - b) should state ground elevation;
 - c) should have registered geologist's signature; and
 - d) under geologic description - indicate grain shape.

Ground Water Tidal Mixing Study

1. Define the extent of seawater intrusion to the inland.
2. Identify potentiometric levels at highest high tide, lowest low tide and the net potentiometric levels at each site. Provide ground water contour maps of the above and hydrographs - no more than 5 wells superimposed on the hydrograph of the stilling well (scale: at least 1" = 1 ft; and 0.5 day per time interval or less)

Slug Test (Hydraulic Conductivity)

1. Volume 2 of 2 of DSR. There is disagreement on the value for well radius (r_w) of 0.19. If hole diameter is 8.35, calculated r_w should be 0.35 instead of 0.19 unless another value was used. This will throw out all calculations for $\ln(Re/Rw)$.
2. Data indicated that $\text{Log}(Re/Rw)$ was used instead of $\text{Ln}(Re/Rw)$, please verify calculation.
3. Please address numbers 1 and 2 above and recalculate hydraulic conductivity and resubmit the whole appendix (amendment). However, this time show all formulas and calculations. It is not necessary to revised the Hydraulic Conductivity quoted in each site in volume 1 of DSR.

Quality Control/Quality Assurance

1. All detection limits should be below the WQC and MCL. If they are exceeded, explanations or justifications should be provided.
2. In the future, explanations should be provided why data are rejected and why it need not be replaced by reanalyzing samples.
3. There are some sample locations that showed NA (Not Analyzed). Please provide explanations why they where not analyzed or why they need not be resampled. Otherwise these sample locations should be resampled and analyzed as part of the next sampling investigations.

Submittal of Response:

1. ANAS does not need to resubmit the draft Data Summary Report. A separate document can be submitted to address comments.
2. All submittals relating to workplans on future investigations of soil and ground water should be submitted within thirty (30) days from the date of this letter.
3. The rest of submittals should be submitted within sixty (60) days from the date of this letter except for the Baseline Risk Assessment and Preliminary Remedial Action Alternative documents.

The Baseline Risk Assessment and the Preliminary Remedial Action Alternative documents should be submitted at staggered schedule (e.g. at least no more than four sites every thirty days) no later than ninety days (90) from September 30, 1992.