



N00236.002033
ALAMEDA POINT
SSIC NO. 5090.3

Department of Toxic Substances Control



Alan C. Lloyd, Ph.D.
Agency Secretary
Cal/EPA

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

Arnold Schwarzenegger
Governor

April 29, 2005

Mr. Thomas L. Macchiarella
Southwest Division Naval Facilities Engineering Command
Attn: Code 06CA.TM
1220 Pacific Highway
San Diego, CA 92132-5190

DRAFT ADDENDUM, FEASIBILITY REPORT, IR SITE 14, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Dear Mr. Macchiarella:

The Department of Toxic Substances Control (DTSC) has reviewed the draft addendum to the Feasibility Study (FS) report for Site 14, dated March 2, 2004. Our comments prepared by the Geological Services Unit (GSU) are attached.

As indicated in the GSU memorandum, many of our concerns have been previously noted in various DTSC comment letters. This addendum appears to have made little effort to address these concerns. We consider this a potential impediment to the process forward and would like the opportunity to meet and discuss these issues.

Our previous comment letters on the draft final FS, revised draft final FS, and draft Proposed Plan, dated April 11, 2003, September 9, 2003, and December 18, 2003, respectively, are attached for reference. 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

Attachments

Mr. Thomas Macchiarella

Page 2

April 29, 2005

cc:

Greg Lorton, SWDiv

Glenna Clark, SWDiv

Anna-Marie Cook, EPA

Judy Huang, RWQCB

Elizabeth Johnson, City of Alameda

Peter Russell, Russell Resources

Jean Sweeney, RAB Co-Chair

Lea Loizos, Arc Ecology



Department of Toxic Substances Control

Edwin F. Lowry, Director

8800 Cal Center Drive

Sacramento, California 95826-3200



Arnold Schwarzenegger
Governor



Terry Tamminen
Agency Secretary
Cal/EPA

MEMORANDUM

TO: Marcia Liao, Project Manager
Office of Military Facilities
700 Heinz Avenue, Suite 200
Berkeley, California 94710

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: May 1, 2005

SUBJECT: REVIEW OF THE ADDENDUM TO THE FEASIBILITY STUDY REPORT
FOR SITE 14, ALAMEDA POINT, ALAMEDA, CALIFORNIA, DATED
MARCH 2, 2005

ACTIVITY REQUESTED

Per your request the Northern California Geological Services Unit (GSU) has reviewed the *Addendum to the Feasibility Study Report for Site 14, Alameda Point, Alameda, California* dated March 2, 2005. The Addendum 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 geologic and hydrogeologic aspects of the document for technical adequacy, data interpretations, and feasibility study approach. Activities performed included reading the addendum and reviewing the file for background information.

PROJECT SUMMARY

A Remedial Investigation (RI) and Feasibility Study (FS) were completed for Site 14 as described in the Final RI Report dated June 6, 2003 and the Revised Draft Final FS Report dated July 25, 2003. Subsequent to the submittal of these reports, the Navy determined that groundwater beneath Site 14 would not be used for domestic purposes.

However, exposure to groundwater via the domestic use pathway was included in the human-health risk assessment (HHRA) presented in the final RI. In addition, the Navy determined that there is a decreasing trend in chlorinated compound concentrations in groundwater at Site 14 based on the most recent rounds of groundwater monitoring. Therefore, the Navy decided to revise the HHRA for Site 14, resulting in the need to revise the remedial action objectives (RAOs). The purpose of the FS addendum is to present changes to the RAOs and to the remedial alternatives that were presented in the revised draft final FS for Site 14 based on this new information.

GENERAL COMMENTS

- A. Based on the Navy's determination that groundwater at Site 14 will not be used for domestic supply, the Navy has revised the HHRA for Site 14 to eliminate this potential exposure pathway. Based on this revision, it was determined that vinyl chloride, through the inhalation pathway (groundwater to indoor air), is the only groundwater risk driver that contributes to a residential cancer risk of greater than 10^{-6} or HI greater than 1. Based on GSU's review of information contained in the final RI report, it appears that vinyl chloride may not be the only groundwater contaminant at Site 14 that poses a potentially significant risk due to the inhalation pathway. Other volatile organic compounds (VOCs) with vapor inhalation cancer risks greater than 10^{-6} comprise trichloroethylene (TCE), 1,1-dichloroethane (1,1-DCA), tetrachloroethylene (PCE), and benzene (see Tables 5-5 and 5-6 of the RI Report). The cumulative risk of these constituents, even in the absence of vinyl chloride, is greater than 10^{-4} (the upper end of the risk management range). In addition, noncancer risks resulting in a hazard index greater than 1 determined in the RI are represented by 1,2,4-trimethylbenzene, cis-1,2-dichloroethylene (cis-1,2-DCE), and vinyl chloride. The highest noncancer risk is posed by cis-1,2-DCE (with a HI of 12).

Clean up goals and RAOs are not proposed for groundwater contaminants other than vinyl chloride in the FS addendum. GSU disagrees with the determination that other VOCs in groundwater at Site 14 do not require RAOs or clean up goals, and feels that the FS addendum lacks supporting documentation for these determinations. **The cumulative cancer and noncancer risk of all VOCs in groundwater should be considered in establishing clean up goals and RAOs. In addition, supporting documentation for any changes to the RI HHRA should be provided in the FS addendum.**

- B. As noted in DTSC's previous comments on the RI and FS, the determination of no further action (NFA) for soil is not warranted. Contaminant sources in soil have not been identified and fully characterized and represent a data gap at Site 14. At a minimum, additional soil sampling is necessary to determine sources of VOCs in groundwater. Another data gap is the determination of the presence or absence of 1,4-dioxane in soil and groundwater. 1,4-dioxane was used as a

stabilizer in many chlorinated solvents. It is possible that 1,4-dioxane was added to the chlorinated solvents that have been found in groundwater at Site 14.

- C. To date, there has also been no investigation of the sanitary sewer line that exits Building 528, passes through the "approximate" area of GAP-9, and transects the upgradient portion of the area of highest concentrations of VOCs in groundwater (hot spot). It is the opinion of GSU that this sewer line may be a source and/or preferential pathway for contaminant migration.

In addition, the RI report is incorrect in its determination that no VOCs were detected above residential soil preliminary remediation goals (PRGs) in soil samples collected from Site 14. One sample collected in the location of the groundwater "hot spot" at a depth of 2 to 3 feet below ground surface (bgs) had a PCE concentration of 2,100 micrograms per kilogram ($\mu\text{g}/\text{kg}$). This result is above the 2002 residential soil PRG of 1,500 $\mu\text{g}/\text{kg}$ that was in effect at the time that the RI report was submitted. This result is also above the current (2004) residential soil PRG for PCE of 480 $\mu\text{g}/\text{kg}$. Based on these facts, the extent of PCE in soil above the PRG has not been defined and is a data gap at Site 14. VOCs, in particular PCE, in soil are also a concern because they were found at levels that may act as a continuing source of groundwater contamination.

The absence of identified sources of VOCs to groundwater, the extent of PCE above PRGs in soil, and the extent of PCE and other VOCs in soil that may impact groundwater in the future represent data gaps. The extent of VOCs in soil must be characterized, and elevated levels of VOCs in soil must be mitigated to prevent the further degradation of groundwater and potential unacceptable human health and ecological risks. The Navy must also demonstrate that VOCs will not migrate to and adversely impact the Oakland Inner Harbor. Finally, GSU recommends investigation of the sanitary sewer (and surrounding soil) as a data gap Site 14, and the addition of 1,4-dioxane to the analytical suite for soil and groundwater. GSU cannot concur with any proposed remedial alternatives for Site 14 until these data gaps have been satisfactory addressed.

- D. It is stated that the FS addendum has been prepared to provide "adjustments" to the RAOs and remedial alternatives that were presented in the previous FS for Site 14. However, the addendum presents a complete revision of the RAOs and remedial alternatives, even eliminating one alternative. The justification for the elimination of previous alternatives 2, 3, and 4, and the rationale for the newly proposed alternatives is not discussed. **Please clarify these revisions.**

The two alternatives proposed in the FS addendum, in addition to the "no action" alternative, are:

- Alternative 2: Monitored Natural Attenuation (MNA) and Land Use Controls (LUCs)
- Alternative 3: In-Situ Chemical Oxidation (ISCO), Monitoring, and LUCs

As stated in the previous DTSC comment letter on the revised draft final FS, if MNA is to be considered a viable alternative for Site 14, it must be demonstrated to be potentially successful with appropriate site-specific data and analyses. These steps have not been taken. In addition, the modeling used to evaluate the natural degradation of chlorinated compounds at Site 14 (BIOCHLOR) is a simplistic two-dimensional screening tool and should not be used to determine the possible success of natural attenuation at Site 14. Please refer to the EPA guidance document Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water (EPA/600/R-981-128) and to DTSC's comments letter on the revised draft final FS report dated September 9, 2003. **Without the site-specific data and analyses necessary to support MNA at Site 14, GSU cannot concur with the MNA/LUC alternative.**

In the absence of the demonstrated probable effectiveness of MNA, the only potentially viable alternative left in the FS addendum is ISCO, monitoring, and LUCs. It is the opinion of GSU that this does not provide a reasonable spectrum of alternatives for consideration. It is possible that other alternatives, including some form of groundwater extraction and aboveground treatment, should be further evaluated. The FS addendum does not present a compelling argument for eliminating groundwater extraction and other potentially effective in-situ remedial technologies (see Specific Comments No. 11 and 12). **Please consider providing further support for the determinations that the selected alternatives are the best choices for Site 14.**

- E. In the FS addendum, it is stated that the results of recent sampling data collected in 2003 and 2004 showed a decreasing trend in chlorinated compound concentrations in groundwater and identified vinyl chloride as the only VOC detected in groundwater at significant enough concentrations to pose a risk. It is unclear how recent groundwater sampling data alone could provide enough information to eliminate certain compounds as risk drivers that were identified in the RI. The actual groundwater sampling data upon which this statement is based are not presented or discussed.

GSU has not seen sufficient evidence to demonstrate that any decline in VOC concentrations at Site 14 is significant. Contaminant concentrations in groundwater are transient and may be influenced by a number of factors including sampling procedures, seasonal fluctuations, and migration. Data from

the Basewide Groundwater Monitoring Program span only two years, and the sampling frequency for the first water bearing zone (FWBZ) monitoring well located in the hot spot (M101-A) is semi-annual. This limited amount of data is not sufficient to establish any meaningful long-term trends. In addition, the levels of PCE and other VOCs detected in soil samples collected from Site 14 indicate that soil will likely act as a continuing source of VOCs to groundwater in the absence of remediation. **Please provide analytical data and supporting evidence for the determination that a decreasing trend in VOC concentrations is occurring. Also, please explain how these data were used to identify that vinyl chloride is the only VOC present at significant enough concentrations to pose a risk.**

- F. Both of the alternatives presented in the FS addendum (other than no action) include the installation of five additional monitoring wells to better define the boundaries of the plume. GSU agrees that additional monitoring wells are necessary to delineate the plume boundaries. GSU also believes that the vertical extent of groundwater contamination is a data gap and should be addressed with additional monitoring wells. **The proposed locations, depths, screened intervals, and rationale for each of the proposed additional wells should be provided in the FS addendum.**
- G. It appears that the FWBZ monitoring well M101-A-OLD which was located in the hot spot at Site 14, is the first well that was installed at the site. Based on sampling dates presented in the FS addendum, it appears that this well was installed in 1991. GSU has questions regarding the placement of this well. Was there any evidence to suggest that this well would be located in an area of contamination, or is it merely a coincidence that this well was located in the hot spot at Site 14. **Please provide the date that this well was installed and the rationale for its placement. Please also provide information on where the supporting documentation can be found.**

Also, as indicated on maps in the FS addendum, it appears that there are two wells designated as M101-A. One of the wells has been given the designation M101-A-OLD. Was M101-A-OLD abandoned and replaced with the new M101-A. If so, when and why did this occur, and where is it documented? **Please clarify.**

- H. The RI report for Site 14 states that Building 26 served as storage for small arms and pyrotechnics. Activities included cleaning small arms machinery using oils and solvents, and storing live ammunition and firearms. In light of this fact, it is the opinion of GSU that the groundwater at Site 14 should be sampled for perchlorate. Perchlorate is a persistent and highly soluble contaminant that is a component of ammunition and explosives. **Please include perchlorate as a target analyte in at least two consecutive groundwater monitoring rounds at Site 14 to establish whether or not this constituent is present.**

SPECIFIC COMMENTS

1. Executive Summary. It is stated in the second full paragraph that this FS addendum demonstrates that each alternative (including a no action alternative) currently is protective of human health and the environment under the anticipated reuse scenario. GSU disagrees with this statement. The "no action" alternative does not appear to be protective because elevated levels of PCE in soil have not been bounded to levels that are below PRGs, and all potential contaminant sources in soil have not been identified or fully characterized (see General Comment B). The lack of well characterized soil contamination and the potential for unidentified contaminant sources in soil to be present at Site 14 has most likely resulted in an underestimation of the risk. In addition, the impact of contaminated groundwater migrating into the Oakland Inner Harbor has also not been evaluated. **Please revise this statement in the Executive Summary and wherever else it occurs in the FS addendum.**
2. Executive Summary and Section 1.1 - Report Purpose and Organization. It is stated in the first paragraph on Page ES-3 and the last paragraph on page 2 that the results of recent sampling data collected in 2003 and 2004 showed a decreasing trend in chlorinated compound concentrations in groundwater and identified vinyl chloride as the only VOC detected in groundwater at significant enough concentrations to pose a risk. It is unclear how recent groundwater sampling data alone could provide enough information to eliminate certain compounds as risk drivers that were identified in the RI (see General Comment D). **Please clarify.**
3. Executive Summary. On page ES-3 it is stated that the revised RAO for Site 14 is to protect hypothetical future residential receptors from the potential risk posed by inhalation of vinyl chloride in indoor air at concentrations that could result from groundwater vinyl chloride concentrations above 15 µg/l. It is the opinion of GSU that this RAO is over-simplified for the complexities of the contamination issues at Site 14. Additionally, vinyl chloride is not the only VOC for which an RAO should be established.

Cumulative risk due to all volatile contaminants in soil and groundwater should be considered (see General Comments A and B). Indoor air risk should be evaluated in accordance with the procedures outlined in DTSC's indoor air guidance. Also, soil contamination has not been characterized to levels below PRGs and remains a data gap. Another RAO should be added which is to prevent further degradation of groundwater beneath Site 14, and to prevent migration of groundwater contamination to Oakland Inner Harbor (see General Comment B).

4. Section 1.1 – Report Purpose and Organization. It is stated that this addendum revises the Site 14 FS based on the results of recent groundwater sampling events and on improvements that were made to the models used in the previous FS for estimating the natural degradation rates of chlorinated hydrocarbon concentrations in the groundwater at Site 14. **Please provide information on how the recent groundwater sampling data were used and also, what improvements were made to the models. Please discuss how these improvements affected the results of the analysis.**

5. Section 1.1 – Report Purpose and Organization. It is stated in the last paragraph on page 2 that “current data at Site 14 was used to determine risk posed to recreational and hypothetical future residents at the site (Appendix B).” It is unclear where the revised risk estimate is presented and how the current data were used. Appendix B only contains information on the development of a risk-based RAO for vinyl chloride. **Please provide the methods and procedures used for, and the results of the revised risk assessment.**

It is also stated in this section (first paragraph on page 3) that the revised risk estimate does not identify 1,2-DCE and PCE as risk drivers because only the ingestion of groundwater with these compounds at the concentrations present at Site 14 would pose a cancer risk greater than 10^{-6} or a noncancer risk above a HI of 1. This information is inconsistent with the Final RI Report, which indicates that 1,2-DCE, PCE, and several other VOCs pose cancer risks greater than 10^{-6} and noncancer HI greater than 1 due to inhalation (see General Comment A). **Please clarify.**

6. Section 1.3 – Summary of Site 14. It is stated in the last full paragraph on page 4 that, “based on the most recent round of sampling conducted in 2004, vinyl chloride is the only chemical of concern at Site 14 that was detected in significant quantities; however, their concentrations in groundwater are within the risk management range for both a recreational and residential land reuse scenario.” **Please provide supporting documentation for this statement. GSU cannot evaluate the accuracy of this statement without supporting documentation.**

It is stated at the end of the same paragraph that the storm sewer system that traverses Site 14 was found to be in good condition and is not considered a pathway for CERCLA constituents. **It should be noted that the sanitary sewer that also traverses Site 14 was not investigated and may actually be a source and/or pathway for contaminants (see General Comment B).**

7. Section 2.0 – Remedial Action Objective, Applicable Relevant and Appropriate Requirements, and General Response Actions. It is stated that this chapter presents the RAO for Site 14, discusses applicable, relevant, and appropriate requirements (ARARs), and presents a limited number of general response actions (GRAs) that could protect human health and the environment from

unanticipated future uses of the site. In that this is an "addendum" to an existing FS document, it is expected that this section only discusses changes to the RAOs, ARARs, and GRAs that were included in the previous document. It would be helpful to the reader to have information indicating if, how, and why the RAOs, ARARs, and GRAs differ from those presented in the original document. **Please clarify.**

8. Section 2.1 – Remedial Action Objectives. It is stated that the RAO was designed to address a risk of 10^{-6} posed to hypothetical future receptors exposed via an inhalation pathway to vinyl chloride in groundwater at Site 14. The reasons for including only vinyl chloride have not been satisfactorily explained. Based on the results of the HHRA presented in the final RI, it appears that other VOCs contribute substantially to risk via the inhalation pathway and should also be considered in the RAO (see Specific Comment No. 1). **Please clarify.**

It is also stated in this section that the RAO for Site 14 is to protect hypothetical future residential receptors from the potential risk posed by inhalation of vinyl chloride in indoor air at concentrations that could result from groundwater vinyl chloride concentrations above 15 µg/l. As stated in Specific Comment No. 3, it is the opinion of GSU that this RAO is over-simplified for the complexities of the contamination issues at Site 14. Vinyl chloride is not the only VOC for which an RAO should be established.

Cumulative risk due to all soil and groundwater contaminants should be considered (see General Comments A and B). Indoor air risk should be evaluated in accordance with the procedures outlined in DTSC's indoor air guidance. Also, soil contamination has not been characterized to levels below PRGs and remains a data gap. GSU believes that another RAO should be added which is to prevent further degradation of groundwater beneath Site 14 and to prevent migration of groundwater contamination to Oakland Inner Harbor (see General Comment B).

9. Section 3.2 – Identification and Screening of Technology and Process Options. It is stated in this section that the sections that follow describe the evaluation of each potential process option identified for each GRA at Site 14. However, there is no subsection for the "monitoring" GRA. **Please revise accordingly.**
10. Section 3.2.3.1 – Pump and Treat. It is the opinion of GSU that the preliminary screening evaluation of the pump and treat technology is not satisfactory. The timeframes and cost presented for this technology are not based on site-specific information. Pump and treat is a proven technology that may be potentially applicable to Site 14. Without site-specific information as to why this technology is screened from further consideration, GSU cannot concur with its elimination. In the absence of the demonstrated effectiveness of in-situ technologies and MNA, an alternative involving some form of groundwater extraction and treatment

may be the only alternative that is effective in achieving the RAOs for Site 14. **Please provide site-specific information regarding the elimination of the pump and treat technology and associated process options, or consider retaining this technology.**

11. Section 3.2.3.3 – ISCO. In this section it is stated that the estimated timeframe to implement ISCO is less than 2 years. In the revised draft final FS it was estimated to be less than 1 year. The timeframe to meet the RAO is an important factor in the preliminary screening evaluation, and is the main reason that ISCO was retained over other potentially effective in-situ technologies such as air sparging and enhanced bioremediation. **Please provide information on how the 2-year timeframe was derived so that the elimination of other potentially effective in-situ technologies can be supported.**
12. Section 3.2.3.7 – MNA. MNA is discussed as a subsection under *Section 3.2.3 – Active Remediation*. In that MNA is not “active” remediation, it should be moved to a different section. **Please revise accordingly. Also, please revise Table 6 with respect to this comment.**

In DTSC’s previous comments letter on the revised draft final FS, several concerns were raised regarding additional data needs to support MNA at Site 14. These concerns have not been addressed in the FS addendum. One concern is that the modeling to evaluate natural degradation of chlorinated compounds at Site 14 (BIOCHLOR) is a simplistic two-dimensional screening tool and should not be used to determine the possible success of natural attenuation at Site 14. If MNA is to be considered a viable alternative for Site 14, it must be demonstrated to be potentially successful with appropriate site-specific data and analyses (see General Comment C). **Without the site-specific data and analyses necessary to support MNA at Site 14, GSU cannot concur that MNA is a viable technology for this site.**

13. Section 4.0 – Detailed Analysis of Alternatives. GSU cannot evaluate the detailed analysis of the revised remedial alternatives presented in this FS addendum because supporting documentation for the revisions to the RAOs and remedial alternatives is inadequate (see General Comments A and C). Also, until data gaps have been addressed, GSU cannot concur with any proposed remedial alternatives for Site 14 (see General Comment B).

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



Winston H. Hickox
Secretary for
Environmental
Protection

Department of Toxic Substances Control

Edwin F. Lowry, Director
700 Heinz Avenue, Bldg. F, Suite 200
Berkeley, California 94710-2721



Gray Davis
Governor

April 11, 2003

FILE COPY

Ms. Glenna Clark
Department of Navy
Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101

DRAFT FINAL FEASIBILITY STUDY REPORT, OPERABLE UNIT 1, SITE 14, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Dear Ms. Clark:

The Department of Toxic Substances Control (DTSC) is in receipt of the above referenced document dated March 14, 2003. Due to the various concerns raised in our comments to the draft final Remedial Investigation (RI) report, DTSC withholds concurrence on the No Further Action recommendation for soil at Site 14. We believe further investigation is needed to conclude with confidence that past naval activities at Site 14 have experienced little or no releases and are unrelated to the groundwater contamination. Please refer to our comments to the draft final RI for details. Should you have any questions, please contact me at 510-540-3767.

Sincerely,

Marcia G. Liao

Marcia Liao, Ph.D., CHMM
Hazardous Substances Engineer
Office of Military Facilities

enclosure

Mr. Glenna Clark
Page 2
April 11, 2003

BRAC OFFICE

2005 MAY 15 P 2:46

cc: Michael McClelland, SWDiv
Andrew Dick, SWDiv
Steve Edde, Alameda Point
Mark Ripperda, EPA
Judy Huang, RWQCB
Charlie Huang, DFG
Elizabeth Johnson, City of Alameda
Peter Russel, Northgate Environmental
Randolph Brandt, LHF
Bert Morgan, RAB Co-Chair
Lea Loizos, Arc Ecology
Craig Hunter, Tetra Tech



Department of Toxic Substances Control



Winston H. Hickox
Secretary for
Environmental
Protection

Edwin F. Lowry, Director
700 Heinz Avenue, Bldg. F, Suite 200
Berkeley, California 94710-2721

Gray Davis
Governor

September 9, 2003

FILE COPY

Mr. Glenna Clark
Department of Navy
Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101

REVISED DRAFT FINAL FEASIBILITY STUDY REPORT, SITE 14, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Dear Ms. Clark:

The Department of Toxic Substances Control (DTSC) has reviewed the revised draft final feasibility study (FS) report for Site 14 dated July 25, 2003. We concur with the Navy that Alternative 2, i.e., monitored natural attenuation (MNA) and land use control (LUC), is a viable remedial alternative for the subject site provided that the following conditions are met:

1. "Acceptable concentrations" for chemicals of concerns (COCs) identified in the groundwater are clearly defined;
2. The presence of natural attenuation is assessed in accordance with EPA guidance document "Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater" (EPA/600/R-981-128), dated September 1998 (see comments below);
3. The cost estimate is revised and reflects more closely the necessary elements of an effective MNA (see comments below);
4. MNA will be developed in accordance with EPA OSWER Directive 9200.4-17P "Use of Monitored Natural Attenuation at Superfund, RCRA Corrective Action, and Underground Storage Tank Sites", dated April 21, 1999 and presented in the Record of Decision (ROD) available for public review and comments.

Mr. Glenna Clark
Page 2
September 9, 2003

Please be advised that the basic premise of the MNA/LUC alternative is based on the occurrence of natural attenuation at Site 14. Currently there is no data provided in this FS report to support this premise. The modeling on which the detailed analysis of alternatives is based (i.e. the degradation of volatile organics to below Maximum Contaminant Levels (MCLs) in 100 years) is a simple two dimensional screening tool called BIOCHLOR. DTSC does not recommend the development of a detailed analysis of alternatives using this screening tool. In addition, a review of the modeling data used in Appendix C of the report indicates the use of very simplistic lithology data and does not contain any specific geochemistry data that would be required for a detailed analysis of the possible success of natural attenuation as a treatment at Site 14. In order to fully assess the presence of natural attenuation at Site 14, DTSC recommends the use of the guidance EPA/600/R-981-128 and appropriate models recommended therein.

Also, please be advised that the level of site characterization necessary to support a comprehensive evaluation of natural attenuation is, in general, more detailed than that needed to support active remediation. DTSC believes site specific characterization more detailed than what has been presented in the remedial investigation (RI) is needed and recommends the following:

- Construct additional monitoring wells to locate the vertical extent of the vinyl chloride plume (The RI reports that vinyl chloride concentrations at the deepest intervals, which are several feet below the boundary of fill and the bay sediment unit (BSU), are still above levels of concern. Therefore the extent of contamination for vinyl chloride has not been determined).
- Establish the condition (e.g. the screen interval) of the 500-ft deep Pan Am well. At least one water sample should be obtained from the well and analyzed for the COCs to determine whether surface or subsurface contamination has reached the water bearing zone or zones screened by this well.
- Analyze the groundwater for 1,4-dioxane and perchlorate to determine the impact, if any, of past involvement with solvent stabilizer and storage of pyrotechnics, ordnance and explosives at Site 14.
- Reconsider the COC identification used in the RI that eliminates from further consideration of chemicals that are an essential nutrient (We disagree with this reasoning as it is possible to have these chemicals, principally metals, at a concentration that may present an ecological risk).

Mr. Glenna Clark
Page 3
September 9, 2003

- Ensure rigorous control on groundwater sample collection (Some previous groundwater samples were taken from vacuum excavation borings completed during the storm sewer investigation, suggesting the results could be biased low).
- Ensure iso-concentration contours illustrate conditions at one point in time (Some iso-concentrations contours shown in the RI were drawn from groundwater data taken four years apart. These contours can be misleading because they do not represent what iso-concentration contours are generally supposed to represent).

Please also be advised that:

- An appropriate MNA should be capable of achieving a site's remedial objective within a time frame that is reasonable compared to that offered by other alternatives;
- MNA sampling should be at least semiannually; sampling once every five years for COCs is not acceptable;
- MNA sampling should include ethane, ethane, methane and pertinent field parameters such as oxidation reduction potential (ORP) and dissolved oxygen (DO);
- Current economic indicators (i.e., Federal Discount Rate) should be used as the discount rate in the cost analysis (Based on current economic conditions, the use of 3.9 % as a discount rate is considered optimistic).

Please note that the above concurrence applies only to the groundwater medium at Site 14. DTSC reserves our concurrence to Navy's recommendation that soil at the subject site requires no further action until RCRA corrective action requirements are fully addressed. Please refer to the RCRA corrective action comment letter to be issued hereafter for the details.

Sincerely,

Marcia Y. Liao

Marcia Liao, Ph.D., CHMM
Hazardous Substances Engineer
Office of Military Facilities

Mr. Glenna Clark
Page 4
September 9, 2003

cc: Michael McClelland, SWDiv
Andrew Dick, SWDiv
Mark Ripperda, EPA
Judy Huang, RWQCB
Charlie Huang, DFG
Mike Kenning, DTSC
Mark Bersheid, DTSC
Elizabeth Johnson, City of Alameda
Peter Russel, Northgate Environmental
Randolph Brandt, LHF
Bert Morgan, RAB Co-Chair
Lea Loizos, Arc Ecology



Terry Tamminen
Agency Secretary
Cal/EPA



Department of Toxic Substances Control

Edwin F. Lowry, Director
700 Heinz Avenue, Suite 200
Berkeley, California 94710-2721



Arnold Schwarzenegger
Governor

December 18, 2003

Ms. Glenna Clark
Department of Navy
Southwest Division
Naval Facilities Engineering Command
1230 Columbia Street, Suite 1100
San Diego, CA 92101

DUPLICATE

DRAFT PROPOSED PLAN, INSTALLATION RESTORATION SITES 14 AND 15, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Dear Ms. Clark:

The Department of Toxic Substances Control (DTSC) has reviewed the draft Proposed Plan for Installation Restoration (IR) Sites 14 and 15 submitted by the Navy on October 2, 2003. It appears that the proposed remedy does not address the concerns DTSC raised in the letter dated September 9, 2003 concerning the revised draft final Feasibility Study (FS) submitted by the Navy on July 25, 2003. In that comment letter, DTSC expressed concerns on Monitored natural Attenuation/Land Use Control (MNA/LUC) and stated that MNA/LUC is a viable remedial alternative only if certain conditions are met.

Specifically, DTSC is concerned that the line of evidence supporting the presence of natural attenuation at Site 14 is relatively weak. The trend graphs, for example, do not conclusively show the occurrence of natural attenuation at Site 14 (see Figures 4-10 through 4-13 and page 4-20 of the RI report). Mann-Kendall statistical test, on the other hand, reports that the concentration of volatile organic compounds (VOCs) at Site 14 has not decreased in the past 10 years (see Appendix C, page C-2 of the FS report). Furthermore, the projected time frame to achieve the remedial objective by natural attenuation (i.e. 100 years) is long, the proposed monitoring scheme (e.g. sampling every five years) is insufficient, and the cost analysis is optimistic. It is DTSC's position that our concerns as detailed in the September 9, 2003 comment letter should be addressed before the MNA/LUC alternative can be considered further.

Ms. Glenna Clark
Page 2
December 18, 2003

Also, please be advised that DTSC is concerned that the final Remedial Investigation (RI) report and the follow-up clarification letter issued by the Navy on June 6 and July 25, 2003, respectively, do not fully meet the requirements of either Chapter 6.8 or 6.5 of California Health and Safety Code (HSC).

Specifically, we are concerned that the source contributing to groundwater contamination at Site 14 has not been positively identified. Most of the explanations or conclusions presented in the RI with respect to the source issues appear to be little more than conjectures. Page 4-20, for example, states "A spill of TCE near the heart of the groundwater plume would explain the presence of vinyl chloride and other chlorinated solvents". It continues to state, "Although VOC data for soil is limited, it is believed that the source of the VOCs in groundwater at Site 14 is gone, and no further sources exist" and "It is expected that any VOC contamination in soil would have migrated to groundwater".

It is our belief that a RI needs to identify, to the extent possible, the source of groundwater contamination. For a given historical spill or release occurred at an area of shallow groundwater (e.g. Site 14), it is possible that little VOC remains in the vadose zone and most contaminants have migrated below the water table into the saturated zone. It is, however, worth noting that migrating below the water table does not automatically mean that all contaminants have left the soil matrix or dissipated into the water column, and the "source" is gone. Usually, it is our understanding that contaminants moving below the water table still stay adsorbed onto the soil matrix. This adsorbed phase continues to act as the source of release through de-sorption and dissipation into the groundwater over time. This process is dictated by the equilibrium between the soil and groundwater and is usually slow especially at an area of low groundwater gradient (e.g. Site 14).

Presently, the RI for Site 14 has provided little evidence that sufficient time has elapsed and VOCs in the soil have all dissipated into the groundwater. It is our opinion that the source (or sources) may still exist, perhaps below the water table, slowly releasing VOCs into the groundwater and natural attenuation may prove elusive if the sources remain unabated.

DTSC requests that a more strenuous case be presented with respect to the source(s) of groundwater VOC plumes at Site 14. We also request that 1) a map be prepared depicting all soil VOC sampling locations and depths, along with pertinent site features (please highlight locations where VOCs were detected or detection limits were elevated (e.g. greater than the PRGs)) and 2) the sanitary sewer along Perimeter Road near monitoring well M101-A be evaluated (e.g. integrity tests of the sewer, sampling of the bed material, and groundwater

Ms. Glenna Clark
Page 3
December 18, 2003

samples) to rule out the possibility that the sewer line may have leaked and contributed to the groundwater contamination.

DTSC looks forward to working with the Navy to resolve the remaining issues in the RI/FS and move forward with the Proposed Plan and final remedy selection. Should you have any questions, please do not hesitate to give me a call at (510) 540-3767.

Sincerely,

Marcia G. Liao

Marcia Liao, Ph.D., CHMM
Remedial Project Manager
Office of Military Facilities

cc: Thomas Macchiarella, SWDiv
Greg Lorton, SWDiv
Anna-Marie Cook, EPA
Judy Huang, RWQCB
Elizabeth Johnson, City of Alameda
Peter Russell, Northgate Environmental
Jean Sweeney, RAB Co-Chair
Lea Loizos, Arc Ecology