



Department of Toxic Substances Control

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HUNTERS POINT
SSIC NO. 5090.3



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May 5, 2000

Commanding Officer
Department of the Navy
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
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Attention: Mr. Richard Marsh

DRAFT DATA QUALITY OBJECTIVES FOR PHASE I GROUNDWATER DATA GAPS INVESTIGATION, HUNTERS POINT SHIPYARD, SAN FRANCISCO, CALIFORNIA

Dear Mr. Marsh:

The Department has completed its review of the above-mentioned document attached to your memorandum dated April 18, 2000. Our comments are provided as follows:

General Comments:

1. The following comments on the data quality objectives (DQOs) presume that agreement can be reached between the Navy and the agencies with respect to the sampling analysis plan and the number and locations of samples, sampling protocols, analytical program, QA/QC, etc.
2. The DQO approach proposed by the Navy is a good effort that serves to focus discussion and facilitate the cleanup process. Many concerns expressed at meetings have been addressed by the DQOs-- for example, an investigation of the B aquifer is included.
3. Dense non-aqueous phase liquid (DNAPL) investigations are not proposed: this is a shortcoming of the DQOs.

Specific Comments:

Section I: Well Condition Evaluation

1. The Department disagrees with Step 7 where it states: "Sampling and measurement locations selected in base-wide groundwater sampling plans will be biased to wells that do not require repair, redevelopment, or replacement." We feel the selection of the location

of sampling and measurements should be independent of the condition of wells. We strongly recommend that well abandonment decisions not to be made until the sampling plan and groundwater remedy is finalized.

2. Agencies should review and approve all well abandonments prior to any action being taken. Documentation should be provided regarding the need to abandon the well.
3. Wells that are abandoned should be replaced unless non-replacement is approved by the agencies.
4. Some well repairs will be required regardless of whether the wells are used for sampling in Phase I.
5. Locks should be provided for all wells.
6. Please provide titles for Section I, II, etc.
7. The well evaluations should be documented and provided to DTSC.

Section II: A Aquifer Potentiometric Surface

1. In addition to all the A-aquifer wells, water level measurements in piezometers and soil gas wells that intersect the water table should be considered.
2. If the data collected is inconsistent with historic data, option 2 (bullet 3) is to create an updated potentiometric map. However, this does not mean the new map overrides the old map but further evaluation is required. Moreover, in all cases, new maps should be provided for each round of sampling. For those areas where water level measurements are inconsistent either with historical data or with nearby data, more than 2 rounds of measurements should be taken. Monthly measurements are recommended (or the installation of pressure transducers as indicated in bullet 3).

Section III: B Aquifer Investigation

1. The B aquifer may need to be considered in the feasibility study even if the concentrations of the contaminants are below regulatory levels of concern. For example, if there is a downward gradient from a contaminated zone in the overlying A aquifer, monitoring of the B aquifer may be required.
2. Continuous coring is required for new wells, to delineate and confirm stratigraphy.
3. In areas of suspected DNAPLs, determination of potential pathways of DNAPL migration should be a stated goal, along with determination of the extent of DNAPL contamination.
4. In addition to chemicals of concern for each plume, wells should be analyzed for groundwater quality parameters and natural attenuation indicators, where appropriate. A

checklist for natural attenuation investigations has already been provided to the Navy by DTSC.

Section IV: A Aquifer/Bedrock: Extent of Contamination

1. As discussed in numerous meetings, A-aquifer contaminant plumes will be retained in the feasibility study (as for the B aquifer: Section III, Step 5, bullet 4). Plume boundaries may extend beyond parcel boundaries.
2. Chemicals of concern (COPCs) are determined on a plume basis (not a per well basis), and include degradation products, etc.
3. The decision rules are generally acceptable but there are occasions in which an exception may be made. For example, if the results of this investigation are significantly different from previous investigations (e.g., a high concentration of a volatile organic compound has disappeared), additional confirmation sampling may be required, or additional investigation to demonstrate that the plume has not migrated.
4. In areas of suspected DNAPLs, determination of potential pathways of DNAPL migration should be a stated goal, along with determination of the extent of DNAPL contamination. For example, well location should consider migration of DNAPLs along impermeable surfaces, as well as groundwater flow direction.
5. Very significant climactic events have occurred since the last sampling (i.e., El Nino), which may have significantly altered flow regimes. For this reason, and to provide better data for remedial decisions, a broad-based sampling is strongly recommended.
6. Sampling of wells within plumes (as well as along plume boundaries) is strongly recommended so that cross sections of contaminant distribution can be prepared. And, sampling of wells within the plumes is necessary to determine whether high concentrations have changed, whether degradation has occurred, or whether the distribution pattern within the plume has changed.
7. What are the additional parameters that may be collected to support remedial decisions and evaluate technologies (Step 7)? It would be useful and instructive to discuss these parameters at this time.
8. In addition to COPCs for each plume, wells should be analyzed for groundwater quality parameters and natural attenuation indicators, where appropriate. A checklist for natural attenuation investigations has already been provided to the Navy by DTSC.

Section V: Soil Gas Investigation

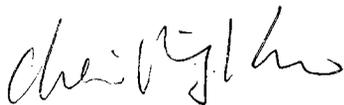
1. The soil gas investigation proposed is limited to the vadose zone above the capillary fringe. However, if the depth to groundwater is too shallow for active soil gas investigations over the entire area of concern, passive soil gas investigation or modeling from

groundwater may be necessary. For example, DTSC generally recommends that the air sampling port should be located at least 3 to 5 feet below ground surface to prevent short-circuiting. This recommendation combined with a thick capillary fringe may limit soil gas sampling locations. To minimize these concerns, the soil gas investigation should be scheduled to occur when depth to groundwater is at a maximum.

2. Flux chamber and air permeability measurements, as well as soil and indoor air sampling, might be required as components of the model validation and calibration.
3. Soil moisture content measurements and other physical parameters may be required.
4. Modeling of new groundwater data may be required.

If you have any questions, please contact me at (510) 540-3822.

Sincerely,



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