DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
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NFD POINT MOLATE
SSIC NO. 5090.3.A

5090
Ser 06CM.FA/315
27 Apr 00

Ms. Linda Dorn
Project Manager
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Subject: RESPONSE TO COMMENTS ON THE SITE 1 DRAFT ENGINEERING EVALUATION/COST ANALYSIS REPORT, NAVAL FUEL DEPOT POINT MOLATE

Dear Ms. Dorn:

Enclosed is the Response to Comments on the Site 1 Draft Engineering Evaluation/Cost Analysis Report for NFD Point Molate. This document has also been provided to Ms. Rebecca Ng of Contra Costa County and Mr. Kent Kitchingman of the City of Richmond. Resolution of these comments is planned for the Site 1 Working Meeting to be held at Point Molate on May 3, 2000 at 1:00 p.m. Please review and contact Ms. Michelle Gallice Sondrup at 619-562-0971 if you have any questions.

Sincerely,

FAIQ ALJABI
Environmental Baseline Team Leader
By direction of the Commander

Enclosure: 1. Response to Comments on the Draft Site 1 Engineering Evaluation and Cost Analysis (EE/CA), Naval Fuel Depot (NFD), Point Molate

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Blind copy to: (w/encl)
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RESPONSE TO COMMENTS
ON THE
DRAFT SITE 1 ENGINEERING EVALUATION AND COST ANALYSIS (EE/CA)
NAVAL FUEL DEPOT (NFD) POINT MOLATE

This document is the Navy's response to comments on the Draft Site 1 Engineering Evaluation and Cost Analysis (EE/CA) for Naval Fuel Depot (NFD) Point Molate, dated October 29, 1999. Comments were received from Ms. Rebecca Ng of Contra Costa Health Services (CCHS), the local enforcement agency (LEA), in a letter dated November 22, 1999, Ms. Linda Dorn of the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) in a letter dated February 1, 2000, and Mr. Kent Kitchingman of the City of Richmond via electronic mail on February 3, 2000.

1.0 RESPONSE TO CONTRA COSTA HEALTH SERVICES COMMENTS

GENERAL COMMENTS

Comment 1: RWQCB must approve Alternative 2 as an acceptable alternative cap. It was stated at the May 4, 1999 meeting that Alternative 2 would be acceptable to the California Integrated Waste Management Board (CIWMB) and the LEA only if the RWQCB would approve it.

Response: RWQCB reviewed and provided comments on the Draft EE/CA, which are addressed in Section 2.0. RWQCB agrees with the Alternative 2 selection.

Comment 2: Closure plans and post-closure plans must be submitted to the LEA, CIWMB, and the RWQCB for review and approval prior to implementation.

Response: The Navy will provide closure and post-closure plans to CCHS (as the LEA), CIWMB, and RWQCB for review. The closure plan will be submitted as part of the engineering design report and the post-closure plan will be submitted after construction is complete.

Comment 3: Removal of brush and debris from the site should include any metal debris on the site and within close proximity to the site that may affect the grading and integrity of the compacted soil cap.

Response: The Final EE/CA will state that brush and debris will be moved so that they do not affect grading or compaction of the soil cover.

Comment 4: Compaction testing must be conducted on the placement of the three feet of clean, compacted soil. The soil should be compacted, 85 – 90% relative compaction.

Response: Compaction specifications and geotechnical testing protocol will be included in the engineering design report. A minimum 85 percent relative compaction will be specified in the engineering design and the Final EE/CA.

Comment 5: Gas monitoring should be conducted during post-closure maintenance on a minimum of once a quarter for the first three years. Should the findings indicate that gas emissions

are within the acceptable range the gas monitoring could be reduced to twice a year or annually.

Response: A soil gas survey of the Site 1 landfill was conducted in January 2000, prior to finalizing the EE/CA, as outlined in a letter to Mr. Timothy Crist, CIWMB, dated November 18, 1999. Although methane was not detected in the samples submitted to the laboratory for analysis, methane was detected with field instrumentation exceeding 5 percent by volume in groundwater monitoring wells. Consequently, the Navy will plan methane gas monitoring as part of Alternatives 1, 2, and 3, and methane gas venting as part of Alternatives 2 and 3. This information will be included in the Final EE/CA.

Comment 6: Groundwater monitoring should be conducted under the direction of the RQWCB.

Response: RWQCB provides oversight of groundwater monitoring being conducted at Site 1.

Comment 7: Land use of the site is under the oversight of the planning department, Contra Costa Community Development Department (CCCDD) or the Richmond Planning Department. Conditions on land use should be included in the land use permit.

Response: Land use controls will be discussed in detail in the Action Memorandum (AM) for Site 1.

Comment 8: The LEA does not enforce deed restrictions. The LEA will conduct annual inspections of the closed site for post-closure maintenance for compliance with local, state, and federal laws and regulations governing closed landfills.

Response: The Navy will determine deed restrictions as part of the AM for Site 1. Deed restrictions will run with the land and therefore bind the new property owner to these restrictions.

Comment 9: An easement allowing the LEA, the CIWMB and the RWQCB access to the property for inspections and monitoring should run with the deed.

Response: The Navy agrees that these agencies should have rights of access to the property for inspections and monitoring.

Comment 10: CCHS that the LEA is part of, will review and oversee applications of well construction permits. CCHS controls the construction of a drinking water well in this capacity.

Response: This information is valuable in that it signifies that CCHS can prevent well construction within the footprint of the proposed landfill cover.

Comment 11: The review of the information packet on Point Molate, the Draft EE/CA, and the attendance to the May 4, 1999 meeting has been conducted gratis. LEA costs for review of the closure plans and post-closure plans and relevant correspondence will be invoiced to the Navy pursuant the Federal Facilities Act at the current rate of $109.00 per hour.

Response: The Navy appreciates the LEA's support with this project to date. The Navy will review existing reimbursement agreements and pay LEA costs, as appropriate.

Comment 12: The ultimate property owner will be responsible to pay fees to cover the cost of the LEA inspections during post-closure maintenance.

Response: LEA reimbursement information will be added to the Final EE/CA.

2.0 RESPONSES TO REGIONAL WATER QUALITY CONTROL BOARD COMMENTS

The RWQCB submitted the following general comments as one comment. For ease of responding to the various issues within this comment, it has been divided into eight comments. The content of the comment was not altered.

GENERAL COMMENTS

Comment 1: This Draft EE/CA appears to be a hybrid of the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process, EPA Presumptive Remedy process, and California's Corrective Action Process under Title 27 California Code of Regulations (CCR). The Navy's reason for hybridizing these cleanup and remediation processes is to expedite the cleanup process at Point Molate. The problems generated by combining these processes are:

Confusing terminology regarding action, such as removal, containment, and corrective action; and a risk assessment not completed to determine if the chemicals of concern pose a threat to human health and the environment.

Response: The Draft EE/CA follows EPA and Navy Guidance on Conducting Non-Time Critical Removal Actions under CERCLA, EPA's landfill presumptive remedy guidance, and state applicable or relevant and appropriate requirements (ARARs).

As defined by EPA, a removal action includes "...actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of a release." A removal action does not necessarily mean physical removal of a contaminant. Containment alternatives are some of the many removal action alternatives. The presumptive remedy for a landfill is containment. This information will be more clearly stated in the Final EE/CA. References to a corrective action have been removed from the Final EE/CA.

The decision to not conduct a risk assessment prior to selection of a removal action alternative at Site 1 was based on EPA's landfill presumptive remedy guidance. In addition, the EE/CA was prepared following the approach determined during the June 1998 NFD Point Molate strategy meetings. These meetings included the Navy, EPA, and RWQCB. The removal action should eliminate exposure pathways to disposed debris and contaminated media within the landfill. This will be more clearly stated in the Final EE/CA.

Comment 2: Regional Board staffs' understanding of the development of the Draft EE/CA is based on historical Base Realignment and Closure (BRAC) Cleanup Team (BCT) discussions that focused on a "removal" action for the landfill. The assumption historically was the waste material would be excavated and a risk assessment could be postponed until after the removal action (similar to Installation Restoration [IR] Site 2, the Sand Blast Grit Area).

Response: In June 1998, the Navy, EPA, and RWQCB met to develop a strategy for the environmental sites at NFD Point Molate. The fast-track strategy agreed upon for Site 1 was to follow the removal action process by evaluating the presumptive remedy (i.e., containment) in an EE/CA and collecting data during the remedial investigation (RI) that would support an EE/CA.

The decision to not conduct a risk assessment prior to selection of a removal action alternative at Site 1 was based on EPA's landfill presumptive remedy guidance. In addition, the EE/CA was prepared following the approach determined during the June 1998 NFD Point Molate strategy meetings. These meetings included the Navy, EPA, and RWQCB. The removal action should eliminate exposure pathways to disposed debris and contaminated media within the landfill. This will be more clearly stated in the Final EE/CA.

Comment 3: On May 4, 1999 the Navy met with CCHS and CIWMB to discuss options for closing/cleaning up the site. Both the CIWMB and CCHS agreed a soil cover would be appropriate to protect human health and safety. Representatives from both agencies stated the Regional Board oversees water quality issues relating to impacts from landfills.

Response: The May 4, 1999 meeting was conducted in an effort to streamline the development of the Site 1 EE/CA. RWQCB and EPA were invited to attend the May 4, 1999 meeting, but declined the invitation. Representatives from CCHS and CIWMB identified that the RWQCB is responsible for evaluating the closure of Site 1 with regard to water quality.

Comment 4: Regional Board Order 97-125, task 3a, required a Corrective Action Workplan for the Landfill, with a due date of March 1, 1999. The Draft EE/CA fulfills the task 3a requirements. Cleanup levels for chemicals of concern were not proposed, and a risk assessment has not been completed, therefore it is difficult to determine if the action will meet water quality objectives and be protective of human health and the environment.

For chemicals of concern that do not have numerical values as listed in the San Francisco Bay Regional Water Quality Control Board Basin plan, site specific numbers can be developed. The Draft Fuel Product Action Level Development Report as required in Regional Board Order 97-125, task 5a, should have proposed site-specific Total Petroleum Hydrocarbon (TPH) cleanup numbers for groundwater and surface water, which could be applied as numerical cleanup levels at IR Site 1, once accepted by the Regional Board. Site specific cleanup levels for TPH for surface water and groundwater have not been developed. Therefore a secondary Maximum Contaminant Level (MCL) for TPH as diesel of 100 ppb (Regional Water Quality Control Board Central Valley Region, a Compilation of Water Quality Goals, March 1998, Marshak, J.) will be applied as a cleanup level for TPH. Therefore, groundwater remediation must be considered and a discussion of groundwater remediation must be included in the discussion of each alternative.

Response: The decision to not conduct a risk assessment prior to selection of a removal action alternative at Site 1 was based on EPA's landfill presumptive remedy guidance. In addition, the EE/CA was prepared following the approach determined during the June 1998 NFD Point Molate strategy meetings. These meetings included the Navy, EPA, and RWQCB. The removal action should eliminate exposure pathways to disposed debris and contaminated media within the landfill. This will be more clearly stated in the Final EE/CA.

The groundwater immediately downgradient of Site 1 will be monitored under the alternative selected in the AM. Groundwater results far downgradient of Site 1 (for example, at well MW02-07) show contamination as a result of releases from the fuel distribution system. This will be more clearly stated in the Final EE/CA report.

As agreed upon at the February 3, 2000 BCT meeting, groundwater contamination downgradient of Site 1 that is contaminated as a result of the fuel distribution system will be addressed in the underground storage tank (UST) corrective action plan.

The alternative recommended in the Draft EE/CA will be protective of groundwater and potential receptors by reducing infiltration, prohibiting well construction, and providing future groundwater monitoring. The soil cover alternative will reduce surface water infiltration into the waste by diverting surface water run-on into ditches, compacting the soil cover, enhancing surface water run-off by grading the soil cover, and increased evapotranspiration as a function of the vegetative layer. The deed restrictions will prohibit construction within the landfill cover, including construction of wells in the waste, therefore preventing exposure to this groundwater. Groundwater monitoring will be conducted to assure protection of potential downgradient receptors.

Comment 5: The site does not have an appropriately placed and screened groundwater monitoring well to characterize the leachate from the landfill. In July through November 1999 Regional Board staff, the Navy, and the Navy's contractors discussed a well installation in the colluvium at the toe of the landfill to provide data regarding contaminant concentrations leaching from the landfill. To measure contaminant concentrations leaching from the landfill groundwater sampling and monitoring should occur immediately downgradient of the current toe of the landfill. Whether the contaminants are from valve box 7, that have entered the landfill material or the landfill oily sludge is irrelevant, because once a waste enters the landfill it is considered a part of the landfill. Therefore the Final EE/CA will need to recommend a well installed at the toe of the landfill for monitoring purposes. Additionally the Final EE/CA should outline what measures will be taken to clearly identify the current toe of the landfill to accurately place a well after the selected remedial alternative is in place.

Response: Boring logs for wells MW02-13 and MW02-15 (both downgradient of Site 1) indicate that no saturation was identified in the colluvium, therefore these wells were screened where water was present (that is, the wells were screened at the contact with weathered bedrock).

At the April 5, 2000, working meeting the Navy agreed to install a well in the colluvium at the toe of the landfill before the construction of the soil cover. Installation of this well is scheduled for June 2000. The Final EE/CA will state that a well was installed at the toe of the landfill for monitoring purposes (if results are available, they will also be included in the Final EE/CA).

Comment 6: Analytical results of groundwater collected from well MW02-15 and the surface water at the toe of the landfill should be included on a map in the Final EE/CA report. Isoconcentrations contours of soil and water contamination should be completed to easily depict the areas of contamination at the landfill and downgradient of the landfill.

Response: Groundwater data for samples collected from well MW02-15 and the surface water seep will be included on the groundwater data figure (Figure 6) in the Final EE/CA.

Isoconcentration maps of contaminant concentrations in groundwater will be developed and included in the Final EE/CA on Figure 6.

Isoconcentration maps of contaminant concentrations in soil are not included in the EE/CA because 1) Soil data presented in the Phase II RI Report indicate areas with and without petroleum contamination and 2) Landfills, by the nature of disposal, are highly heterogeneous and will not show gradational contamination.

Comment 7: Public participation in the selection of the final remedy for this landfill is essential. The remedy selection for the landfill has been discussed as interim, but in reality the remedial action will be a final remedial action. Therefore, a public meeting should be conducted before the final version of the EE/CA is completed.

Response: The Navy agrees that public participation is essential, and held a public meeting on March 1, 2000. A public notice was displayed in the West County Times on February 16, 2000 and a public mailing was distributed on February 17, 2000. This notice and mailing announced the timeframe of the public comment period, the location of the public meeting, and the availability of the environmental documents located in the Information Repository.

As stated in Section 3.2 of the Draft EE/CA, this action is meant to outline the final action for Site 1.

Comment 8: A water balance equation for explaining the recharge, discharge and storage capacity of the aquifer should be evaluated to verify a soil cover is the appropriate remedy for the landfill. For example if 95 percent of the water is entering the landfill from the surface and 5 percent of the water in the landfill is groundwater entering from the subsurface at the head of the landfill then an impermeable cap may be a more appropriate remedy than the soil cover. Considering the amount of data previously collected for groundwater elevation and groundwater flow velocities at IR Site 1 the information is available to compute a water balance for the landfill and ravine and relate the results to the most appropriate remedy selection.

Response: Although a low-permeability cap would reduce groundwater infiltration, it would be unnecessary because the waste is already saturated. The soil cover alternative will reduce surface water infiltration into the waste by diverting surface water run-on into ditches, compacting the soil cover, enhancing surface water run-off by grading the soil cover, and increased evapotranspiration as a function of the vegetative layer. Because the waste is already saturated and groundwater will continue to flow through the landfill, reducing infiltration will not eliminate groundwater. Therefore, the low permeability cover does not provide additional protectiveness and conducting a water balance would not be feasible or provide a benefit to alternative selection.

SPECIFIC COMMENTS

Comment 1: Section 1.0, Introduction, The second paragraph states the Draft EE/CA was distributed to the USEPA and the cover letter does not indicate the USEPA received a copy. The USEPA requested copies of all correspondence and reports even though the Department of Defense did not include funding for the USEPA regulatory review. The USEPA would like to have the opportunity to review documents and correspondence for Point Molate, and the USEPA will review the Draft EE/CA for the landfill. Comments on the Draft EE/CA will be provided through Regional Board staff or directly from the USEPA.

The last sentence of the second paragraph indicates after a revised draft, a public notice will appear in the Richmond Post that this document is available for review. The landfill

remedy is most likely to have the greatest amount of public interest, considering the long-term implications of the selected remedy. Therefore, Regional Board staff are recommending a public meeting be held, and advertised in local newspapers, and/or other forums, that are appropriate to inform the greatest amount of citizens about the meeting, to discuss the selected remedial alternative and seek public input, before finalizing the document. Regional Board staff is considering the Final EE/CA similar to a Proposed Plan developed after a Feasibility Study, and should include the same level of public participation.

When did the planning period begin for the Draft EE/CA, when the Navy awarded the contract to prepare the document or when the 1994 Phase I Investigation recommended a Draft EE/CA be completed for the landfill?

The Navy should request the Local Agency to verify that the EE/CA will satisfy CEQA requirements.

The second paragraph of page two again states the USEPA is providing Federal Regulatory support and will work with the EPA to implement the removal action. The USEPA was not provided funding in the 99/00 fiscal year to provide regulatory support functions at Point Molate.

Did the Navy publish an article in the local newspaper(s) notifying the public the draft EE/CA and Administrative Record are available for review?

Response: The Navy has provided the EPA with a copy of the Draft EE/CA for their review, and will provide EPA with future relevant environmental restoration documents.

The Navy agrees that public participation is essential, and held a public meeting on March 1, 2000. A public notice was displayed in the West County Times on February 16, 2000 and a public mailing that was distributed on February 17, 2000. This notice and mailing announced the timeframe of the public comment period, the location of the public meeting, and the availability of the environmental documents located in the Administrative Record and Information Repository. All comments received from the public before the end of the public comment period will be addressed and summarized in a responsiveness summary that will be included as an appendix to the Final EE/CA.

The planning for the Site 1 Draft EE/CA began with the May 4, 1999 kickoff meeting with the CIWMB and CCHS. RWQCB and EPA were invited to this meeting, but declined to attend.

CEQA is a state program. The RWQCB has exemption from CEQA under the Clean Water Act, but since DTSC is not involved at this site, RWQCB should decide how they want to address CEQA.

The involvement of the EPA in development of the EE/CA will be accurately described in the Final EE/CA.

Comment 2: Section 2.1.2, Site Description, To allow public and regulatory review to happen easily please state how the estimated volume of fill was calculated instead of referring to the document where it was calculated.

How much additional debris was identified outside of the Site 1 footprint? Please identify the additional debris on Figures 2, 3, 4, 5, and 6.

Response: Data from soil borings and trenches were compiled to estimate the thickness of fill overlying native materials. An isopach map was created to portray this fill distribution and thickness. These isopachs were generated with computer aided drafting software that was used to make an estimate of the fill volume. This information will be included in the Final EE/CA.

A conservatively estimated 1,500 cubic yards of additional debris is distributed downslope of the landfill footprint. In addition, minor amounts of surface debris (such as a tire and a concrete block) have been observed upslope of the landfill. The exact distribution of the additional debris is not completely defined at this time. This debris will be excavated and combined with the landfill or hauled off-site under the recommended alternative. The Final EE/CA will reflect this information. This additional debris will be shown on Figures 3 through 6. Figure 2 is a site location map showing only the location of Site 1 relative to the entire facility and the additional debris will not be added to this figure.

Comment 3: Section 2.2.1, Geology, On page 5, the third sentence, discussing bedrock, states, "Fractures are closed or healed with quartz and oxidation products." The implication is that vertical migration of water or contaminants would not occur because the fractures are "sealed". The bedrock boring log for core BR02-20, located downgradient of the landfill does not indicate any quartz sealing, only clay partings as weak zones. The boring log for BR02-18, located immediately upgradient of the landfill, indicates a conglomerate overlying mudstone with "remnants of highly plastic clay parting material", and "some milky white quartz filling in fracture planes up to ¼" thick." Oxidation products of limonite and manganese indicate weathering products that formed in-situ, and do not indicate the rock is not permeable. Please revise this statement to more accurately reflect the boring logs and the geology/hydrogeology of the site.

What is the geologic implication and significance of slickensides being present on the many fracture surfaces?

Response: Bedrock cores at NFD Point Molate and the adjacent Chevron property have all shown low primary permeability. The mudstones and sandstones are well indurated and cemented, and the effective permeability is nearly all attributed to secondary porosity (fractures). The majority of fractures are filled with secondary minerals (oxidation products, precipitated minerals and clays), further reducing permeability. Groundwater production in bedrock wells, on both properties, has been low. Additionally an upward gradient exists at the site, further reducing the potential migration of light nonaqueous fuel contaminants. However, groundwater has been observed and sampled from a shallow bedrock well at the toe of Site 1. This will be more clearly discussed in the Final EE/CA.

The geologic implication of slickensides on the fracture surfaces indicates movement across these surfaces in the geologic past. Nonetheless, this is not an indication of potential for future movement. This will be stated in the Final EE/CA.

Comment 4: Section 2.2.2, Hydrogeology, Please discuss the hydrologic relationship between the water elevation in BR02-18 and the artesian groundwater conditions at the toe of the landfill. Please include the fact wells MW02-13 and BR02-19 are screened in bedrock.

Response: Groundwater at well BR02-18 is under unconfined water table conditions that may be located in a groundwater recharge area for the groundwater found at wells MW02-13 and BR02-19. Groundwater from well BR02-18 to wells MW02-13 and BR02-19 is

influenced by a local, steep gradient. The colluvium underlying the landfill exhibits low hydraulic conductivity, likely providing a semi-confining layer that inhibits groundwater migration. This layer would also cause the artesian conditions at wells MW02-13 and BR02-19, which are screened in bedrock This information will be included in the Final EE/CA.

Comment 5: Section 2.3, Surface Water, Please include on Figure 3 the surface water seep located immediately at the toe of the landfill. A discussion of the hydrogeologic conditions and circumstances producing this seep would be helpful.

The last sentence of the section should include the landfill as a source affecting groundwater and surface water (as seeps). The Navy and Regional Board staff do not agree on this aspect primarily because the necessary data has not been collected, i.e. a groundwater sample from a well completed in the colluvium at the toe of the landfill, in the seep area, to demonstrate what impact the landfill has on water quality immediately downgradient of the landfill. Regional Board staff and the Navy cannot agree a well in this location will provide the data to indicate whether or not the landfill is a source affecting groundwater. Regional Board staff considers any waste material from the surrounding UST system that has entered the landfill as part of the landfill and therefore a source of contamination from the landfill.

Response: The surface water seep will be included on Figure 3. Although this seep was originally identified as one of nine ephemeral seeps, surface water has been observed at this location throughout most of 1999. However, water has been observed seeping from the ground at this location only during the rainy season. The data from this seep location is presented in the Draft EE/CA and will also be presented in the Final EE/CA. In addition, the observation of puddles of water at this seep location throughout most of the year will be noted in the Final EE/CA. Additional description of surface water at the toe of Site 1 will be included in the Final EE/CA.

The groundwater immediately downgradient of Site 1 will be monitored under the alternative selected in the AM. Groundwater results far downgradient of Site 1 (for example, at well MW02-07) show contamination as a result of releases from the fuel distribution system. This will be more clearly stated in the Final EE/CA report.

In addition to releases from the UST system, the landfill will be identified as a potential source of contamination in Section 2.3. The Navy agrees that once disposed materials within the landfill become contaminated, these materials may themselves be a source.

At the April 5, 2000, working meeting the Navy agreed that a well installation in the colluvium at the toe of the landfill would be completed. Installation of the well is scheduled for June 2000. The Final EE/CA will state that a well was installed at the toe of the landfill for monitoring purposes (if results are available, they will also be included in the Final EE/CA).

Comment 6: Section 2.5, Source, Nature, Extent of Contamination, Please clarify the difference between removal action alternatives as stated in the introduction and containment as a presumptive remedy.

Response: The Draft EE/CA follows EPA and Navy Guidance on Conducting Non-Time Critical Removal Actions under CERCLA, EPA's landfill presumptive remedy guidance, and state ARARs.

As defined by EPA, a removal action includes "...actions as may be necessary to prevent, minimize, or mitigate damage to the public health or welfare or to the environment, which may otherwise result from a release or threat of a release." A removal action does not necessarily mean physical removal of a contaminant. Containment alternatives are some of the many removal action alternatives. The presumptive remedy for a landfill is containment. This information will be more clearly stated in the Final EE/CA.

Comment 7: Section 2.5.1, Soil, Isoconcentration maps of contaminants in soil would provide readers with a quick, clear, view of contaminant hot spots. Please provide soil isoconcentration maps in a Final EE/CA.

Response: Isoconcentration maps of contaminant concentrations in soil are not included in the EE/CA because 1) Soil data presented in the Phase II RI Report indicate areas with and without petroleum contamination and 2) Landfills, by the nature of disposal, are highly heterogeneous and will not show gradational contamination.

Comment 8: Section 2.5.2, Groundwater, Isoconcentration maps of contaminants in groundwater would provide readers with a quick, clear, view of contaminant hot spots. Please provide groundwater isoconcentration maps in a Final EE/CA.

Please show the concentrations of groundwater contaminants increasing in wells downgradient on Figure 6. When stating that contaminant concentrations increase between the end of the disposal area and downgradient wells are bedrock wells being compared to bedrock wells, and colluvium wells being compared to colluvium wells?

The word "may" could be eliminated from the first sentence of the second paragraph by installing a well in the colluvium at the toe of the landfill, collecting a groundwater sample, and analyzing that sample for petroleum constituents and PAHs. Well MW02-13 is not representative of contaminants migrating out of the disposal area. The well is screened in bedrock as shown in cross section and documented in the boring log in the Draft Phase II RI report. An upward vertical gradient exists as noted in the artesian conditions mentioned in the Hydrogeology section. The colluvium at the toe of the landfill is the area to measure contaminant concentrations to verify what contaminants are leaching, and migrating, out of the landfill.

The California drinking water standard for vinyl chloride is <0.5 parts per billion (ppb), which is the detection limit, therefore any concentration in groundwater exceeds drinking water standards. Please state what the vinyl chloride concentration is that was detected instead of saying a low level was detected.

The landfill does not appear to be as significant a source of ravine groundwater contamination that enters the Bay as the UST and pipelines, but groundwater does surface as a seep and potential terrestrial receptors exist. Also, the Point Molate Reuse Plan, March 1997, identifies approximately up to the toe of the landfill as light industrial and single family residential (Figure 7: Conceptual Land Use Plan). Future receptors and potential exposure pathways to contaminated groundwater and surface water must be

considered. Additionally the aquifer meets the USEPA and Regional Board standards to be considered a potential source of drinking water. The groundwater ingestion pathway may not have to be evaluated as an exposure pathway for human receptors, but this groundwater must be recognized as a future water resource that must meet water quality objectives as stated in San Francisco Bay Regional Water Quality Control Plan (Basin Plan).

What institutional controls are currently in place?

Response: Isoconcentrations of groundwater contaminants will be developed and evaluated and included in the Final EE/CA.

Figure 6 will be modified to show groundwater data to well MW02-07 at the base of the ravine. Data from wells downgradient of the landfill in weathered bedrock and colluvium are being compared to data from well MW02-06, which is within the waste. Conditions at well MW02-06 show the worst-case contamination from the landfill as a potential source.

At the April 5, 2000, working meeting the Navy agreed that a well installation in the colluvium at the toe of the landfill would be completed. Installation of the well is scheduled for June 2000. The Final EE/CA will state that a well was installed at the toe of the landfill for monitoring purposes (if results are available, they will also be included in the Final EE/CA).

The detection of vinyl chloride is suspected not to represent groundwater contamination because it was detected only one time, both up- and down-gradient of the landfill during the same sampling event, and at low levels. Figure 6 shows the concentrations at which vinyl chloride was detected (0.7 micrograms per liter [µg/L] in well BR02-18 and 0.6 µg/L in well MW02-13). The detected concentrations will be included in the text in the Final EE/CA. In addition, samples will be taken in May 2000 to determine if vinyl chloride is still being detected around Site 1. This data will be included and discussed in the Final EE/CA.

The Navy agrees with RWQCB that the Site 1 landfill is not a significant source of ravine groundwater contamination. The Navy also recognizes the potential exposure pathway from the seep to terrestrial receptors; the recommended alternative addresses this concern. This will be more clearly discussed in the Final EE/CA. The UST corrective action plan will evaluate potential pathways associated with groundwater downgradient of Site 1.

Current institutional controls include Navy ownership and control of the property,State of California well construction standards, and the CCHS well permitting process. Institutional controls that will be put in place after the construction at Site 1 is complete will be clearly outlined in the AM.

Comment 9: <u>Section 2.5.3, Surface Seep Water</u>, Please explain the difference between surface seep water and surface water. Regional Board staff has visited the landfill area on three occasions between June and November 1999. Water was present each time in the seep, SW02-04. Please clarify if seep SW02-04 is considered part of the nine seeps that are ephemerally present only after rain events.

Regional Board staff agrees it may be difficult to discern the source of contaminants detected in samples collected from SW02-04. Isoconcentration maps of contaminants would help and a well completed in the colluvium, at the seep location, above the weathered bedrock interface would help discern the source of the contaminants in the groundwater and surface water. Releases from valve boxes and USTs that entered the waste material are considered part of the landfill.

Table two, Comparison to Ambient Water Quality Criteria (AWQC), should not compare acceptable TPH groundwater concentrations, based on site-specific determinations, to surface water concentrations. Please elaborate in the text what existing ecological criteria exist.

Response: Seep SW02-04 was originally identified as one of nine ephemeral seeps. Surface water (that is, a small puddle of water) has been observed at this location throughout most of 1999. However, water has been observed seeping from the ground at this location only during the rainy season. The data from this seep location is presented in the Draft EE/CA and will also be presented in the Final EE/CA. In addition, the observation of puddles of water at this seep location throughout most of the year and an additional description of surface water at the toe of Site 1 will be included in the Final EE/CA.

At the April 5, 2000, working meeting the Navy agreed that a well installation in the colluvium at the toe of the landfill would be completed. Installation of the well is scheduled for June 2000. The Final EE/CA will state that a well was installed at the toe of the landfill for monitoring purposes (if results are available, they will also be included in the Final EE/CA).

Groundwater contaminant isoconcentration maps will be developed to evaluate the source of seep water contamination.

Table 2 will be changed to reflect that AWQC do not exist for TPH.

Comment 10: Section 2.5.4, Landfill Gas, Regional Board Staff reviewed Tetra Tech EM Inc.'s November 18, 1999 letter regarding the Proposed Methane Survey. How will wells be placed in the vadose zone to monitor for methane gas near the toe of the landfill where groundwater is at the surface?

Response: Groundwater in wells downgradient of the landfill rises to the ground surface elevation because groundwater is under artesian conditions; however, saturation is not encountered until below the colluvium. Therefore, soil gas monitoring wells may be installed in the colluvium. Specifics of the location and construction of soil gas monitoring wells will be included in the design.

Comment 11: Section 2.6, Exposure Pathway Assessment, Please refer to Regional Board comment number 8 regarding groundwater. When will a risk assessment be completed for the IR Site 1 area? Future recreational visitors should be considered as potential receptors since the Point Molate Re-Use Plan identifies this area as open space/recreational use.

Response: A risk assessment should be planned after the recommended alternative is in place. Because the presumptive remedy eliminates complete exposure pathways, this risk assessment may be a qualitative exposure pathway assessment; if there are no complete exposure pathways, there is no need for a quantitative risk assessment. It is agreed that future recreational users should be considered potential receptors.

Comment 12: Section 3.1, Statutory Framework, The first paragraph of page 11 is unclear. Does the EE/CA have to fulfill the remedial action plan (RAP) or remedial action workplan (RAW) process?

Response: As noted in Section 3.1, a RAP or RAW are developed based on the cost and level of endangerment that exists with regard to the removal action. The different alternatives cover the range of costs that would include a RAP and a RAW. The Navy is conducting an EE/CA pursuant to CERCLA. This EE/CA fulfills the requirements for a RAP or a RAW. In this EE/CA, Alternatives 1, 2, and 3 would require a RAW; Alternative 4 would require a RAP. This will be clarified in the Final EE/CA in both the introduction and Section 3.1.

Comment 13: Section 3.2, Determination of Removal Scope, The Navy must submit a Final EE/CA according to the Regional Board Order 97-125. The due date for the Final EE/CA as listed in Regional Board Order 97-125 was September 1, 1999. Therefore, do not submit a Draft Final EE/CA as the review process will only increase the amount of time until a Final EE/CA is prepared and the remedial alternative implemented.

Response: The Navy and RWQCB have discussed that a "working" Final EE/CA will be submitted. If there are no additional comments, this will become the official Final EE/CA.

Comment 14: Section 3.3 Determination of Removal Schedule, This section implies a revised Draft EE/CA will not be completed. It appears if the Navy began a six-month construction in September 2000 that the construction activities would extend over the rainy season, therefore the schedule proposed by the Navy planned on completing the work during the rainy season. Regional Board staff recommends submitting this Draft EE/CA for public review now rather than submitting a revised Draft EE/CA for public review to help accelerate the schedule.

Response: The Draft EE/CA was submitted for public review and comment in February 2000. The schedule in the Draft EE/CA has changed because of increased review time provided to RWQCB and the City of Richmond, the addition of the public comment period, changes to the document made by Navy legal counsel, and the discussions to install a well at the toe of the landfill. The schedule presented in the Final EE/CA will reflect the latest version of the NFD Point Molate Environmental Cleanup Master Schedule.

Comment 15: Section 3.4, Applicable or Relevant and Appropriate Requirements, Attached is the Regional Board recommendations for ARARs for Groundwater Remediation to be included in the Final EE/CA. Remediation of groundwater through the process of natural attenuation, to meet water quality objectives in a reasonable time frame, must be verified through a groundwater monitoring program. Groundwater monitoring is used to confirm if the groundwater contaminants are naturally attenuating. Please rewrite this section to include groundwater remediation and ARARs for groundwater remediation.

Response: As agreed upon at the February 3, 2000 BCT meeting, groundwater contamination downgradient of Site 1 that is contaminated as a result of the fuel distribution system will be addressed in the underground storage tank (UST) corrective action plan.

The alternative recommended in the Draft EE/CA will be protective of groundwater and potential receptors by reducing infiltration, prohibiting well construction, and providing future groundwater monitoring. The soil cover alternative will reduce surface water

infiltration into the waste by diverting surface water run-on into ditches, compacting the soil cover, enhancing surface water run-off by grading the soil cover, and increased evapotranspiration as a function of the vegetative layer. The deed restrictions will prohibit construction within the landfill cover, including construction of wells in the waste, therefore preventing exposure to this groundwater. Groundwater monitoring will be conducted to assure protection of potential downgradient receptors.

Groundwater will be evaluated for remediation, including natural attenuation, in the UST corrective action plan. The Final EE/CA will reflect this approach.

Comment 16: Section 3.5, Removal Action Objectives, The second bullet on page 14 should include contaminated groundwater in addition to contaminated soil.

Response: Exposure to contaminated groundwater within the final footprint of the landfill will be prevented by this alternative. This will be included in the removal action objectives in the Final EE/CA. Contaminated groundwater downgradient of the landfill is a result of releases from the fuel distribution system; this groundwater will be evaluated for cleanup as part of the UST corrective action plan.

Comment 17: Section 4.1.1, Description, Groundwater Monitoring, The groundwater monitoring well locations, depths, and point of compliance locations must be proposed to Regional Board staff and agreed upon before implementation of any remedial alternative. This is especially important, due to the disagreement the Navy and the Regional Board had over groundwater monitoring well locations, depths, and points of compliance at IR Site 1. Groundwater monitoring would consist of an evaluation program not a detection program (Title 27, Subchapter 3, Article 1, Section 20385, et al). Detection monitoring is to detect a release from the waste material. At IR Site 1 the Navy detected a release possibly as early as 1990 and confirmed a release to groundwater in 1994. The Regional Board will consider the Final EE/CA, with an approved groundwater monitoring program and construction specifications equivalent to a Corrective Action Program, as required in Section 20385 (4). Section 20385 et al of Title 27 should be included in the ARAR table for IR Site 1.

Gas Monitoring, How will wells be placed in the vadose zone to monitor for methane gas near the toe of the landfill where groundwater is at the surface?

Response: Configuration of the groundwater monitoring network will be included in the cover engineering design. RWQCB will have the opportunity to review and comment on this design.

Contaminated groundwater downgradient of the landfill is a result of fuel distribution system releases; the requirements outlined in 27 CCR Article 1 do not clearly address this type of circumstance. In addition, the operation of Site 1 pre-dates these regulations.

Please also see response to General Comment 4. Because groundwater downgradient of the landfill is affected by UST releases, this groundwater will be addressed in the UST corrective action plan. This approach was agreed to during the February 3, 2000 BCT meeting. In developing the corrective action plan, the Navy will follow Title 23 CCR, Division 3, Chapter 16, Article 11 corrective action requirements as well as all other applicable state requirements.

The groundwater monitoring network will be in place to support detecting changes in groundwater conditions immediately downgradient of Site 1 after the cover is constructed.

Groundwater in wells immediately downgradient of the landfill rises to the ground surface elevation because groundwater is under artesian conditions; however, saturation is not encountered until the bottom of the colluvium. Therefore, soil gas monitoring wells may be installed in the colluvium. Specifics of the location and construction of soil gas monitoring wells will be included in the engineering design report.

Comment 18: Section 4.2.1, Description, Please identify what type of monitoring systems will be installed in the first sentence on page 17. Institutional controls for this site must be developed prior to a Record of Decision (ROD) and documented thoroughly in a ROD.

Institutional Controls, How would a deed restriction prevent a change in land use from open space to recreational? The City of Richmond is the local agency that will negotiate the redevelopment of the base, will issue permits, and implement zoning and ordinances related to land use. How will the City of Richmond be included in the implementation process of enforcing institutional controls? Regional Board staff agrees that institutional controls should restrict the land and groundwater at IR Site 1, not just to ensure the integrity of the cover, but also to eliminate any exposure pathway to ecological and human receptors. Has the Navy contacted Contra Costa Health Services (CCHS) to verify CCHS agrees they should be the agency to enforce deed restrictions on the site?

At CCHS the Land Use section oversees the permitting of wells and the Solid Waste section oversees landfills. How will the section enforcing restrictions on well permits know this area is a former landfill? What mechanisms does CCHS have in place to communicate between sections that institutional controls are in place for this land? How will CCHS track the institutional controls for IR1?

Regional Board staff agrees that a layering strategy is appropriate for implementing institutional controls but the layering appears thin from the discussion in this section.

Maintenance, Would a soil cover be constructed over the surface seep at the toe of landfill? If so how will constant surface saturation affect the integrity of the soil cover at this location? Will this be an area that will require constant maintenance to ensure the integrity of the soil cover?

Response: Groundwater and landfill gas monitoring systems are included in the recommended alternative and will be further described in the Final EE/CA. In addition, the need for surface water monitoring will be evaluated as part of the design.

The Navy will determine deed restrictions as part of the AM for Site 1. Deed restrictions will run with the land and therefore bind the new property owner to these restrictions.

As the property owner, the City of Richmond would be responsible for controlling land use; as stated in your comment, the city also controls redevelopment, permitting, and zoning and ordinances related to land use at the site.

CCHS has reviewed the Draft EE/CA and is supporting the Navy in implementing this action. CCHS has identified the CCCDD as the proper agency to enforce a deed restriction. Both the CCHS and CCCDD are under one entity (the county).

CCHS has an active well permitting program and has reviewed the Draft EE/CA. CCHS has identified that it controls the well permitting process.

The soil cover would be constructed over the ephemeral surface water seep. However, surface water will be diverted (in ditches and by the soil cover grading) such that the seep should no longer exist. Additional constant maintenance should not be required since the seep would not exist. Regular maintenance and inspection will include identifying any surface water seeps.

Comment 19: Section 4.2.2, Effectiveness, Please include the prevention of exposure to contaminated groundwater in the second sentence. The soil cap does not protect direct contact of receptors with water at IR Site 1, nor does a soil cover reduce refuse in contact with groundwater. Thank you for including a monitoring program that would be protective of groundwater and surface water quality. Recognizing that groundwater and surface water are impacted from waste in the landfill is a major step in the Regional Board and Navy agreeing on appropriately placed monitoring wells and a point of compliance to evaluate any change in contaminant concentrations.

Response: Language will be added to the second sentence of Section 4.2.2 in the Final EE/CA about prevention of exposure to contaminated groundwater within the footprint of the landfill. The Navy recognizes the importance of a monitoring program that is protective of groundwater and surface water.

Comment 20: Section 4.2.3, Implementabilty, If the Navy adheres to their proposed schedule the approval for the construction and awarding the contract of the recommended alternative would occur during the rainy season that is noted in this section as possibly causing a delay. The Navy should encourage regulatory participation throughout the process of finalizing the EE/CA, developing construction specifications, and developing institutional controls to increase regulatory review turnaround time.

Response: The schedule in the Draft EE/CA has changed because of increased review time provided to RWQCB and the City of Richmond, the addition of the public comment period, changes to the document made by Navy legal counsel, and the discussions to install a well at the toe of the landfill. The schedule presented in the Final EE/CA will reflect the latest version of the NFD Point Molate Environmental Cleanup Master Schedule.

The Navy will encourage regulatory participation throughout the EE/CA and design process by conducting working meetings and regular communication.

Comment 21: Section 4.3 Alternatives 3A and 3B-Multilayer CAP, Completing a mass balance equation will help determine if infiltration should be a remedial action objective for the landfill. The understanding of the generation of leachate from the landfill is inadequate at this time because monitoring wells are inappropriately located and screened, therefore this sentence should be changed. Regional Board comments regarding groundwater monitoring and soil gas in Alternatives 1 and 2, and institutional controls in Alternative 3 also apply to this alternative. A clay cap could reduce the amount of oxygen below that which is necessary to encourage aerobic degradation of petroleum constituents.

Response: Although a low-permeability cap would reduce groundwater infiltration, it would be unnecessary because the waste is already saturated. The soil cover alternative will reduce surface water infiltration into the waste by diverting surface water run-on into ditches, compacting the soil cover, enhancing surface water run-off by grading the soil cover, and increased evapotranspiration as a function of the vegetative layer. Because the waste is already saturated and groundwater will continue to flow through the landfill, reducing infiltration will not eliminate groundwater. Therefore, the low permeability

cover does not provide additional protectiveness and conducting a water balance would not be feasible or provide a benefit to alternative selection.

Comment 22: Section 4.4, Alternative 4, Excavation and Off-Site Disposal, Excavation and Backfill, Pumped groundwater should be sampled before discharge to the Bay to verify concentrations of contaminants that are being discharged. A National Pollutant Discharge Elimination System (NPDES) permit or equivalent written requirements are necessary to discharge treated water to the Bay. Why the assumption of 12 feet of backfilled soil? Could the thickness of the backfilled soil be more or less?

Response: Language will be added to the Final EE/CA stating that groundwater pumped from Site 1 as part of this alternative will need to be sampled prior to discharge to the bay under a NPDES permit or equivalent substantive requirements.

The 12 feet of backfill is an estimate for site restoration and to promote slope stability in the steep-sided ravine. The final resulting soil thickness will depend on the design.

Comment 23: Section 4.4.2, Effectiveness, Removing refuse and contaminated soil would result in a clean closure; assuming confirmation samples indicate the oily waste and construction materials were removed. Residual pollution in the ravine from the UST system will be investigated and remediated under the UST program.

Response: The assumption is that confirmation samples would indicate no residual contamination. Given the history of petroleum releases in the ravine, it is likely residual contamination would persist and require additional remediation under the UST program. This information will be included in Section 4.4.2 of the Final EE/CA.

Comment 24: Section 5.1, Effectiveness of Alternatives, Exposing and removing contaminated material is effective either in the short term or long term. Point Molate does not have a community. Does access to the thermal treatment facility require transportation through a community? Mitigating measures can be taken to reduce any possible exposure to the waste material.

Response: According to EPA guidance, short-term effectiveness addresses the effects of the alternative during implementation to the community, site workers, and the environment. Exposing and transporting contaminated soils poses additional risk of exposure to the community compared to covering (and thus not exposing or transporting contaminated soil). This same rationale applies to site workers; in addition, the physical process of excavation in the steep-sided ravine poses danger to workers.

Although NFD Point Molate does not have a community, contaminated soil would be transported on public roadways through nearby communities. A small community exists at the San Pablo Yacht Harbor that uses Main Road through NFD Point Molate regularly. In addition, transportation required along Interstate 580 would affect a much larger community.

Although mitigating measures can be taken to reduce potential exposures, compared to alternatives that cover the waste, exposing and transporting contaminated soil presents a lower level of short-term effectiveness. This will be more clearly explained in the Final EE/CA.

Comment 25: Section 5.2, Implementabilty of Alternatives, Section 4.4.1, Transportation, identifies Thermal Process System located in Richmond as the treatment and disposal facility. Why is the availability of a local treatment facility considered a difficulty?

Response: The implementability of excavation and treatment is more difficult relative to the other alternatives because greater coordination and additional transportation are required. In addition, excavation in the terrain of the steep-sided ravine is a concern. This will be more clearly discussed in the Final EE/CA.

Comment 26: Section 5.3, Cost of Alternatives, The CIWMB provided data about costs for soil covers and excavation/disposal that indicate the costs are overestimated. The costs provided by the CIWMB are based on a database of information regarding closure of landfills.

Response: The Navy has received a copy of estimates provided to the RWQCB from the CIWMB. These will be reviewed before the Final EE/CA is issued.

Comment 27: Section 6.0, Recommended Source Removal Action Alternative, Short-term effectiveness concerns would most likely not outweigh the benefits of Alternative 4, as discussed in Regional Board comment 24.

Response: According to EPA guidance, short-term effectiveness addresses the effects of the alternative during implementation to the community, site workers, and the environment. Exposing and transporting contaminated soils poses additional risk of exposure to the community under Alternative 4 compared to covering (and thus not exposing or transporting contaminated soil). This same rationale applies to site workers; in addition, the physical process of excavation in the steep-sided ravine poses danger to workers.

The short-term effectiveness concerns for Alternative 4 are greater than those for the other alternatives. As demonstrated in Table 3 of the Draft EE/CA, Alternative 4 has the best ranking for long-term effectiveness and permanence. Consideration is also given to implementability and cost. This will be more clearly discussed in the Final EE/CA.

SPECIFIC COMMENTS ON FIGURES

Comment 1: Figure 2, Facility Map, Please include the near-surface debris located outside the toe of the landfill in the outline of IR Site 1.

Response: The area of near-surface debris will be noted on Figures 3, 4, 5, and 6. Figure 2 is an overall view of the entire facility that shows where all IR sites are located. The other figures provide a detailed view of Site 1.

Comment 2: Figure 3, Past Releases, Please include the near-surface debris located outside the toe of the landfill in the outline of IR Site 1. The surface seep at the toe of the current landfill soil cover should be identified. Please include in the legend the well symbol definitions. All wells located in the IR Site 1 landfill area should be identified.

Response: The near-surface debris will be shown on Figure 3. The surface seep location, a legend of well symbols, and all wells within the area of this figure will be included on this figure in the Final EE/CA.

Comment 3: Figure 4, Site 1 Well Locations, Please include the near-surface debris located outside the toe of the landfill in the outline of IR Site 1. The legend should clearly distinguish

the different well installations, with different symbols. Well MW02-15 has not been sampled. Well MW02-13 is a bedrock well and should be identified as a bedrock well.

Response: The near-surface debris will be shown on Figure 4. The legend will be changed to clearly distinguish different well installations between unconsolidated materials and consolidated bedrock. The text that indicates MW02-15 has been sampled will be deleted and these sample results will be included on Figure 4. Well MW02-13 is screened in unconsolidated materials (colluvium and weathered bedrock) and will be identified as such. This information will be included in the Final EE/CA.

Comment 4: Figure 5, Site 1 Soil Sampling Results, Please include the near-surface debris located outside the toe of the landfill in the outline of IR Site 1. The legend should clearly distinguish the different well installations, with different symbols. Well MW02-13 is a bedrock well and should be identified as a bedrock well. Contaminant isoconcentrations would help define hotspots quickly and clearly. Please contour contaminant concentrations of total TPH, volatile organic compounds (VOC), and polycyclic aromatic hydrocarbons (PAHs) at a minimum. Using different colors to represent the different compounds may allow you to show all chemical concentration contours on the same map. The contours should include the ravine as well as the landfill to clearly show the effect past releases have had on the ravine separate from the landfill. SVOCs and PAH compounds are the same chemicals. Some of the sample boxes show a VOA laboratory analysis, should the laboratory analysis be VOC? SB02-13 sample box contains a question mark in the concentration for VOA. Please include the monitoring wells on the Bay side of the main road as was shown in Figure 4. Please include the surface soil sample concentrations collected at the two trench locations immediately downgradient of the toe of the landfill.

Response: The near-surface debris will be shown on Figure 5. The legend will be changed to clearly distinguish different well installations between unconsolidated materials and consolidated bedrock. Well MW02-13 is screened in unconsolidated materials (colluvium and weathered bedrock) and will be identified as such.

Isoconcentration maps of contaminant concentrations in soil are not included in the EE/CA because 1) Soil data presented in the Phase II RI Report indicate areas with and without petroleum contamination and 2) Landfills, by the nature of disposal, are highly heterogeneous and will not show gradational contamination.

Corrections to the VOC and VOA terminology will be made and the question mark will be eliminated. The monitoring wells on the bay side of the road will be shown on Figure 5. Information regarding soil sample concentrations downgradient of Site 1 will also be included in the Final EE/CA.

Analytical results collected at the two trench locations immediately downgradient of Site 1 will be included on Figure 5.

Comment 5: Figure 6, Groundwater Sampling Results, Please include the near surface debris located outside the toe of the landfill in the outline of IR Site 1. The legend should clearly distinguish the different well installations, with different symbols. Well MW02-13 is a bedrock well and should be identified as a bedrock well. Contaminant isoconcentrations would help define hotspots quickly and clearly. Please contour contaminant concentrations of total TPH, VOC, and PAHs at a minimum. Using different colors to represent the different compounds may allow you to show all chemical concentration

contours on the same map. The contours should include the ravine as well as the landfill to clearly show the effect past releases have had on the ravine separate from the landfill. SVOC and PAH compounds are the same chemicals. Some of the sample boxes show a VOA laboratory analysis, should the laboratory analysis be VOC? The seep location appears located further away from the toe of the landfill than what is observed in the field. Was the seep location physically measured or surveyed? The chemical concentration of contaminants in the water sample collected from this seep should be shown on the map and included in the isoconcentration contours. In January 1998 Regional Board staff collected a surface water sample at IR1. A map is not included with the sample results to verify that the sample was collected at this same seep location. For your information, the laboratory analytical results showed a TPH-d concentration of 80 parts per billion (ppb).

Response: The near-surface debris will be shown on Figure 6. The legend will be changed to clearly distinguish different well installations between unconsolidated materials and consolidated bedrock. Well MW02-13 is screened in unconsolidated materials (colluvium and weathered bedrock) and will be identified as such.

Isoconcentrations of TPH in groundwater will be developed based on the latest available data; ravine-wide data will be included for these isoconcentrations. The number of detections and the lack of analyses for VOCs and PAHs prohibits the development of meaningful isoconcentrations.

PAHs are a subset of SVOCs. The acronym VOC will replace VOA.

The location of the surface water seep was incorrect in the Draft EE/CA and will be shown at it's correct location, based on survey coordinates, in the Final EE/CA.

The results of the seep sample will also be included on this figure. The Navy would appreciate a copy of the results of the January 1998 sample. Upon receipt, this data can be added into the Final EE/CA.

Comment 6: Figure 7, Potential Exposure Pathway Conceptual Site Model, A future recreational user should be added as a potential receptor.

Response: Recreational user will be added to Figure 7 as a potential receptor.

SPECIFIC COMMENTS ON TABLES

Comment 1: Table 2, Surface Water Seep Comparison to Ambient Water Quality Criteria, Footnote 3 in the table for JP5 Range Organics and Gasoline Range Organics appears incorrect. Footnote 5 for the Soil Concentration Exceeds Criteria also appears incorrect. Please refer to comments in section 2.5.3, Surface Seep Water regarding acceptable levels of TPH in groundwater. Regional Board Order 96-070 established soil cleanup levels for TPH on a site-specific basis at the Presidio of San Francisco.

Response: The correct footnote for JP5 and gasoline range organics should be 5, and will be corrected in the Final EE/CA. Footnote 5 refers to acceptable groundwater concentrations, not soil concentrations; a note in the Final EE/CA will be made that this comparison is to surface water, not groundwater.

Comment 2: Table 3, Detailed Analysis and Rating of Removal Action Alternatives, Please identify the Alternative Cover as a 3-foot soil cover. Please refer to Regional Board comment

number 24 regarding the short term effectiveness of excavation and disposal, Alternative No. 4.

Response: The cover will be identified in the Final EE/CA as a 3-foot soil cover based on the recommendation from CCHS and CIWMB.

According to EPA guidance, short-term effectiveness addresses the effects of the alternative during implementation to the community, site workers, and the environment. Exposing and transporting contaminated soils poses additional risk of exposure to the community compared to covering (and thus not exposing or transporting contaminated soil). This same rationale applies to site workers; in addition, the physical process of excavation in the steep-sided ravine poses danger to workers.

Although NFD Point Molate does not have a community, contaminated soil would be transported on public roadways through nearby communities. A small community exists at the San Pablo Yacht Harbor that uses Main Road through NFD Point Molate regularly. In addition, transportation required along Interstate 580 would affect a much larger community.

Although mitigating measures can be taken to reduce potential exposures, compared to alternatives that cover the waste, exposing and transporting contaminated soil presents a lower level of short-term effectiveness.

3.0 RESPONSES TO CITY OF RICHMOND COMMENTS

GENERAL COMMENT

Comment 1: The document needs clarification regarding the removal action objectives for groundwater. In 2.5.2 it states that there are no current groundwater receptors, future groundwater use is limited to Bay recharge, and the GW levels are low and decreasing. In 2.5 it also states that contamination present in the landfill will be addressed under the UST programs. I think these statements mistakenly imply that GW does not need to be addressed. I think what should be discussed in the text are the requirements of an ARAR, Resolution 92-49, which is listed in Table A-1. I think the document should be clear on whether there are groundwater action levels to be met based on 92-49, and, if not, how compliance with the ARAR can be demonstrated. Also, in the absence of specific action levels, what will the future monitoring data will be compared against. I would also check with the Regional Board on their legal position on future uses of the groundwater.

Response: As agreed upon at the February 3, 2000 BCT meeting, groundwater contamination downgradient of Site 1 that is contaminated as a result of the fuel distribution system will be addressed in the underground storage tank (UST) corrective action plan. The alternative recommended in the Draft EE/CA will be protective of groundwater and potential receptors by reducing infiltration, prohibiting well construction, and providing future groundwater monitoring. The soil cover alternative will reduce surface water infiltration into the waste by diverting surface water run-on into ditches, compacting the soil cover, enhancing surface water run-off by grading the soil cover, and increased evapotranspiration as a function of the vegetative layer. The deed restrictions will prohibit construction within the landfill cover, including construction of wells in the

waste, therefore preventing exposure to this groundwater. Groundwater monitoring will be conducted to assure protection of potential downgradient receptors.

SPECIFIC COMMENTS

Comment 1: Section ES, 1.0: The public notice should be in a home-delivered newspaper (i.e. the West County Times) as well as the Richmond Post. The statement in the last paragraph implies that alternative 2 is superior to alternative 4 in all respects, but should reflect alternative 4's superiority in meeting several criteria (long-term effectiveness, reduction of mobility, toxicity or volume through treatment), and its equal status in others.

Response: The Navy held a public meeting on March 1, 2000. A public notice was displayed in the West County Times on February 16, 2000 and a public mailing was distributed on February 17, 2000. This notice and mailing announced the timeframe of the public comment period, the location of the public meeting, and the availability of the environmental documents located in the Information Repository.

The purpose of the executive summary is to briefly review the document's content and conclusions. As discussed in the body of the Draft EE/CA, Alternative 2 is not superior in all aspects, but is the recommended alternative based on overall consideration of effectiveness, implementability, and cost. As requested in the comment, the executive summary will be modified to better present this information.

Comment 2: Section 1.0, third paragraph: Is referral to "Remedial" action here (and in other places in the document) instead of "Removal" action intentional?

Response: The document will be revised to refer to this as a removal action.

Comment 3: Section 1.0, page 2, seventh paragraph: Doesn't the Navy need state concurrence on remedy selection and public participation?

Response: The Navy must comply with applicable federal and state laws; therefore, state concurrence is important; however, as the lead federal agency, the Navy has the final approval authority over recommended alternative selection and public participation. Community input is important to the Navy and a public comment period and meeting were conducted for the Draft EE/CA.

Comment 4: Section 2.5, first paragraph: Explain the statement that contaminants from past releases that were found in the ravine are not the subject of this removal action.

Response: This removal action is being taken to prevent exposure to debris and contaminants within the landfill. Contaminants within the ravine also come from the fuel distribution system; these contaminants are being evaluated under the UST program. The Final EE/CA will clarify this point.

Comment 5: Section 2.5.1: Significant soil "hits" should be discussed (i.e., acetone in SB02-06, MTBE in SB 02-11).

Response: Figure 5 shows all detections in soil at Site 1. Section 2.5.1 provides an overview of nature and extent of contamination. The Phase II RI Report provides a comprehensive summary of soils data. This information will be more clearly stated in the Final EE/CA.

Comment 6: Section 2.5.1: Since some pesticides were detected, what is the suspected source: Disposal of pesticide materials handled in Building 87?

Response: As discussed in the Phase I RI Report for Site 1, these pesticides are likely from brush discarded in the disposal area. This information will be added to the Final EE/CA.

Comment 7: Section 2.5.2: Not much groundwater data is presented in Figure 6. Explain. Also evaluate the presence of contaminants in soil and their absence in the groundwater in the same vicinity. Also explain why the contaminants are found below the saturated zone, but not in the groundwater. For groundwater data indicate the level of the well screen.

Response: All detections of contaminants in groundwater samples collected since 1994 are included on Figure 6. Data collected since the Draft EE/CA was issued will be included in the Final EE/CA. The primary contaminants at Site 1 are TPH and associated constituents; these compounds have a greater affinity for soil than water. These contaminants have been commonly found in soil, but not groundwater at NFD Point Molate. This will be clarified in the Final EE/CA. Well screen interval data will be added to Figure 6.

Comment 8: Section 2.5.3, second paragraph: Reference the "existing ecological criteria".

Response: Existing ecological criteria are referenced on Table 2 and are ambient water quality criteria. A reference will be added to this section in the Final EE/CA.

Comment 9: Section 2.6, third paragraph: The statement that surface seeps do not present an unacceptable risk to ecological receptors should include a reference, or more detail.

Response: The reference to unacceptable risk was based on the ambient water quality criteria. This reference will be included in this section.

Comment 10: Section 3.2: Groundwater monitoring data was not compared to an action level; therefore, what is the basis for the conclusion that no action is necessary.

Response: The action described in the Draft EE/CA is being taken to prevent exposure to debris and contaminated media within the landfill footprint. As agreed upon at the February 3, 2000 BCT meeting, groundwater contamination far downgradient of Site 1 that is contaminated as a result of the fuel distribution system will be addressed in the underground storage tank (UST) corrective action plan. The alternative recommended in the Draft EE/CA will be protective of groundwater and potential receptors by reducing infiltration, prohibiting well construction, and providing future groundwater monitoring. The soil cover alternative will reduce surface water infiltration into the waste by diverting surface water run-on into ditches, compacting the soil cover, enhancing surface water run-off by grading the soil cover, and increased evapotranspiration as a function of the vegetative layer. The deed restrictions will prohibit construction within the landfill cover, including construction of wells in the waste, therefore preventing exposure to this groundwater. Groundwater monitoring will be conducted to assure protection of potential downgradient receptors.

Cleanup levels for chemicals of concern were not proposed and a risk assessment was not performed prior to the preparation of the EE/CA because the alternatives should

eliminate exposure pathways to disposed debris and contaminated soils and groundwater within the landfill footprint.

Comment 11: Section 3.4.2, first paragraph: The second sentence seems to indicate that the reason there are no chemical-specific ARARs is that the GW levels are low - which wouldn't be true.

Response: As agreed upon at the February 3, 2000 BCT meeting, groundwater contamination far downgradient of Site 1 that is contaminated as a result of the fuel distribution system will be addressed in the underground storage tank (UST) corrective action plan. Remediation of this groundwater downgradient of the landfill is not included as part of this removal action; therefore, there is no need for chemical-specific ARARs in the EE/CA.

Comment 12: Section 4.1.1: Explain why additional groundwater monitoring wells would be needed.

Response: The need for additional groundwater monitoring wells for this alternative was an assumption made based on previous RWQCB comments, as well as the need to destroy some wells during cover construction. An explanation will be included in the Final EE/CA to note that existing wells are to be destroyed.

Comment 13: Section 4.1.1: Gas Monitoring - If the lower explosive limit (LEL) for methane is 5 percent, why is the action level 10 percent?

Response: The 10 percent level is from the Bay Area Air Quality Management District. The 5 percent level is from 27 CCR; the 5 percent level will be used to determine whether corrective action is necessary. This will be clarified in the Final EE/CA.

Comment 14: Section 4.2.1: Where would the 120 foot gas venting trench be located, if needed?

Response: This trench would be located near the center of the landfill. However, based on evaluation of the methane monitoring data, gas vent wells are more likely to be included in the design. The Final EE/CA will be changed to include gas vent wells instead of a trench and will summarize the spacing of these wells.

Comment 15: Section 4.2.1 Institutional Controls, first sentence, second paragraph: Everything after "and should..." is redundant.

Response: This sentence will be re-written for clarity in the Final EE/CA.

Comment 16: Section 4.3.2, second sentence, third paragraph: Explain why a low permeability cap is not effective in eliminating groundwater contamination"? Is this a remedial action objective (RAO)?

Response: A low permeability cap would not prevent groundwater contamination because the waste is already saturated and the groundwater is already contaminated. Because the waste is already saturated and groundwater will continue to flow through the landfill from the sides and bottom, reducing infiltration will not eliminate groundwater. Preventing infiltration into waste is not an RAO.

Comment 17: Section 4.3.3: If installed in the dry season (which is logical), most of the concerns in the first paragraph go away. Describe the "frequent geotechnical testing to demonstrate that performance requirements are met".

Response: It is agreed that a clay cover must be installed in the dry season to prevent unnecessary costs and delays.

Additional detail will be added to describe the geotechnical testing. For a clay cap, this testing includes permeability tests, construction of a test pad, and compaction tests.

Comment 18: Section 4.4.2: ARARs were not discussed for this alternative.

Response: A discussion of how this alternative can effectively meet ARARs will be included in this section of the Final EE/CA and will be included as an appendix.

Comment 19: Section 5.0: The title indicates that these are "Source Removal Alternatives" - only one is.

Response: Source will be removed from the title. All the alternatives evaluated are removal action alternatives.

Comment 20: Section 5.2, fourth paragraph, third sentence: Your criteria of "not impossible to implement" isn't appropriate for judging these alternatives.

Response: This sentence will be changed to reflect that all of these alternatives can be implemented. If an alternative cannot be implemented, it should not be selected on that basis.

Comment 21: Figure 6: Not much groundwater monitoring data for making conclusions.

Response: All detections of contaminants in groundwater samples collected since 1994 are included on Figure 6. The primary contaminants at Site 1 are TPH and associated constituents; these compounds have a greater affinity for soil than water. These contaminants have been commonly found in soil, but not groundwater at NFD Point Molate. All data collected since the Draft EE/CA was issued will be included in the Final EE/CA. Well screen interval data will be added to Figure 6.

Comment 22: Table 2: Freshwater AWQC for JP5 and gasoline are missing without explanation.

Response: The referenced footnote for JP5 and gasoline was incorrect and should have referenced footnote 5. There are no specific AWQCs for TPH products. This error will be corrected in the Final EE/CA.