



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

JAN 15 1999

Commanding Officer
Engineering Field Activity, West
Naval Facilities Engineering Command
Attn: Mr. Stephen Chao
900 Commodore Drive
San Bruno, CA 94066-2402

Dear Mr. Chao:

Subject: May 1999 Draft Quarterly Groundwater Monitoring Report, dated October 4, 1999

The U.S. Environmental Protection Agency has reviewed the subject report for Moffett Federal Airfield. General and specific comments by our contractor, TechLaw Inc., are enclosed. These comments should be used to guide your preparation of future Quarterly Reports.

In addition, we have enclosed a one page outline of the information we would like to see in future Quarterly Reports, which was originally prepared for the MEW site, but can be used for Moffett as well.

Please contact me if you have any questions regarding our comments at (415) 744-1685. We look forward to your response.

Sincerely,

A handwritten signature in blue ink that reads "Roberta Blank".

Roberta Blank
Remedial Project Manager

cc: Joseph Chou, RWQCB; Edward Dias, Southwest Division; Eugenia Chou, EPA;
Mark Filippini, EPA; Sandy Olliges, NASA; Heike Muller, Techlaw;
Timothy Mower, Tetra Tech; James McClure, RAB

**Review of the Moffett Federal Airfield
Draft Quarterly Groundwater Monitoring Report
Dated October 4, 1999**

General Comments

1. The May 1999 Draft Quarterly Groundwater Monitoring Report (Report) provides only minimal evaluation and discussion of groundwater monitoring results. In addition, only limited displays of water quality trends are attempted (Figures A-3 through A-12), although not all target analytes are assessed in these limited displays. In accordance with the *Final Quality Assurance Project Plan, Long-Term Groundwater Monitoring* [(QAPP) Tetra Tech EM Inc., 1997], the Report should provide documentation that *all* analytical results for *all* wells have been assessed to determine whether the sampling efforts should be expanded, reduced, or modified in any manner. Please, revise the Report to include the required documentation.
2. The Report does not provide any statistical analysis of groundwater monitoring results. Although statistical analysis is not specifically required by the QAPP, the statistical analysis of groundwater monitoring results would provide a valid, objective method of assessing groundwater trends within and between groundwater wells. As is indicated in Figures A-3 through A-12, groundwater results exhibit significant temporal variation within wells. Therefore, claims made in the Report, based only on visual examination of trends may not be statistically accurate when the variation between sampling events is statistically evaluated. It is therefore recommended that applicable EPA guidance on the statistical analysis of groundwater monitoring results (EPA, 1989; 1992), in addition to other relevant statistical texts (e.g., Gilbert, 1987), be utilized in assessing whether the sampling efforts should be expanded, contracted, or modified in any manner.
3. The Report provides limited discussion and assessment of monitoring results obtained for wells in the west-side aquifer treatment system (WATS) and the east-site aquifer treatment system (EATS). As stated above, no statistical analysis of groundwater results was performed on any of this data. In addition, the Report is not clear on whether the limited presentation and evaluation is to serve as the only documentation for groundwater results in the WATS and EATS. Specifically, the Report does not clarify whether the presentation of data is provided to meet specific reporting requirements for the WATS and EATS operation and maintenance (O&M) plans and/or groundwater monitoring plans. In the event that a complete presentation of results for the WATS and EATS is presented in other documents, this fact should be noted in the Report. In the event that the Report represents the only documentation of well data for the WATS and EATS, please revise the Report to provide complete references for the appropriate plans under which the groundwater monitoring is being performed, and document complete adherence to the plans in the Report.

4. The Report does not provide documentation that the groundwater analytical data has been reviewed, verified, and validated according to QAPP requirements. For completeness, please revise the Report to provide documentation that the analytical data has been reviewed, verified, and validated. Applicable quality control summary Reports (QCSRs) should be referenced accordingly.
5. The Report does not provide any tables of field measurements (e.g., pH, conductivity) collected during the sampling effort. According to the QAPP, field measurements were to be collected during groundwater sampling efforts. For completeness, please revise the Report to provide documentation that field measurements were collected during groundwater sampling efforts and include results indicating that the water quality parameters had stabilized prior to sampling.
6. Analytical data from previous sampling efforts are provided in Figures A-1 through A-12. However, the respective sampling reports for these analytical data are not referenced in Section 5.0. For completeness, please revise the Report to provided references for all analytical data presented in the Report.

Specific Comments

1. **Section 2.2, Page 8:** The Report describes various activities performed during the current quarter. However, not enough information is provided regarding those activities. For example, the Report states that an additional soil and groundwater investigation was performed at four locations using GeoProbe technology at the eastern side of AOI 3. However, the Report does not indicate what the purpose of this investigation was, whether an approved work plan was followed and where the results of this investigation will be documented. The same insufficient information was provided for activities performed at AOI 5. For completeness, please revise the Report to discuss activities performed at the Site in more detail, reference an approved work plan and provide information on where the results of these activities will be documented.
2. **Section 2.3, Page 9:** The Report describes the sodium dithionite pilot test, however not enough background information is provided to evaluate the testing activities. For completeness, please revise the Report to provide background information on why the dithionite pilot test is being performed, reference an approved work plan and provide information on where the results of these activities will be documented.
3. **Section 4.1.3, Page 13:** The Report discusses outliers of water elevation measurements. The text states that “it is likely either that survey data for these wells are incorrect, the water level measurement reference point has been modified, or localized conditions are not representative of regional trends.” However, the Report does not suggest how to either remedy the situation (if the survey data are incorrect or the reference point has been modified) or to explain why localized conditions differ from regional trends. To make the collected data meaningful, please revise the Report to indicate whether the wells in question

will be re-surveyed, how the new water level measurement reference points compare to the previously used points, or discuss the difference in hydrologic regime between localized and regional conditions.

4. **Figures 3 through 16:** The figures lack clarity in the display of Site buildings and streets. While the well identifications and locations are clearly legible, the underlying base map is not clearly displayed. Since the location of monitoring wells relative to existing buildings and streets is important for the evaluation of groundwater elevation and quality data, please revise the Report to include figures that clearly show the underlying base map of the Site.

References

Environmental Protection Agency, 1989. *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance.*

Environmental Protection Agency, 1992. *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Draft Addendum to Interim Final Guidance.*

Gilbert, Richard, 1987. *Statistical Methods for Environmental Pollution Monitoring.* Van Nostrand Reinhold, New York.

Tetra Tech EM Inc., 1997. *Final Quality Assurance Project Plan, Long-Term Groundwater Monitoring.*

Attachment A

MEW Facility Specific Progress Reports

Consent Order Companies:

- I. Activities completed during the reporting period
- II. Results of remedial system operations and maintenance, e.g. groundwater and soil vapor extraction and treatment monitoring including:
 - Operating time, reasons for any downtime greater than 24 hours in duration, corrective actions needed to minimize downtime;
 - Extraction rate data including discussion of any significant changes from prior reporting period and from a historical perspective; and
 - Mass of chemicals removed during the reporting period, cumulative to date and trends in concentrations.
- III. Results of groundwater sampling and analyses including analytical results and quality assurance and control sampling.
 - Quality Assurance Report needs to include, at a minimum, quality assurance samples, field blanks, matrix spike/matrix spike duplicates (MS/MSD), duplicate samples, trip blanks, etc.
 - TCE isoconcentration maps.
 - Copies of laboratory reports would be included in EPA's copy
- IV. Results of hydraulic control monitoring including:
 - Assessment of groundwater gradients from outside to inside of slurry wall and between water bearing zones within the slurry wall;
 - Capture zone analysis¹ outside slurry walls [this includes i) the method for estimating the extent of containment, ii) identifiable trends or changes in the capture zones, iii) if water elevations or some wells are not used in contouring, an explanation is needed, and iv) if an extraction well is not operating indicate which well and the reason for it being out of operation];
 - Potentiometric groundwater elevation contour maps.¹
- V. Activities planned for the upcoming reporting period
 - A schedule of activities and submittals by month and date.

¹ Submittal of quarterly potentiometric groundwater elevation contour maps and capture-zone analyses as required by some O&M plans shall continue. EPA may require more frequent reporting if capture is not being maintained.