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From: Commanding Officer, Engineering Field Activity, West, Naval Facilities Engineering Command
To: Distribution

Subj: REMEDIAL INVESTIGATION/FEASIBILITY STUDY, RESPONSE TO COMMENTS ON THE DRAFT DATA TRANSMITTAL MEMORANDUM, SITES 4, 5, 8, 10A, 12 AND 14, NAVAL AIR STATION (NAS), ALAMEDA, CALIFORNIA

Encl: (1) Response to Department of Toxic Substances Control (DTSC) and Regional Water Quality Control Board (RWQCB) comments on subject document
(2) Response to Toxics Focus Group comments on subject document

1. Enclosure (1) is the response to DTSC and RWQCB comments on the draft Data Transmittal Memorandum for Sites 4, 5, 8, 10A, 12 and 14, Naval Air Station (NAS), Alameda, California. Enclosure (2) is the response to the RAB Toxic Focus Group comments. This document will be finalized soon without changes. The information contained in the document is available in the geographic information system.

2. If you have any questions regarding this matter, I can be reached at (415) 244-2549, FAX (415) 244-2654.

Original signed by:

GEORGE KIKUGAWA
By direction of
the Commanding Officer

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RESPONSE TO AGENCY COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY DATA TRANSMITTAL MEMORANDUM, SITES 4, 5, 8, 10A, 12, AND 14 NAVAL AIR STATION ALAMEDA

This document presents the Navy's responses to comments from the regulatory agencies on the remedial investigation/feasibility study data transmittal memorandum, Sites 4, 5, 8, 10A, 12, and 14 dated May 16, 1995. The comments addressed below were received from the California Department of Toxic Substances Control (DTSC), dated July 26, 1995; and from the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), dated July 5, 1995.

RESPONSE TO COMMENTS FROM DTSC

Specific Comments

1. **Comment:** **Page 3-3, Site 4. CPT point S04-04 was not driven due to subsurface refusal. Please specify when the CPT will be attempted a second time.**

   Response: CPT point CPT-S04-04 was advanced on January 27, 1995. Lithologic data from CPT advancement is attached to these responses.

2. **Comment:** **Page 3-7, Site 4, Soil Borings. Boring B04-41 was not completed because of subsurface obstructions; therefore the boring was completed late and analytical results were not available for inclusion in this memorandum. Please specify when the data will be available and how the data will be transmitted.**

   Response: Soil boring B04-41 was completed on September 1, 1994. Lithologic and analytical data from the boring are attached to these responses. The soil boring identification number appears in the left hand column of the analytical results table; the depth of the sample is included in the boring identification number.

3. **Comment:** **Page 3-12, Site 4. Please indicate when the two additional deep wells will be installed. Also, please clarify the source of additional soil and groundwater data.**

   Response: Deep monitoring wells D04-02 and D04-03 were installed on March 2 and February 24, 1995, respectively. Lithologic data, boring logs, monitoring well completion diagram, and soil sample results from these wells are attached. Groundwater monitoring data for detected organics for two quarters are attached to these responses. Also, the remedial investigation report in progress will include all site data.

4. **Comment:** **Page 4-6, Section 4.2.2, Site 5. Other samples were collected at Site 5 and were not reported in this memorandum. CPT/HydroPunch® samples were to be collected at five locations as part of the CTO 280 investigation. Three**

of these locations were to be converted to piezometers. Were these samples collected and piezometers installed? Please include any data collected at these CPT locations in this report.

Response: CPT locations CPT-S05-08, CPT-S05-09, CPT-S05-11, and CPT-S05-12 were completed during the CTO 280 field investigation; CPT-S05-10 was not completed as a CPT point due to building space restrictions, but was completed as a GeoProbe point. Deep HydroPunch® groundwater samples were collected from each of the CPT locations and shallow HydroPunch® samples were collected from locations CPT-S05-11 and CPT-S05-12. Shallow GeoProbe groundwater samples were collected from locations CPT-S05-08, CPT-S05-09 and from the proposed CPT-S05-10 location. Shallow piezometers were installed for groundwater elevation purposes only in locations CPT-S05-08, CPT-S05-09 and CPT-S05-10. The data from these sampling events are included in the "Remedial Investigation/Feasibility Study Data Transmittal Memorandum Sites, 1, 2, 3 Runway Area 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16 and 19 - DRAFT" (CTO 280 Data Transmittal Memorandum); dated July 11, 1995.

5. **Comment:** **Page 4-10, Section 4.3.1, First Water-Bearing Zone. As stated in the memorandum groundwater flow is highly influenced by preferential flow into the utility trenches or leaking underground utilities. This hypothesis is stated because of the seemingly haphazard direction of groundwater in the first water-bearing zone. The physical characteristics of the first water-bearing zone may also influence groundwater flow directions. The lithology of the first water-bearing zone is primarily hydraulic fill. Air photos show how hydraulic fill was placed during the construction of NAS Alameda. Long linear rows of hydraulic fill were created by pumping bay sediments into diked areas. The deposition of larger particles may have occurred near the central axis of the rows, while finer particles may have deposited away from the center. The distribution of different sized particles may have influenced the direction of groundwater flow.**

Response: The memorandum states that groundwater flow may be influenced by utility trenches, but this cannot be verified. The scenario presented by DTSC is possible. A more detailed assessment of the hydrogeology at NAS Alameda will be presented in the remedial investigation reports.

6. **Comment:** **Figure 4-23, Site 5, Volatile Organic Compounds. Monitoring wells at Sites 8, 10A, and 12 are also shown on this diagram. A similar figure for these sites is not included in the memorandum. Were the other sites not included in this figure because VOCs were not detected at those sites, or does this figure only show groundwater information for Site 5?**

Response: Volatile organic compounds (VOC) in groundwater at Sites 8, 10A, and 12 are shown on Figure 4-31 of the memorandum.

7. **Comment:** **Page 6-2, Section 6.3 Summary of Analytical Findings. Please tie in the lithologic and groundwater flow data into this section. The integration of these data are important in understanding the significance of the analytical results.**

Response: Comment noted. The hydrogeologic interpretation relating contaminant transport will be addressed in the remedial investigation reports. The objective of this interim data summary report is to report analytical findings, and to make best estimates concerning data gaps.

8. **Comment:** **Page 6-6, Section 6.4 Recommendations. The adequacy of the recommendations made in this section can not be determined without full integration of environmental data at NAS Alameda. This integration should be completed through the application of a Geographic Information System for NAS Alameda. Groundwater contaminant plume contour maps are necessary prior to making final conclusions on the extent of soil and groundwater contamination. The recommendations made in this section are considered preliminary recommendations. As more information becomes available, or is made available in a different format (i.e. GIS) our need for additional information may evolve.**

Response: Comment noted.

9. **Comment:** **Page 6-6, Section 6.4 Recommendations. The first paragraph of this section stated that no further work is recommended for soil and groundwater in the second water-bearing zone. However, at Sites 4 and 5 downward migration of TCE, 1,1,-TCA is a concern and will be further investigated. Are these statements consistent?**

Response: An additional investigation was conducted at Sites 4 and 5 to evaluate the potential for downward migration of TCE and 1,1 TCA. The results for Site 4 are briefly discussed in this response, and results for Site 5 are discussed in Attachment A of the "Remedial Investigation/Feasibility Study Data Transmittal Memorandum Sites, 1, 2, 3 Runway Area 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16 and 19 - DRAFT" (CTO 280 Data Transmittal Memorandum) dated July 11, 1995.

Attached to this response are the results of HydroPunch® samples collected on the north side of Building 360 (Site 4), and also the monitoring results of deep groundwater samples collected from the north and south side of Building 360. On the north side of Building 360, TCE was detected at 1300 micrograms per liter at 20 feet below ground surface (bgs) in HydroPunch® sample CPT-S04-01. Based on this information, the Navy and agencies agreed on a stepwise HydroPunch® investigation to guide the installation of a deep monitoring well, and to evaluate whether well coverage in this region was adequate. A total of seven HydroPunch® samples were collected near the north west corner of Building 360 to evaluate the distribution of chlorinated solvents in the saturated

zone (see attached Figure 2). HydroPunch® samples were collected from varying depths (as depicted on the data tables); those samples collected at 10, 20, or 30 feet bgs contained chlorinated solvents, and those collected at 50 feet bgs did not. Based on the data collected the location of a deep monitoring well was agreed upon (D04-03). During the installation of deep monitoring well D04-03, soil samples were collected every ten feet to evaluate the potential for pushing TCE downward during well installation. TCE was detected in soil at 20 feet bgs, but not at any other depths. The completed well was screened from 84 feet to 94 feet bgs. Analytical results indicate that chloroform was detected, but not TCE. The Navy believes that the placement of wells and our understanding of the contaminant distribution is adequate. From data collected, it appears that the extent of TCE contamination can be evaluated.

10. **Comment:** **Page 6-8, Sites 10A and 12. The Phase II investigation of the Environmental Baseline Survey has identified DCE in the soil vapor under Site 10A. This new information will change any previous conclusions on this site.**

Response: The Navy believes this new information does not change previous conclusions regarding Site 10A. Analytical results of groundwater monitoring on the south side of Site 5 and the north side of Site 10A indicate that the well placement provides adequate monitoring to characterize the extent of chlorinated solvents. Contour maps depicting the distribution of chlorinated solvents are provided in the "Remedial Investigation/Feasibility Study Data Transmittal Memorandum Sites, 1, 2, 3 Runway Area 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16 and 19 - DRAFT" (CTO 280 Data Transmittal Memorandum); dated July 11, 1995. Monitoring data show that TCE and 1,1 dichloroethene (1,1 DCE) are present on the north side of Site 10A, but not on the south side. Therefore, the Navy believes well coverage for this site and monitoring data are adequate for evaluating risks at the site.

11. **Comment:** **Page 6-8, Site 14. Additional dioxin samples have been collected as part of the removal action planned for Site 14. The results of this data has not been made available to the regulatory agencies.**

Response: The additional samples were obtained by IT Corporation, and the results of the sampling were provided to DTSC by Dennis Wong at Engineering Field Activity West (EFAW) on September 9, 1995.

RESPONSE TO COMMENTS FROM RWQCB

Specific Comments

1. **Comment:** **Section 4.1 Regional Lithologic Findings. This section needs to refer the reader to analytical data (soil boring or Cone Penetrometer Test logs) derived from the most recent sampling effort at NAS Alameda, if the**

report is to make any general conclusions about the site-wide geologic or hydrogeologic conceptual model. The report shall refer to specific logs in the appendices. This will allow the reader to quickly reference actual field data when the report makes such conclusions.

Response: The lithologic data are presented in the data transmittal memorandum as an appendix; however, the geologic interpretation and development of geologic and hydrogeologic conceptual models will be addressed in the remedial investigation reports.

2. **Comment:** **Section 6.4 Recommendations. There is an area of high volatile organic compound (VOC) concentration in the groundwater at Site 4, near MW360-01 and CPT-S04-01. Trichloroethene was detected at well MW360-01 (in the shallow fill water-bearing zone) at 3,400 micrograms per liter, and a CPT-S04-01 (in deep Merritt Sand water-bearing zone) at 1,300 micrograms per liter. The two aquifers are hydraulically connected and the gradient appears to move in the northwest direction. From this area of Site 4 (according to Figure 4-9 of this report). A CPT and HydroPunch® sample needs to be taken northwest of MW360-01 and analyzed for VOCs at the same depths of each water-bearing zone. This information would ensure that the VOC detect at MW360-01 has control in the northwest direction. This agency would like the Navy to utilize existing lithologic information as well as future CPT data to make certain that the HydroPunch® sample is taken in a sandy water bearing portion of the aquifer.**

Response: Please refer to DTSC Comment 9.

This comment has been addressed through previous work conducted between May 1994 and May 1995. In May 1994, the Navy provided a technical memorandum to the agencies discussing the technical approach for conducting a stepwise HydroPunch® investigation north of Building 360. The stepwise investigative approach was designed to evaluate the distribution of TCE in the groundwater north of Building 360, because past monitoring results at MW 360-01 indicated elevated TCE concentrations in the first water bearing zone. There was concern that well coverage was inadequate on the north side of Building 360, and because there was concern that TCE could be migrating downward, there was a need to identify the best location for a deep well at the outer boundary of the contamination.

The May 13, 1994 memorandum stated "A deep groundwater monitoring well will be installed after an evaluation of the analytical results of these soil and groundwater samples. The deep groundwater monitoring well will be located at the CPT/HydroPunch® sample location with the lowest VOC concentrations detected to minimize the risk of mobilizing potential DNAPLs to deeper depths. If VOCs are detected, conductor casing will be installed to the dense sand identified by the CPT refusal. The deep well will be installed using direct mud

rotary drilling methods. The well will be screened at approximately 5 feet above the Yerba Buena Mud (San Antonio Formation). Soil samples will be obtained every 10 feet for lithologic logging and VOC analysis."

In January 1995, the Navy completed this stepwise investigation, and provided analytical results to the agencies. At a January 18, 1995 monthly progress review meeting, the Navy and agencies agreed that the deep wells at Site 4 would be installed as per the May 1994 technical memorandum. Attached to these responses to comments are the analytical results of the HydroPunch® water samples, the soil sample results from installation of the deep monitoring well D04-03, and the groundwater monitoring results for two quarters for D04-03. During the time these tasks were being conducted, several meetings occurred between the Navy and the agencies to reach consensus on the approach. More recently, the Navy has evaluated the analytical data in conjunction with groundwater gradients to evaluate the groundwater flow direction, and whether well coverage was adequate at this site.

Current results of the groundwater monitoring show that the groundwater gradients on the north side of Building 360 are complex, but predominately, the flow is to the west. Well coverage to the west of D04-03 and MW 360-01 appears adequate. The well coverage is shown on the most recent groundwater level map provided in the "Remedial Investigation/Feasibility Study Data Transmittal Memorandum Sites, 1, 2, 3 Runway Area 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16 and 19 - DRAFT" (CTO 280 Data Transmittal Memorandum) dated July 11, 1995.

3. **Comment:** **Section 6.4 Recommendations. This agency would like the Navy to propose a water sample in the presumed down gradient direction (from Figure 4-10) of the trichloroethene (TCE) and xylene detection in well M05-03. TCE was detected at 270 micrograms per liter, and total xylenes was detected at 320 micrograms per liter. It is understood that the soil borings, B05-06 and B05-07, do not detect any of these organic compounds in the soil. However, a water sample in this vicinity would assure control of the organic compound detection observed in well M05-03 in the first quarter of monitoring. Again, if a HydroPunch® sample is taken, it should be conducted in a sandy, water bearing portion of this shallow, fill aquifer.**

Response: According to more recent results of groundwater monitoring, the groundwater gradient in the region of M05-03 is toward Building 5; in this case, the downgradient area has adequate well coverage (see attached Figure 1). The most recent groundwater level map is provided in the "Remedial Investigation/Feasibility Study Data Transmittal Memorandum Sites, 1, 2, 3 Runway Area 6, 7A, 7B, 7C, 9, 10B, 11, 13, 15, 16 and 19 - DRAFT" (CTO 280 Data Transmittal Memorandum) dated July 11, 1995.

RESPONSE TO TOXICS FOCUS GROUP COMMENTS ON THE DRAFT REMEDIAL INVESTIGATION/FEASIBILITY STUDY DATA TRANSMITTAL MEMORANDUM, SITES 4, 5, 8, 10A, 12, AND 14 NAVAL AIR STATION ALAMEDA

This document presents the Navy's responses to comments by the Toxics Focus Group of the Alameda Restoration Advisory Board on the remedial investigation/feasibility study data transmittal memorandum, Sites 4, 5, 8, 10A, 12, and 14, dated May 16, 1995. The comments addressed below were received October 10, 1995.

RESPONSE TO COMMENTS FROM TOXICS FOCUS GROUP

General Comments

1. **Comment:** **No discussion is included on Tentatively Identified Compounds (TICs). Since the original laboratory sheets are not included and no TICs are shown in attachment 3, it is not even possible to determine anything about the prevalence of TICs in any of the samples. With out [sic] a discussion of this information, it is not possible to draw any conclusions about whether or not sufficient information has been collected at any of these site[s]. Please provide a discussion of this issue in the text.**

   Response: The identity and reported concentrations of tentatively identified compounds (TICs) are not typically provided with data summaries. Estimated values of TICs could be orders of magnitude higher or lower than the actual concentrations, and assigned identities could be highly inaccurate because the analytical instrument libraries do not include these compounds. Guidance for addressing TICs is provided by U.S. Environmental Protection Agency (EPA) in the "Risk Assessment Guidance for Superfund. Volume 1. Human Health Evaluation Manual. Part A" (December 1989). This guidance recommends that if relatively few TICs are present, if no historical information indicates a particular TIC was used or could be present, the TICs need not be included in the risk assessment. Alternatively, if TICs are present in large numbers, or if site and historical information indicate use or presence of particular TICs, then these should be evaluated for risk.

   The TICs found in samples collected from NAS Alameda do not occur in large numbers. Their occurrence typically coincides with elevated concentrations of other organic compounds that are positively identified; as such those samples or areas of contamination will be addressed.

   The TICs are kept as part of the Oracle database that will support the development of the remedial investigation/feasibility study reports. Accordingly, occurrences of large numbers or high concentrations of TICs will be reviewed and addressed as needed.

2. **Comment:** **From Figures 3-1 through 3-3, it appears that the "Site" is synonymous**

with the source. This is different from every other project I have worked on. Usually, the Site is the limit of the suspected contamination. Please provide an explanation for how the limits of the site were defined, and how the limits of the areas of investigation were defined.

Response: The sites, as they were initially identified, represent suspected sources of contamination. The iterative investigation of those suspected sources has focused on identifying the extent of contamination emanating from each source.

3. **Comment:** **Numerous times in the text, concentration[s] are defined as being "low". However, no definition of "low" is provided. Either a definition should be provided or a range of maximum level should be added.**

Response: The words "low," "slightly elevated," and "elevated" are used in a comparative way within the document. The text did not, but should have provided definitions for the comparative terms. The data reported in the document will now be carried into the remedial investigation report, and will be compared to regulatory levels and/or risk based levels.

4. **Comment:** **Numerous times, the text states that concentrations of [chemical] X ranged from Y to Z at points A and B, respectively. This is not correct. Two points do not define a range, since a range implies that higher and lower values do not exist. The text should state that concentrations of [chemical] X were found to be Y and Z at points A and B, respectively.**

Response: Comment noted. Data discussed in the remedial investigation report will be treated in this way where appropriate.

5. **Comment:** **It seams [sic] to [sic] early to draw any conclusions. Not only is there the issue of the TICs raised above, but no risk or environmental assessment has been performed. There are several sites at which the outermost samples have detectable concentration[s] of chemicals. Without a risk and environmental assessment to determine that the levels in these samples does not present unacceptable levels of risk.**

Response: Comment noted, it is too early to draw conclusions. The human health and ecological risk assessments are yet to be conducted for the sites discussed in the document. The conclusions from those assessments will guide future decisions.