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N00236.002026
ALAMEDA POINT
SSIC NO. 5090.3

Department of Toxic Substances Control



Arnold Schwarzenegger
Governor

700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721

April 8, 2005

Mr. Thomas L. Macchiarella
Southwest Division Naval Facilities Engineering Command
Attn: Code 06CA.TM
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San Diego, CA 92132-5190

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URAC OFFICE

**DRAFT FINAL REMEDIAL INVESTIGATION REPORT, OU-2A, IR SITES 9, 13, 19, 22
and 23, ALAMEDA POINT, ALAMEDA, CALIFORNIA**

Dear Mr. Macchiarella:

The Department of Toxic Substances Control (DTSC) has reviewed the above referenced remedial investigation (RI) report dated March 3, 2005. We concur with the US Environmental Protection Agency (EPA) that concerns still exist that the nature and extent of contamination is not adequately characterized and the risk has been likely underestimated at each site. Our comments prepared by the Geological Services Unit (GSU) are enclosed.

In order to move the process forward, DTSC agrees that additional work involved with characterization (i.e. data gaps) at OU-2A can be identified in the Feasibility Study (FS) and carried out in the Remedial Design/Remedial Action (RD/RA) phase of the project. Post remediation risk assessment shall then be conducted to affirm that any residual contamination left on site does not adversely impact human health and the environment.

Please consult the attached GSU comments when preparing the FS and factor in data gap sampling in the FS cost estimates. Should you have any questions, please contact me at 510-540-3767 or mliao@dtsc.ca.gov.

Sincerely,

Marcia Liao
Remedial Project Manager
Office of Military Facilities

Enclosure

Mr. Thomas Macchiarella
Page 2
April 8, 2005

cc:

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Arnold Schwarzenegger
Governor

MEMORANDUM

TO: Marcia Liao, Project Manager
Office of Military Facilities
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FROM: Michelle Dalrymple, R.G. *Michelle Dalrymple*
Engineering Geologist
Geologic Services Unit

REVIEWED BY: Stewart W. Black, R.G.
Senior Engineering Geologist
Geologic Services Unit

DATE: April 8, 2005

SUBJECT: REVIEW OF THE DRAFT FINAL REMEDIAL INVESTIGATION
REPORT, SITES 9, 13, 19, 22, AND 23, OPERABLE UNIT 2A (OU-2A),
ALAMEDA POINT, ALAMEDA, CA, DATED MARCH 3, 2005

ACTIVITY REQUESTED

Per your request the Northern California Geological Services Unit (GSU) has reviewed the *Draft Final Remedial Investigation Report for Sites 9, 13, 19, 22, and 23, Operable Unit-2A, Alameda Point, Alameda, California* dated March 3, 2005. The draft final Remedial Investigation (RI) was prepared by Tetra Tech EM Inc. (Tetra Tech) for the U.S. Department of the Navy (Navy), Naval Facilities Engineering Command, Southwest Division. The GSU has reviewed the document with respect to the Navy's responses to GSU's comments on the draft RI report for Operable Unit (OU)-2A dated February 26, 2004. Activities performed included reviewing the response to comments and relevant portions of the draft final RI document as they pertain to the response to comments. The response to comments is contained in Appendix J of the draft final RI report.

PROJECT SUMMARY

The purpose of the RI report is to present the results, conclusions, and recommendations of the RI conducted for CERCLA Sites 9, 13, 19, 22, and 23. These sites are part of the southeastern area of OU-2, referred to as OU-2A. The specific objectives of this RI were to:

- Characterize site conditions;
- Assess the nature and extent of chemical contamination at each site;
- Identify potential pathways for contaminant migration at each site; and
- Assess the risk to human health and the environment.

GSU reviewed and provided comments on the draft RI report dated February 26, 2004, and the report was resubmitted as a draft final document on March 3, 2005. Responses to agency comments are included in the Appedix J of the draft final document.

GENERAL COMMENTS

1. In its review of the draft RI, GSU noted persistent problems with data evaluation and presentation. These problems were not corrected in the draft final RI document. GSU requested that the spatial distribution of soil and groundwater sample locations and depths for each chemical group relative to industrial physical site features (potential and known sources) be provided on the figures. Although maps showing the sampling location by analytical group were provided in the draft final RI report, this information alone is not sufficient to determine sampling adequacy. The maps must also include analytical results and the locations of known or potential sources.

GSU cannot determine if adequate characterization has been performed at each site without site-specific maps of analytical data. The detected concentrations of chemicals should be shown on the maps using insert boxes, spider diagrams, or other appropriate means. GSU would prefer to see analytical results presented for depth-discrete intervals for soil and groundwater. Soil data from the 0 to 2 foot, 2.5 to 8 foot, and greater than 8-foot depth intervals would be useful because these intervals correspond to those that are used for the human-health risk assessment (HHRA). Groundwater data should also be presented by depth-discrete intervals based on hydrostratigraphy (see Specific Comment No. 5 for Site 9). Maps presenting analytical data should provide information regarding elevated detection limits as discussed below in General Comment No. 2.

2. GSU noted persistent problems with analytical detection limits elevated above screening levels in the draft RI report. These problems have not been

adequately addressed in the draft final report. Figures containing analytical results for soil and groundwater should indicate those sample locations for which detection limits exceed the screening levels. This information is important to determine whether sites have been adequately characterized. For simplicity, one suggested format can be to depict the magnitude of the exceedence (such as 2 times, 2 to 10 times, or greater than 10 times the screening level) with colored symbols. Another method that could be used is to provide insert boxes or spider diagrams with the actual value of the exceedence depicted with a "U" qualifier along with detected values for specific chemicals. Whatever method is used to present analytical data, the screening level values should be provided on the maps.

3. It is the opinion of the GSU that the information presented in the draft final RI report is insufficient to rule out the storm and sanitary sewers as potential migration pathways for contaminant transport. Sampling and analyses also appears to have been insufficient to adequately characterize these conduits as potential "historical" sources of contaminant releases to the environment. Rigorous and systematic data evaluation and presentation must be performed to ensure that these sources/potential sources have been adequately addressed (see General Comment No. 1). Pending the results of this additional evaluation, additional environmental sampling adjacent to these conduits may or may not be necessary. Leaking water supply lines should also be evaluated because they will act as a source of recharge to the groundwater and may locally affect groundwater flow and contaminant migration.
4. It is mentioned in the response to GSU General Comment 7(A) on the draft RI report that fate and transport modeling will be conducted during the Feasibility Study (FS). What type of modeling is being proposed? Are there sufficient site-specific data to support the type of modeling being proposed? The regulatory agencies need an opportunity to review the proposed modeling approach as well as any assumptions made regarding model input parameters. Where will this information be provided, and how will the review process be accomplished?
5. In response to GSU General Comment No. 19 on the draft RI report, it is stated that groundwater conditions depicted on Figure 4-15 (which is Figure 4-13 in the draft final document) are being influenced by active remediation at Sites 13 and 23. Please indicate on the groundwater elevation contour maps for OU-2A any active remediation systems and wells so the reviewer can understand anomalous groundwater flow patterns in the vicinity of these operating remediation systems.

It is also stated in this response to GSU General Comment No. 19 that text will be added to describe the active remediation ongoing at Site 23 and its influence on groundwater flow patterns. This discussion does not occur in the draft final RI report. Please include this information in future documents. Please discuss the

type of active remediation systems that are operating at OU-2A, the timeframes/duration of operation, and the effect that these systems are having on groundwater flow patterns.

6. In the response to GSU Comment No. 20 on the draft RI report, it is stated that a table showing vertical hydraulic gradients between the FWBZ and the SWBZ will be presented in the draft final RI report. However, only "example" vertical gradients from the June 2002 data set were included in the table. It is unclear why "example" vertical gradients from the June 2002 data set were used rather than data from the tidally corrected April 2003 monitoring event. Please use tidally corrected data for determination of vertical hydraulic gradients.
7. In the response to GSU General Comment No. 10 on the draft RI report, it is stated that commercial/industrial human exposure scenarios are considered the most likely future exposure scenarios. The GSU questions the source of this information. The Reuse Plan Map presented in the report entitled *Determination of the Beneficial Uses of Groundwater* (Tetra Tech, July 2000) indicates that the planned future use at Sites 9, 13, 19, 22, and 23 is "mixed-use" which may include residential, recreational, industrial, office space, civic space, research and development space, or open space.
8. Data gaps have been identified for each of the OU-2A sites as discussed in the specific comments for each site below. However, please note that a comprehensive list of data gaps cannot be determined due to inadequate data analysis and presentation (see General Comments No. 1, 2, and 3). Once the additional data analysis and presentation has been performed and presented to the regulatory agencies, additional data gaps may or may not be identified. Any subsequent proposed site characterization activities must be clearly outlined in subsequent documents including sampling locations, depths, analytical suite, and rationale.
9. Due to incomplete characterization and/or problems associated with elevated detection limits, it is very likely that the risks for Sites 9, 13, 19, 22, and 23 have been underestimated.

SPECIFIC COMMENTS

SITE 9

1. It is not possible to fully evaluate the adequacy of Site 9 soil and groundwater characterization based on the data evaluation and presentation contained in the draft final RI report. See General Comments No. 1, 2, and 3.

2. Data gaps for Site 9 identified in Section 5.3.2 of the draft final RI report include OWS-410A and OWS-410B. GSU agrees that these oil water separators are data gaps at Site 9. It is stated in the response to GSU Site 9 Comment 1(C) on the draft RI report that the locations of OWS-410A and OWS-410B were inaccurately placed on the maps. The actual location of OWS-410B is stated to be approximately 15 feet north-northeast of monitoring well MW410-3 and 20 feet from DHP-S09-03. It is stated that the Navy will collect coordinate data to correct the figures. GSU agrees that the true coordinates for these features should be identified, and the maps for Site 9 should reflect the actual locations.

In response to GSU Site 9 Comment No. 2 on the draft RI report, it is stated that groundwater near OWS-410B has been characterized and there is no indication that the OWS-410B was the source of release. This statement is apparently based on the fact that the "true" location of this oil water separator is near MW410-3 and DHP-S09-03. However, neither of these sampling locations provides soil analytical data, and only deep groundwater data (24 feet below ground surface) are available from DHP-S09-03. In addition, groundwater data from monitoring well MW410-3 consistently shows low levels of volatile organic compounds (VOCs), including tetrachloroethene, trichloroethene, and cis-1,2-dichloroethene. GSU disagrees that OWS-410B has been characterized and there is no indication that the OWS-410B was the source of release. In fact, the low levels of VOCs detected in monitoring well MW410-3 indicate that it may actually be a source.

OWS-410A and OWS-410B are data gaps that require additional characterization. Additional characterization should include soil and groundwater samples adjacent to and beneath these oil water separators. At a minimum, soil and groundwater samples should be analyzed for metals and VOCs, including 1,4-dioxane.

3. In *Section 5.3.2 – Site 9 Data Quality Assessment* of the draft final RI report, the need for additional soil and groundwater sampling for semivolatile organic compounds (SVOCs) and VOCs due to elevated detection limits is identified. The GSU agrees that elevated detection limits for SVOCs and VOCs are a problem at Site 9. However, it is unclear what is specifically being proposed to address this data gap. Where at Site 9 has the Navy determined that re-sampling should be performed? Specific details regarding investigation of these data gaps such as number, locations, and depths of borings and wells should be provided. Rationale for these sample locations and proposed analytical suite should also be provided.
4. GSU requested in Site 9 Specific Comment No. 6(B) that a value should be used to label concentration contour lines rather than "ND" (not detected). In the response to this comment it is stated that the "ND" line was selected to

demonstrate that the sites are adequately characterized. GSU disagrees that the "ND" line demonstrates that the sites are adequately characterized and finds the "ND" line to be misleading. GSU requests that the Navy consider using a numerical value instead of "ND" for labeling isoconcentration contour intervals.

5. As stated in GSU Site 9 Specific Comment No. 6(C), GSU does not believe that the horizontal and vertical extent of VOCs in groundwater at Site 9 has been thoroughly characterized. In addition, the source(s) of VOCs in groundwater at Site 9 has not been identified and represents a data gap. There is no demonstrated connection between the suspected sources at Site 9 (storm and sanitary sewers) and the distribution of contaminants in groundwater. There is also no explanation provided for the widespread distribution of VOCs in groundwater. There are currently only three monitoring wells at Site 9 and these wells are not located in or downgradient of the areas with the highest known levels of contamination. Without an appropriate monitoring well network, repeatable data cannot be obtained to confirm contaminant concentrations, and migration of contaminants cannot be observed.

In addition, rigorous and systematic groundwater data evaluation needs to be performed for Site 9 including the preparation of depth-discrete isoconcentration contour maps (see General Comment No. 1). Contouring multiple depth intervals on the same map is confusing and does not lead to a meaningful interpretation of the distribution of VOCs in groundwater or migration pathways. Chemicals in groundwater tend to have a logarithmic distribution and it would be more representative of actual conditions to contour each depth-discrete interval logarithmically. Please consider logarithmic interpolation of groundwater analytical data, and/or at least use logarithmically based contour intervals. Lithologic data should be used in conjunction with chemical data to determine if lithology can help to explain how and why VOCs occur in the distribution pattern that is found.

SITE 13

1. It is not possible to fully evaluate the adequacy of Site 13 soil and groundwater characterization based on the data evaluation and presentation contained in the draft final RI report. See General Comments No. 1, 2, and 3.
2. As stated in GSU Site 13 Comment No. 1 on the draft RI report, the GSU believes that a major deficiency for Site 13 is the exclusion of the tarry refinery waste (TRW) in the HHRA. The TRW contains elevated levels of polynuclear aromatic hydrocarbons (PAHs), benzene, and lead and has a pH of less than 2. Exclusion of these data significantly underestimates the risk associated with Site 13.

3. As stated in *Section 6.3.2 – Site 13 Data Quality Assessment* of the draft final RI report, further sampling and analysis of soil and groundwater for SVOCs due to elevated detection limits may be needed. The GSU agrees that elevated detection limits for SVOCs in soil and groundwater at Site 13 are a problem. The GSU also found problems with elevated detection limits for VOCs in groundwater at Site 13.

It is also stated in the same section that additional sampling and analysis of soil for lead, TPH, PAHs, and pH in soil is recommended to further define the boundaries of the TRW. The GSU agrees with the conclusion of the draft final RI that the TRW is a data gap that should be further investigated and characterized.

However, it is unclear what is specifically being proposed to address these data gaps at Site 13. Where at Site 13 has the Navy determined that re-sampling should be performed? Specific details regarding investigation of these data gaps such as number, locations, and depths of borings and wells should be provided. Rationale for these sample locations and proposed analytical suite should also be provided.

4. OWS-397A through OWS-397D are data gaps that require additional characterization. Additional characterization should include soil and groundwater samples adjacent to and beneath these oil water separators. At a minimum, soil and groundwater samples should be analyzed for metals and VOCs, including 1,4-dioxane.

SITE 19

1. It is not possible to fully evaluate the adequacy of Site 19 soil and groundwater characterization based on the data evaluation and presentation contained in the draft final RI report. See General Comments No. 1, 2, and 3.
2. As stated in *Section 7.3.2 – Site 19 Data Quality Assessment* of the draft final RI report, additional sampling and analysis of soil and groundwater for SVOCs due to elevated detection limits may be needed. The GSU agrees that elevated detection limits for SVOCs in soil and groundwater at Site 19 are a problem. The GSU also found problems with detection limits for polychlorinated biphenyls (PCBs) and VOCs in groundwater at Site 19. It is unclear what is specifically being proposed to address this data gap at Site 19. Where at Site 19 has the Navy determined that re-sampling should be performed? Specific details regarding investigation of these data gaps such as number, locations, and depths of borings and wells should be provided. Rationale for these sample locations and proposed analytical suite should also be provided.

3. The solvent storage area in the northwestern portion of Yard D-13 is a data gap that requires additional characterization. Soil and groundwater samples should be collected beneath and adjacent to the storage area. At a minimum, soil and groundwater samples should be analyzed for metals and VOCs, including 1,4-dioxane.
4. As stated in GSU Site 19 Comment No. 6 on the draft RI report, groundwater characterization at Site 19 is incomplete. The VOC plume boundaries should be delineated to levels that are consistent with preliminary remediation goals. Please see Specific Comment No. 4 for Site 9 regarding the use of "ND" to label isoconcentration contours.

SITE 22

1. It is not possible to fully evaluate the adequacy of Site 22 soil and groundwater characterization based on the data evaluation and presentation contained in the draft final RI report. See General Comments No. 1, 2, and 3.
2. As stated in *Section 8.3.2 – Site 22 Data Quality Assessment* of the draft final RI report, further sampling and analysis of soil for SVOCs and of groundwater for SVOCs, VOCs, PCBs, and thallium due to elevated detection limits may be needed. The GSU agrees that elevated detection limits for these constituents are a problem at Site 22 and that additional sampling and analysis is needed. However, it is unclear what is specifically being proposed to address this data gap at Site 22. Where at Site 22 has the Navy determined that re-sampling should be performed? Specific details regarding investigation of these data gaps such as number, locations, and depths of borings and wells should be provided. Rationale for these sample locations and proposed analytical suite should also be provided.
3. Page 8-43 also states that sufficient sampling has not been conducted near OWS-547. The GSU agrees with this statement and considers OWS-547 a data gap that requires additional investigation.

SITE 23

1. It is not possible to fully evaluate the adequacy of Site 23 soil and groundwater characterization based on the data evaluation and presentation contained in the draft final RI report. See General Comments No. 1, 2, and 3.
2. OWS-529 and OWS-530 are data gaps that require additional characterization. Additional characterization should include soil and groundwater samples adjacent to and beneath these oil water separators. At a minimum, soil and

groundwater samples should be analyzed for metals and VOCs, including 1,4-dioxane.

3. As stated *Section 9.3.2 – Site 23 Data Quality Assessment* of the draft final RI report, further sampling and analysis of soil for SVOCs and of groundwater for SVOCs and VOCs due to elevated detection limits may be needed. The GSU agrees that elevated detection limits for these constituents are a problem at Site 23 and that additional sampling should be performed.

It is also stated in the same section that additional sampling and analysis for PCBs in soil is recommended to confirm the presence or absence of PCBs in soil in the mini-storage area. It has been reported that PCB oil was used for weed control in this area until 1963. The GSU agrees that sampling for PCBs should be performed in this area.

However, it is unclear what is specifically being proposed to address this data gap at Site 22. Where at Site 22 has the Navy determined that re-sampling should be performed? Specific details regarding investigation of these data gaps such as number, locations, and depths of borings and wells should be provided. Rationale for these sample locations and proposed analytical suite should also be provided.

If you have any questions, please feel free to contact me at (510) 540-3926 or via e-mail at mdalrymp@dtsc.ca.gov.