



## Tetra Tech EM Inc.

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November 8, 2001

Mr. Gilbert Rivera  
Department of the Navy  
Engineering Field Activity, West  
Naval Facilities Engineering Command  
Pacific Plaza  
2001 Junpero Sera Boulevard, Suite 600  
Daly City, CA 94014-1976

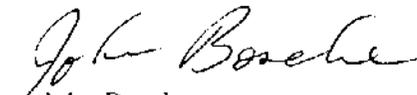
**Subject: Addendum to Draft Final Field Sampling Plan and Quality Assurance Project Plan  
Remedial Investigation for Groundwater at SWMU Sites 1, 2, 5, 7, and 18  
Naval Weapons Station Seal Beach Detachment (SBD) Concord**

Dear Mr. Rivera,

Tetra Tech EM Inc. (TTEMI) prepared the enclosed addendum to the Draft Final Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for the Remedial Investigation for Groundwater at former solid waste management unit (SWMU) Sites 1, 2, 5, 7, and 18, Naval Weapons Station Seal Beach Detachment (SBD) Concord, dated January 23, 2001. The addendum has also been submitted to the U.S. Environmental Protection Agency (EPA), Regional Water Quality Control Board (RWQCB), and the State of California, Environmental Protection Agency, Department of Toxic Substances Control (DTSC).

If you have any questions, I can be reached at (415) 222-8295.

Sincerely,

  
John Bosche

Enclosure

cc: Mr. Phillip Ramsey, US EPA  
Mr. James Pinasco, Department of Toxic Substances Control  
Mr. Laurent Meillier, San Francisco Bay Region, Regional Water Quality Control Board  
Mr. Rudy Pontemayor, Naval Weapons Station SBD Concord  
file

TC.0324.11272

**ADDENDUM**  
**DRAFT FINAL FIELD SAMPLING PLAN AND QUALITY ASSURANCE PROJECT PLAN**  
**REMEDIAL INVESTIGATION FOR GROUNDWATER AT SWMU SITES 1, 2, 5, 7, AND 18**  
**NAVAL WEAPONS STATION SEAL BEACH DETACHMENT (SBD) CONCORD**

This addendum to the Draft Final Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) for the Remedial Investigation for Groundwater at former solid waste management unit (SWMU) Sites 1, 2, 5, 7, and 18 at Naval Weapons Station Seal Beach Detachment (SBD) Concord, dated January 23, 2001, revises the FSP and QAPP for the remedial investigation (RI) of the area. The FSP and QAPP, as revised by this addendum, constitute the proposed method for the investigation of soil and groundwater in support of the RI.

The U.S. Environmental Protection Agency (EPA) entered into dispute with the Navy after the Navy issued the draft final FSP and QAPP. The Navy received comments from EPA on March 13, 2001, and comments from the Regional Water Quality Control Board (RWQCB) on March 14, 2001. The Navy prepared responses to comments dated August 25, 2001. On October 1, 2001, the Navy met with EPA and RWQCB remedial project managers (RPMs) to resolve the dispute and establish the required scope of the field investigation.

Based on discussions with EPA and RWQCB RPMs, it was mutually agreed that the Navy should prepare an addendum to the FSP and QAPP rather than revise and reissue the documents. This addendum outlines all modifications proposed to the FSP and QAPP.

On October 2, 2001, the RWQCB provided comments to the Navy relative to the agreements of the October 1, 2001 RPM meeting. As a result of the RWQCB comments, various details regarding the agreements between the Navy, EPA, and RWQCB have changed and these changes are reflected in this addendum. As a result, this addendum does not precisely reflect all of the agreements of the October 1, 2001 RPM meeting (for a record of the October 1, 2001 meeting agreements, please refer to the Navy's meeting minutes). In addition, the Navy has revised the boring numbers on the attached map, Figure 1 for the sake of clarity.

The State of California, Environmental Protection Agency, Department of Toxic Substances Control (DTSC), was unable to attend the October 1, 2001 meeting, and therefore was not a party to the tentative agreements reached. As a result, this addendum is also intended to outline the Navy's proposals to DTSC for review and comment as necessary.

Following review and approval of this addendum by the agencies, the Navy will begin fieldwork as soon as possible.

The following additions, deletions, and modifications constitute the Navy's proposed modifications to the FSP and QAPP. The following revisions were based on the agreements reached at the October 1, 2001, meeting, the Navy's responses to agency comments dated August 25, 2001, and comments received by the Navy from Mr. Laurent Meillier of RWQCB by email on October 2, 2001.

1. The locations of all borings proposed for the first phase of investigation are presented on the revised Figure 1, which is included as an attachment to this addendum. Except as noted below, the proposed analytical program will remain as described in the FSP and QAPP.

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**(continued)**

Several borings were added, deleted, and moved as a result of separate and joint discussions with EPA and RWQCB. In addition, the boring numbers have been changed.

The Navy's has located the borings on Figure 2-5 of the FSP/QAPP to thoroughly cover the area where release of volatile organic compounds (VOCs) to soil and groundwater was most likely. The Navy does not have information on specific suspected point sources. As can be seen on Figure 2-5, the borings are concentrated near the former and existing locomotive wash rack. These borings, located in an extensive array upgradient of monitoring well MW-10, are intended to provide adequate coverage of the area to evaluate whether contaminated soil remains at the site in sufficient concentration or quantity to act as a source of VOC contamination to groundwater.

If soils contaminated by VOCs are discovered during this proposed investigation, a second phase of investigation that includes step-out borings will likely be required to fill data gaps. If soils contaminated by VOCs are not discovered, a second phase of investigation is not expected unless analytical results for the grab groundwater samples suggest contaminated soils act as a source of contamination to groundwater.

The primary goal of the first and second phases of the investigation is to evaluate whether soils at the site are contaminated by VOCs at concentrations that are acting as a source of groundwater contamination. The goal of the second phase of investigation is to fill data gaps that may become apparent as a result of discoveries from the first phase of investigation.

2. Borings 1, 2, 3, 4, 5, 6, 7, 8, 11, 21, 25, 26, 27, 28, 29, and 30 are proposed for a reduced scope of investigation as described below. See Figure 1 for the location of these borings. The proposed list of borings and the boring numbers have changed since the meeting on October 1, 2001.
  - a. Soil samples in the enumerated borings will be collected as described as in the FSP and will be inspected to describe the materials and visually evaluate whether there are signs of contamination. Soil samples will be screened in the field using a photo ionization detector (PID).

The Navy recognizes a flame ionization detector (FID) is slightly more sensitive than a PID; however, both instruments are capable of detecting low concentrations of organic vapors and of screening samples. In fact, the use of a PID for detecting organic vapors in a headspace analysis of soil samples in plastic bags often results in false positive readings because the instruments detect organic vapors emanating from the plastic bag instead of from the soil sample. Because these instruments measure organic vapors in air, their use for detecting the concentration of organic constituents

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**(continued)**

in soil samples is subject to many variables (including ambient air temperature, intensity of sunlight, volume of soil sample, volume of headspace, and other factors) and is therefore inherently flawed.

Nonetheless, the Navy will screen soil samples to determine if significant vapors are detected in the headspace analysis. Organic vapors that significantly exceed background concentrations will be used as justification for analysis of soil samples for VOCs. Soil samples will be selected for analysis of VOCs based on the judgment of the field staff. No specific numerical criteria will be determined in advance of the fieldwork.

- b. If field observations or field screening indicates contamination, then the soil samples will be sent to the analytical laboratory for analysis of VOCs and total petroleum hydrocarbon as diesel (TPH-d) and total petroleum hydrocarbon as gasoline (TPH-g). If field observation or field screening do not indicate contamination, then the samples will be not be subjected to laboratory analysis.
  - c. One grab groundwater sample will be collected from each of the borings enumerated and will be analyzed for VOCs.
3. All soil samples collected during this investigation will be inspected and screened for evidence of TPH contamination. If evidence of contamination is observed in the field at the time samples are collected, the soil sample will be analyzed for TPH-g and TPH-d.
  4. Soil and groundwater samples from Geoprobe borings 31 and 32 will be analyzed for extractible and purgeable TPH constituents.
  5. Bailers are not the preferred method for collecting groundwater samples, but their use is acceptable. The Navy proposes to use a peristaltic pump.
  6. EPA wishes to oversee portions of the field sampling and may also collect split groundwater samples. As a result, the Navy agrees to notify the EPA in advance of the fieldwork so that appropriate arrangements can be made.
  7. The Navy will collect and analyze water samples from the golf course well, all operational wells numbered MW-1 through MW-14, MWIA-17, and one operational well at Building 178 in a single groundwater sampling event. The Navy will sample the golf course well at a spigot near the wellhead after the well pump has pumped sufficient water to purge the well. Groundwater samples from all wells will be analyzed for VOCs. Only the groundwater sample from well MWIA-17 (located near the former underground storage tanks [USTs] west

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**(continued)**

of Building IA-15) is proposed for analysis of TPH. Wells MW-07 through MW-14 were sampled for four consecutive quarters and analyzed for TPH. No TPH was detected in any of the samples from these wells during any of the four quarterly groundwater monitoring events spanning from February 5, 1999, until October 26, 1999.

8. The Navy will analyze grab groundwater samples for TPH from borings 8, 9, 14, 15, 16, 17, 18, 20, 21, 22, 24, 25, 26, 27, 31, and 32. Samples from other locations are not proposed for analysis of TPH because they either (a) are not close to former industrial operations, (b) are not close to former USTs, (c) are near monitoring wells that have repeatedly been sampled and analyzed for TPH, and TPH has not been detected, or (d) are located close to several other borings where analysis of grab groundwater samples for TPH is proposed.
9. The Navy understands that the former USTs and associated piping located west of Building IA-15 and east of monitoring well MWIA-17 leaked significant contamination to soil and groundwater in the area. The Navy's objective for this investigation does not specifically include delineation of the extent of TPH contamination associated with the former USTs. Although borings will not be sited specifically for this purpose in the current investigation, the Navy intends to analyze all soil and groundwater samples for TPH if they appear to be contaminated with TPH. Although this investigation is not focused on delineation of TPH contamination at Naval Weapons Station SBD Concord, the Navy understands its responsibility in this regard and intends to investigate the area under the Navy's UST program.
10. The Navy plans to analyze groundwater samples in Geoprobe borings 30, 31, and 32 and wells MW-2, MW-7, MW-8, MW-10, MW-13, and MW-14 for the following natural attenuation parameters: chloride, sulfate, methane, ethane, ethane, nitrate, sulfide, alkalinity, iron ( $Fe^{+2}$ ), and manganese ( $Mn^{+2}$ ).
11. The Navy intends to provide accurate horizontal location data for all borings. Accurate data on ground surface elevation for the locations of grab groundwater samples is unnecessary and the Navy does not plan to obtain these data. If additional wells are drilled, the Navy will provide accurate horizontal and vertical location information.
12. The location of underground sewer pipes and utilities will be established from available maps and will be included in the RI report.
13. The Navy intends to perform 3 slug tests in wells at the site to evaluate the hydrogeologic site conditions. Slug tests are tentatively proposed for wells MW-2, MW-8, and MW-10.

## Figure 2-5

This detailed station map has been deleted from the Internet-accessible version of this document as per Department of the Navy Internet security regulations.