

**RESPONSE TO REGULATORY AGENCY COMMENTS ON THE DRAFT
ENGINEERING EVALUATION AND COST ANALYSIS/INTERIM REMEDIAL ACTION
PLAN FOR INSTALLATION RESTORATION SITE 17 AND BUILDING 503 AREA,
FORMER MARE ISLAND NAVAL SHIPYARD, VALLEJO, CALIFORNIA
APRIL 6, 2009**

This document presents the Department of the Navy's responses to comments from Chip Gribble of the Department of Toxic Substances Control (DTSC); James Polisini, from DTSC's Human and Ecological Risk Division (HERD); Allen Tsao and Tami Nakahara from the California Department of Fish and Game, Office of Spill Prevention and Response (DFG-OSPR); Paisha Jorgensen from the San Francisco Bay Regional Water Quality Control Board (Water Board); and Carolyn d'Almeida from the U.S. Environmental Protection Agency (EPA). These comments, dated December 8, 2008, were submitted on the "Draft Engineering Evaluation and Cost Analysis/Interim Remedial Action Plan (EECA/IRAP) for Installation Restoration Site 17 (IR17) and Building 503 Area, Former Mare Island Naval Shipyard, Vallejo, California," dated November 7, 2008 (ChaduxTt 2008). In addition, a recommendation for concurrence with the selected alternative was received from Buck King of DTSC's California Geological Services Unit (GSU) on December 8, 2008.

Subsequent discussions were held between the Navy and the regulatory agencies regarding the plan for IR17 and Building 503 Area non-time-critical removal action (NTCRA). The approach for the removal action was discussed during a project meeting on January 14, 2009, summarized and distributed in an email dated February 19, 2009, and discussed during a BRAC Cleanup Team (BCT) meeting on February 26, 2009. The proposed cleanup approach includes removal of soil in areas of residual free phase product located near the former southern tank farm. A vapor intrusion (VI) risk evaluation (ChaduxTt 2009) was conducted for the site using active soil gas (ASG) data. The results of the VI risk evaluation (based on a federal toxicity criteria hierarchy) indicated two ASG locations (IR17SG002 and IR17SG014) where residual free phase product is inferred to exist and should be included in the removal action. ASG location IR17SG002 is included within the original removal action area near the former southern tank farm and will be removed. ASG location IR17SG014 is located northwest of the former northern tank farm and was added as a second location for removal. In addition, the results of the VI risk evaluation (based on a state toxicity criteria hierarchy) indicated one location (IR17SG024) was impacted by chlorinated solvents. Because past sampling has indicated impacts to this area are likely localized, the Navy proposes to conduct an exploratory excavation at ASG location IR17SG024 and the adjacent ASG location IR17SG023 during the NTCRA. The EECA/IRAP will continue to address residual free phase product at the site and will not be amended to include the area of chlorinated solvents. However, the Navy will include the area of chlorinated solvents (IR17SG023 and IR17SG024) in the removal action work plan.

RESPONSES TO DTSC COMMENTS

1. **Comment:** Please add the appropriate approval pages for Navy and DTSC. We suggest having this in an approval section to follow the section 8 "Recommended Removal Action Alternative". The approval signature block for DTSC should be for Mr. Daniel E. Murphy, P.E.

Response: The Navy will add the recommended approval section to the draft final EECA/IRAP.

2. **Comment:** Please add the appropriate appendices, e.g. the responsiveness summary, fact sheet, public notice. See other previously approved removal action documents for the Mare Island cleanup for a complete list of appendices, contents, and organization.

Response: The draft final EECA/IRAP will be revised to include the public notice and fact sheet. However, the responsiveness summary noted in the comment will be included in the action memorandum prepared to memorialize the EECA/IRAP and not in this document.

3. **Comment:** Page ES-1, para. 1, last sentence: Please revise to state that this NTCRA is being conducted in accordance with the CA H&S Code Chapters 6.5 and 6.8.

Response: The Navy will revise the sentence to include both California Health and Safety Code Chapters 6.5 and 6.8.

4. **Comment:** Page ES-2, para. 3: Please revise to clearly state that the risk assessment and thus also the RI were considered incomplete due to the outstanding issue related to free product and vapor intrusion.

Response: The third and fourth paragraphs on Page ES-2 were reorganized to clarify the history of risk assessments performed for the site and to note that a vapor intrusion risk evaluation was conducted using the recent ASG data. The third paragraph was revised to include the following: "*However, the regulatory agencies considered the HHRA incomplete because of limitations of the bulk soil VI model and lack of site soil gas data. Thus, the Navy collected ASG samples in October and November 2008 to complete the VI risk evaluation. Potential risks from exposure to the VI pathway were quantified in the Draft Field Investigation Summary Report and VI Risk Evaluation using site-specific ASG data (ChaduxTt 2009).*"

5. **Comment:** Page ES-3, section on Recommended Alternative, para. 1: Please revise for consistency with comment number 4. It is incorrect to state

that the No Action Alternative was or is protective of human health without a completed RI to support this statement.

Response: The first sentence in the referenced paragraph will be removed.

6. **Comment:** Page ES-3, last para.: Please delete this paragraph, as this EE/CA/IRAP is not intended to be approved as a final document until community input has been considered, addressed, and a responsiveness summary has been included as an appendix.

Response: The subject paragraph will be removed from the draft final EECA/IRAP. The action memorandum will document the Navy's decision for selecting the response action. Accordingly, the Navy will submit a draft final EECA/IRAP to the public for comment. Public input will be documented as a responsiveness summary in an appendix to the action memorandum.

7. **Comment:** Page 1, para. 1: We understand that the Navy preference to not include the wetland area west of Cedar Ave. may change over the time during which the NTCRA is being planned. DTSC strongly recommends that some sampling be conducted for this area, at a minimum, to establish the presence/absence of free product in this area. Knowing this is critical to designing the NTCRA such that the potential for post Removal Action re-contamination of the area that is to be remediated has been adequately addressed in a cost-effective manner.

Response: Based on the recent passive soil gas survey and subsequent soil, groundwater, and ASG sampling, the Navy believes the most recent site characterization activities demonstrate that residual free phase product does not extend into the wetland. In addition, previous soil and groundwater data collected from within and adjacent to the wetland area do not indicate a source of contamination exists in the wetlands. It is unlikely that the wetland would pose a meaningful source of contaminants that could re-contaminate areas subject to the NTCRA.

8. **Comment:** Page 2, para. 2: "The potential threat of exposure to human health and the environment at the IR-I 7 and Building 503 Area does not warrant an emergency or TCRA. . ." on the basis of the above stated criteria. It cannot be said that the risk is relatively low without a completed risk assessment and RI as a basis for such a statement. Please revise accordingly.

Response: A VI risk evaluation was completed after the draft EECA/IRAP was issued. The results were presented in the Draft Field Investigation

Summary Report and VI Risk Evaluation. Based on the current use of the site (unoccupied) and the previous soil and current VI risk results for IR17 and Building 503 Area, there is currently no basis for conducting an emergency or time-critical removal action at the site. The draft final EECA/IRAP will be updated to include the results of the new VI risk evaluation. Additionally, any references to the site risk assessment will reflect the previous results for soil as well as the recent VI risk results.

9. **Comment:** Page 2, section 1.2: The community involvement should be defined by the Community Relations Plan, which is consistent with requirements defined in CERCLA, NCP, as well as those of the state of California DTSC. Please revise for consistency with, and to refer to, the Community Relations Plan.

Response: The text will be revised to include reference to the Mare Island Community Relations Plan.

10. **Comment:** Page 4, para. 3: Please revise to indicate how many former shipyard workers "...stated that polychlorinated biphenyls (PCB), organotins, and other biocide agents were..."

Response: The statement was taken from the 2006 remedial investigation (RI), which indicated one worker reported this information. The sentence will be revised to begin "*It was reported during the remedial investigation that polychlorinated biphenyls (PCB)...*"

11. **Comment:** Page 5, para. 1: Please add that an industrial cleanup standard and possible corresponding restrictive land use covenant is not inconsistent with the reasonably anticipated future use per the COV Final Reuse Plan (with citation). Please delete the last statement regarding expectation of future pavement. However, it would be important to indicate that the Navy anticipates a final remedy that would include an institutional control including a permanent pavement cover over the site, if this is the case.

Response: The last sentence of the paragraph will be removed.

12. **Comment:** Page 15, section 2.4.1.1: The discussion presented includes statements regarding the definition of nature and extent in terms only of USEPA industrial PRGs. Please note that definition of nature and extent (characterization) in terms of contamination of soil and groundwater is also critically important for this site insofar as the area for which a restrictive land use covenant may need to be applied in the future may be appropriately defined.

Response: A statement will be added to the introduction in this section that identifies EPA industrial regional screening levels (RSLs) as the appropriate comparison criteria (EPA 2008). As noted in DTSC comment 11, these industrial RSLs are consistent with reasonably anticipated future industrial land use.

13. Comment: Page 23, section 3.1: S/A comment number 4. Please revise accordingly.

Response: This section will be revised to include statements that limit the scope of the conclusions from the previous HHRA. Also see response to DTSC comment 4.

14. Comment: Page 24, section 4.1, para. 3, last sentence: S/A comment number 3 and revise accordingly.

Response: The text will be revised to include both Health and Safety Code Chapters 6.5 and 6.8.

15. Comment: Page 25, para. 1: Please delete the first full sentence in this paragraph.

Response: The referenced sentence will be revised as the following: *"The Water Board submitted ARARs as part of its comments on the draft FS dated October 10, 2003, and also in a letter dated April 16, 2008 (sent by e-mail) in response to a request for ARARs at another Mare Island NTCRA site (Building 742). The California Department of Fish and Game submitted ARARs with its comments on the Draft EECA/IRAP in a letter dated December 5, 2008. DTSC provided additional ARARs in a letter to the Navy dated February 12, 2009."*

16. Comment: Page 43, section 5.4.4.1: Given that the most of the smear zone is expected to be unsaturated and to be limited in depth below the water table at the time of excavation, it would be reasonable to excavate to the full extent/depth of the smear zone. Please revise accordingly.

Response: The text will be revised to indicate that the objective of the removal action is to remove the maximum amount of contamination in the smear zone.

17. Comment: Page 57, section 7.1: S/A comment number 4. Please revise accordingly.

Response: The section will be revised to update the results of the risk assessment for the site.

18. **Comment:** Page 58, section 7.6, para. 1: S/A comment number 4. Please revise accordingly.

Response: The section will be revised to update the results of the risk assessment for the site.

19. **Comment:** Page 58, section 7.6, para. 4: Please delete this paragraph.

Response: The referenced paragraph will be deleted.

20. **Comment:** Page 59, section 6 [sic], para. 1: S/A comment number 3, and revise for consistency.

Response: The Navy will revise the paragraph to note that the EECA/IRAP was also performed in accordance with the California Health and Safety Code.

RESPONSES TO DTSC HERD COMMENTS

GENERAL COMMENTS

1. **Comment:** This review addresses only the issues related to the site characterization and ecological evaluation of the non-tidal wetland, a portion of which is included within the boundary of IR Site 17 and Building 503 Area. Comments regarding any Human Health Risk Assessment (HHRA) issues will be furnished in a separate memorandum.

Response: Comment noted.

SPECIFIC COMMENTS

1. **Comment:** Please amend the statement regarding the results of the HHRA and Ecological Risk Assessment (ERA) to indicate that the results of the ERA, excluding the adjacent non-tidal wetland, indicate that risks under current conditions at the site are within the risk management range (Executive Summary, Recommended Alternative, page ES-3).

Response: Per the response to DTSC comment 5, the first sentence of the Recommended Alternative section on page ES-3 was removed.

2. **Comment:** Please amend the text (Section 1.0, page 1) to indicate that the portion of the adjacent non-tidal wetland excluded from this EE/CA will be

further evaluated in a separate investigation as indicated in the Executive Summary (Site Background, page ES-2).

Response: Section 1.0 will be revised to include a statement that the non-tidal wetland excluded from this EECA/IRAP will be evaluated in a separate investigation.

3. **Comment:** The separate investigation of the non-tidal wetland associated with IR Site 17 Building 503 Area must address the conclusion that 'Groundwater flows toward the wetland from north to the south in the southern portion of the site, in the vicinity of the former southern tank farm.' (Section 2.1.7, page 6).

Response: A work plan for the investigation of the non-tidal wetland at IR17 and Building 503 Area will be prepared and submitted for regulatory review at a later date. No change will be made to the EECA/IRAP as a result of this comment.

4. **Comment:** Any future investigation of the non-tidal wetland excluded from the IR Site 17 Building 503 Area EE/CA or the dredge pond to the west should address potential contaminants (e.g., polycyclic aromatic hydrocarbons [PAHs]) associated with transport of combustion residue from the Building 627 fire (Section 2.1.9, page 7) in surface flow of fire-fighting water. This evaluation need not be part of the IR Site 17 Building 503 Area EE/CA or free-product remediation.

Response: A work plan for the investigation of the non-tidal wetland at IR17 will be prepared and submitted for regulatory review at a later date. No change will be made to the EECA/IRAP as a result of this comment.

5. **Comment:** Please amend the text (Section 2.1.9, page 7) to indicate that the portion of the adjacent non-tidal wetland excluded from this EE/CA will be further evaluated in a separate investigation as indicated in the Executive Summary (Site Background, page ES-2).

Response: Section 2.1.9 will be revised to include a statement that the non-tidal wetland excluded from this EECA/IRAP will be evaluated in a separate investigation.

6. **Comment:** Not all laboratory data was available at the time this Draft EE/CA was prepared (Section 2.3, page 14). All the results of the additional soil, groundwater, and active soil gas (ASG) sampling investigation together with the vapor intrusion risk evaluation will be presented separate from this EE/CA in the Field Investigation Summary Report

(Section 2.3, page 14). This would appear to contradict the later statements (Section 2.4.1.3, page 17; Section 3.0, page 22; Section 3.3, page 23) that the results of the soil gas investigation relative to vapor intrusion will be added to this EE/CA. Please amend these statements so that they agree and are accurate regarding where the soil, groundwater, ASG data, and vapor intrusion assessment will be presented.

Response: Validated results of the most recent site characterization were presented in the Draft Field Investigation Summary Report and VI Risk Evaluation (ChaduxTt 2009). The results necessary for the evaluation of potential removal actions at the site will be summarized in the draft final EECA/IRAP.

7. **Comment:** Please explain how it is possible to conclude that, based on the results of the groundwater and soil gas investigation conducted in October, 2008 (apparently the laboratory results are not yet available), that the highest concentrations were found in the vicinity of the southern tank farm (Section 2.4, page 15). If this conclusion is based on data which has yet to complete the validation process the text should clearly state that limitation.

Response: Validated results of the most recent site characterization were presented in the Draft Field Investigation Summary Report and VI Risk Evaluation. The results necessary for the evaluation of potential removal actions at the site will be summarized in the EECA/IRAP.

8. **Comment:** Trace amounts of free product (free-phase LNAPL) were detected in monitoring well 17W12 using an oil/water interface probe (Section 2.4.2, page 18). The direction of groundwater flow is posited to be northwest based on the results from monitoring well 17W15. However, the location of monitoring well 17W12 (Figure 3) is within the yellow-colored boundary of the free product plume (Figures 5 through 9) for all remedial alternatives. The location of monitoring well 17W12 would appear to be the southern portion of the site where groundwater flow is described as toward the wetland from north to the south in the southern portion of the site, in the vicinity of the former southern tank farm (Section 2.1.7, page 6). While groundwater flow in the area of monitoring well 17W15 may be to the north, at least a portion of the plume of LNAPL would appear to be in the area where groundwater flow would carry it towards the non-tidal wetland.

Response: Though slight sheening was observed on the purge water surface during groundwater sampling, no measurable free product greater than or equal to

0.01 feet was found during the 2008 sampling activities. The Navy collected additional groundwater level information on January 23, 2009 to determine the current direction of groundwater flow at the site. The inferred direction of groundwater flow in upland areas of the site shifted from generally flowing north in 2002 to generally flowing northwest and west. The area in the vicinity of the southern tank farm remains unchanged from 2002, with groundwater flow generally to the south. The text in the draft final EECA/IRAP will be revised to update the direction of inferred flow of groundwater at the site.

9. **Comment:** Groundwater concentrations from the October, 2008 sampling (the results of which are reported as not available) are the basis for some elementary modeling on the extent of free-product plume (Section 2.4.2.1, page 20). If this conclusion is based on data which has yet to complete the validation process the text should clearly state that limitation.

Response: Validated results of the most recent site characterization were presented in the Draft Field Investigation Summary Report and VI Risk Evaluation. The results necessary for the evaluation of potential removal actions at the site will be summarized in the EECA/IRAP.

10. **Comment:** Soil concentrations from the October, 2008 sampling (the results of which are reported as not available) are the basis for estimates on the horizontal boundary of the free-product plume (Section 2.4.2.1, page 22). If this conclusion is based on data which has yet to complete the validation process the text should clearly state that limitation.

Response: Validated results of the most recent site characterization were presented in a Draft Field Investigation Summary Report and VI Risk Evaluation. The results necessary for the evaluation of potential removal actions at the site will be summarized in the EECA/IRAP.

RESPONSES TO CDFG-OSPR COMMENTS

GENERAL COMMENTS

1. **Comment:** Please note that United States Environmental Protection Agency, United States Fish and Wildlife Service, California Department of Toxic Substances Control, and California Department of Fish and Game have not accepted the conclusions of the "final" onshore ecological risk assessment report. Those agencies agreed that the underlying data could be brought forward into the subsequent site-specific assessments, but that the onshore ecological risk assessment

(ERA) would not be finalized. Therefore, we do not support conclusions that draw references to this document such as those made in this document (e.g. Section 3.2) or in other documents (e.g. remedial investigation report for IR 17/B503).

Response: References to the onshore ecological risk assessment (ERA) will be removed from this section. However, it must be noted that Chapter 8 of the onshore ERA presented an ecological evaluation for the site using site-specific data for the IR17 and Building 503 Area located within Investigation Area A1. It is the Navy's recollection that the regulatory agencies had commented that the RI should include the site-specific evaluation as an appendix rather than refer to a chapter of the onshore ERA. The Navy does not agree that conclusions brought forward from the onshore ERA are unacceptable.

SPECIFIC COMMENTS

1. **Comment:** Page ES-2, first paragraph. The Navy states that the "wetland area is not included within the project boundary covered by this EECA/IRAP" and "will be further evaluated as a separate investigation." As part of the separate wetland investigation, please follow the avoidance and minimization measures OSPR previously submitted for the wetland area in an email dated September 24, 2008 (Tsao and Nakahara, 2008).

Response: A work plan for the investigation of the non-tidal wetland at IR17 will be prepared and submitted for regulatory review at a later date. In addition, the Navy will include appropriate avoidance and minimization measures necessary during implementation of the NTCRA to areas adjacent to the non-tidal wetland area. Details regarding these measures will be included in the NTCRA work plan.

2. **Comment:** Page 8, Section 2.1.9. Sensitive Ecosystems. The last sentence of this section states, "however, the wetland area is not included within the project boundary covered by this EECA/IRAP."
- a. Please add a sentence to clarify how risks to wetland will be evaluated.
- b. According to the sentence quoted above, we understand that this document does not address the wetland area. Thus, please remove any section that references wetland ecological risk evaluation. Specifically, please remove Section 3.2 "Summary of Ecological Risk Evaluation" from this report.

- Response:
- a. See response to DTSC HERD comment 5. In addition, a work plan for the investigation of the non-tidal wetland at IR17 will be prepared and submitted for regulatory review at a later date.
 - b. Section 3.2 of the EECA/IRAP summarizes the previous ERA results for the site. The last sentence of Section 2.1.9 states that the wetland will be further evaluated in a separate investigation.

3. Comment: Page 13. Section 2.2.12. Onshore Ecological Risk Assessment. The document states “The onshore ERA identified the seasonal wetland as the only viable habitat at the IR17 and B503 Area. Thus, no complete exposure pathways for ecological receptors exist in the upland portion of the IR17 and B503 Area. The goal, scope, results, and conclusions of the onshore ERA at the site are summarized in Section 3.5 of the remedial investigation (SulTech 2006a).”

- a. **Currently, there is open space with grassland habitat between Building 601 and Building 759. Thus, potential habitat may exist, although it is planned to be open-air commercial parking structures in the future.**
- b. **The area south of the former southern tank farm contains a pickleweed wetland associated with the federally endangered and state fully-protected salt marsh harvest mouse. Thus, please revise the second sentence quoted above to “*Thus, no complete exposure pathways for ecological receptors currently exist in the paved portion of the IRI 7 and B503 Area.*”**
- c. **Per our general comment regarding the conclusions of the onshore ERA, we recommend the third sentence quoted be revised to “Samples of groundwater, surface soil, and soil gas will be collected. Risk evaluation for the wetland area will be summarized as an addendum to this EECA/IRAP.”**

- Response:
- a. The second sentence (referenced above in comment 3[b]) will be removed from the text. Previous investigations at the site have not identified significant ecological habitat in the upland portion of the site. Site use and features have not changed since the previous investigations.
 - b. The referenced sentence will be removed from the text.
 - c. The text will be amended to include a statement that the non-tidal wetland at IR17 will be further evaluated in a separate

investigation. A work plan for the investigation of the non-tidal wetland at IR17 will be prepared and submitted for regulatory review at a later date.

4. **Comment:** Page 24, Section 4.2 **Applicable or Relevant and Appropriate Requirements (ARARs)**. Please specify whether the ARARs included in this section apply to the entire IR 17 and B503 Site, including the wetland area, or just to the project boundaries covered by this EECA/IRAP, which do not include the wetland area. If the ARARs in this document do not cover the wetland area, please specify whether there will be a separate EECA/IRAP that will cover the wetland area and include ARARs specifically for the wetland.

Response: As noted in the response to CDFG-OSPR specific comments 5 and 8, the information submitted by CDFG-OSPR with their comments on the draft EECA/IRAP will be evaluated for inclusion as ARARs for this project. The final ARARs will be documented in the action memorandum.

5. **Comment:** Page 26, Section 4.2.3: **Location Specific**. Please consider the enclosed ARARs for the entire IR 17 and B503 Site and wetland area and include them in this EECA/IRAP.

Response: The provided information will be evaluated for inclusion into the EECA/IRAP as ARARs.

6. **Comment:** Appendix A, Page A-1, Section A1.0. Please refer to Specific Comment 4.

Response: Please see response to CDFG-OSPR specific comment 4.

7. **Comment:** Appendix A, Page A-16, Section A3.0: **Location Specific**. Please refer to Specific Comment 5.

Response: Please see response to CDFG-OSPR specific comment 5.

8. **Comment:** Appendix A, Page A-1, Table A-4: **Potential State Location-Specific Applicable or Relevant and Appropriate Requirements**. Please consider the enclosed ARARs table for the entire IR 17 and B503 Site and wetland area and include them in Table A-4.

Response: The provided information will be evaluated for inclusion in the EECA/IRAP as ARARs.

RESPONSES TO WATER BOARD COMMENTS

GENERAL COMMENTS

- 1. Comment:** Recent groundwater (October/November 2008) sampling results indicate that light nonaqueous-phase liquids (LNAPLs) are present west of Azuar Ave and immediately north of the wetlands area of the IR17 and Building 503 Area; however, current soil and groundwater samples have yet to be collected in the wetlands. Groundwater potentiometric surface maps presented in the Remedial Investigation Report, dated January 27, 2006, indicate that groundwater in the approximate area west of Azuar Ave and south of J Street is flowing towards the wetlands. LNAPLs were not detected in groundwater monitoring wells during the recent groundwater sampling event; however, it is assumed that free product exists based on calculations using soil and groundwater concentrations (Section 2.4.2.1).

Even though the Navy has determined that “there is no risk to groundwater” and “groundwater remediation is not required” (Section 4.2.2), groundwater in this area is clearly impacted. The Water Board will not consider the case for closure unless the Navy can show that groundwater concentrations of constituents of concern are decreasing.

As stated in the Water Board’s comments on the Feasibility Study (dated January 19, 2006), if post-remedial “groundwater contamination exceeds the ESLs, or the site’s screening criteria, monitoring will be required for a minimum of four consecutive quarters. If groundwater contamination cannot be shown to be receding by naturally occurring processes, additional remedial actions may be needed. We can consider the case for closure, or “No Further Action”, if the pollutant concentrations in the groundwater are receding by naturally occurring processes and will likely continue to do so. Any request for closure should include an estimate for the time needed to eventually achieve water quality objectives”.

During the design phase of this non-time-critical removal action (NTCRA), the Navy should include post-excavation groundwater sampling as part of the NTCRA performance evaluation. This groundwater sampling effort should include the collection of groundwater samples from the monitoring wells located in the wetlands.

Response: The alternatives will be revised to ensure groundwater monitoring is included as part of the removal action performance evaluation.

2. **Comment:** The Navy proposes conducting the excavation of LNAPL during the dry season to take advantage of the low groundwater table, which will “minimize excavation dewatering and maximize the removal of LNAPL in the smear zone. At that time, most of the smear zone soils would be unsaturated and excavation would continue to an average depth of 6 inches below the low water table” (Section 5.4.4.1). The Navy has no way of predicting the elevation of the water table at the time of excavation, and should not assume that the excavation will only need to extend to a depth 6 inches below the water table. The Navy should excavate the smear zone to the maximum extent practicable, regardless of the groundwater elevation at the time of excavation.

Response: The objective is to remove the smear zone and assumes that removal of soil 6 inches below the low water table would accomplish that objective. The text does not reference the water table at the time of excavation. The objective will be revised to emphasize that removal is intended to remove the contamination to the maximum extent practicable in the smear zone.

SPECIFIC COMMENTS

1. **Comment:** Page 14, Section 2.3 – It is reported that a sheen was observed on the surface of the purge water generated during groundwater sampling of wells 17W02, 17W04, 17W05, 17W10, 17W12, 17W13, and 17W15. It is unclear if the sheen was observed on the purge water from each of these wells, indicating sheen in each well, or if a sheen was observed on the combined purge water from all seven wells. If the latter is the case, does the Navy know from which well(s) the purge water with sheen was pumped?

Response: The sheen was noted on purge water from individual groundwater wells 17W02, 17W04, 17W05, 17W10, 17W12, 17W13, and 17W15, and not on a collection of purge water from multiple wells.

2. **Comment:** Page 18 and 19, Section 2.4.2.1 – The thickness of LNAPL measured in monitoring well 17W15 in 2002 is stated as “0.01 foot” on Page 18, and “less than 0.01” foot on Page 19. Please resolve this discrepancy by reviewing the well sampling forms and determining if the thickness of LNAPL was less than, or equal to, 0.01 feet.

Response: The text will be corrected to state that LNAPL was measured at well 17W15 as 0.01 foot in 2002.

3. **Comment:** Page 43, Section 5.4.4.1 – The last sentence of the second paragraph is missing a period.

Response: Comment noted. The error has been corrected.

4. **Comment:** Label the oil/water separator on all appropriate figures.

Response: The former oil/water separator will be labeled on all appropriate figures.

RESPONSES TO EPA COMMENTS

1. **Comment:** EPA is concerned about the Navy's continued assumption that the site poses acceptable risks to the Mare Island community, and that the proposed removal action is only to address the presence of free product to meet the Applicable or Relevant and Appropriate Requirements (ARARs). EPA requested the additional collection of soil gas data to evaluate the vapor intrusion pathway was because the Navy's risk assessment was incomplete. Navy's assumption that the property is only planned for future use as a parking lot does not relieve the responsibility to prepare a complete Human Health Risk Assessment for this site that addresses all possible future land uses, in order to determine what future land use controls may be necessary as part of the final remedy for the site. In addition, Navy's risk assessment has neglected to consider the City of Vallejo's immediate planned use for the most contaminated portion of IR 17 as the main utility corridor for the future Mare Island development, including university campus, residential housing and a cancer treatment center. Navy's risk assessment must address the potential for the utility corridor to open a preferential pathway for vapor intrusion from this site to reach new construction served by these utilities. EPA anticipates that Navy will be developing risk based cleanup goals for this site to address these concerns.

Response: The Navy has completed additional risk evaluations to address the vapor intrusion pathway to potential hypothetical future residential and commercial/industrial worker exposure scenarios. In accordance with EPA and Navy risk assessment guidance, the risk assessment has addressed planned reuse of the site (light commercial/industrial). The removal action identified through the EECA/IRAP will consider cleanup goals that are risk-based or driven by ARARs.

2. **Comment:** We did not find California Assembly Bill 422 listed as an ARAR for this site, which sets forth specific requirements for evaluation of potential exposure to volatile organic compounds that may enter existing or future structures. These requirements also specify that the risk evaluation consider sensitive populations (in this case, cancer patients) as well as possible synergistic effects of cumulative exposures. A copy of the new law is enclosed for your information.

Response: It is the Navy's position that the requirements of Assembly Bill (AB) 422 found in California Health and Safety Code Section 25356.1 and California Water Code Section 14404.2 are not potential ARARs. These provisions require that exposure assessments prepared pursuant to the California Superfund Act include the development of reasonable maximum estimates of exposure to volatile organic compounds that may enter structures on site. These types of statutes and regulations that address site investigation requirements are not typically included as ARARs. For example, the Navy does not identify the sections of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) that govern feasibility studies as ARARs, though it follows those requirements when preparing the documents. Similarly for risk assessment, the Navy does not identify the Superfund Risk Assessment Guidance as a requirement "to be considered", but it follows the guidance. The same is true of AB 422. The Navy has conducted a vapor intrusion investigation in response to regulatory comments on the RI report indicating that the HHRA for the vapor intrusion pathway was incomplete. This investigation addresses vapor intrusion and complies with the intent of the AB 422 requirements; however, AB 422 itself (or the statutes it amended) is not an ARAR.

REFERENCES

- California State Assembly. 2007. Bill No. 422, Chapter 597, "An act to amend Section 25356.1.5 of the Health and Safety Code, and to add Section 13304.2 to the Water Code, relating to hazardous substances." October 13.
- ChaduxTt. 2008. "Draft Engineering Evaluation and Cost Analysis/Interim Remedial Action Plan, Installation Restoration Site 17 and Building 503 Area, Former Mare Island Naval Shipyard, Vallejo, California." November 7.
- ChaduxTt. 2009. "Draft Field Investigation Summary Report and Vapor Intrusion Risk Evaluation for Installation Restoration Site 17 and Building 503 Area, Former Mare Island Naval Shipyard, Vallejo, California." January 6.
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Steven Bradley, Contract Manager

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