Response to Comment Table for the Draft Site Inspection Report
April 2005
Benicia Arsenal, Benicia, CA

Comment No.	Page/Section	Agency Comments	Response to Comments
General Comments by Christine Parent, DTSC Project Manager, September 9, 2005			
1.	General	The report presentation is generally clear and comprehensive for the work presented. The report is organized to be as readable as possible, given the scope of the information included. The figures and maps support the text and generally provide further clarity to what was done, where it was done and the interpreted results of the investigations. What continues to be unclear is if this document is attempting to bridge into the remedial investigation phase under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Given that soil contamination is not delineated, this report is a good basis to move these sites to the Remedial Investigation (RI)/Feasibility Study (FS). Additional work in the RI/FS is needed to delineate several areas which were omitted from the work plan.	**This report was submitted to the DTSC for review on April 15, 2005. The report was finalized September 13, 2005. The DTSC's comments were received on September 20, 2005.** Thank you for providing comments on the report. This report provides data to support that all of the impacted media from known DoD sources have been delineated and as such, this report is a RI. A detailed discussion on the scientific reasons why soil is not the media of concern, except in areas where there was a possibility of a surface release is provided below in the relevant responses. It should be noted that the project objectives were stated in the Field Site Investigation Plan dated April 2004, which the USACE never received comments from the DTSC.
2.	Executive Summary	The executive summary exemplifies some of the areas where the U.S. Army Corps of Engineers (USACE) and the regulatory agencies do not concur and have not come to resolution. There has been no consensus or resolution of disputed sites from the Preliminary Assessment where the Regional Water Quality Control Board (RWQCB) or the Department of Toxic Substances Control (DTSC) did not concur with the USACE dropping out sites or areas for further review. A more detailed discussion of these sites	The USACE takes exception with your global statement that both the RWQCB and DTSC disagree with the selection of sites for investigation. The USACE has not received comments from the RWQCB on this report. The USACE has not received comments from the RWQCB on this report. DTSC and RWQCB reviewed the Draft FSIP dated January 13, 2004. The USACE provided justification during a PA Comment Resolution meeting (March 3, 2004) on why some sites did not proceed into the Expanded SI. At this time DTSC promised

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		is provided in a memo by Mark Vest, DTSC Senior Geologist.	"detailed comments regarding needed site characterization work will be provided to you (USACE) when GSU completes our review of the draft site investigation work plan" DTSC has not provided comments on the FSIP (Dated Jan 13, 2004), where the sampling objectives and investigation process are explained. It should be noted that during the design of the FSIP, the USACE and regulators took part in many project meetings and site visits (2003 & 2004) in which comments from the group were incorporated into the FSIP.

3.	Executive Summary	USACE decided to focus primarily on ground water as an investigative approach to further identify and eliminate areas for additional investigation in the expanded site investigation. This approach deviated from the originally agreed upon approach, one that investigated specific areas of the former arsenal in greater detail. The revised approach, which was decided by USACE with no concurrence from the regulatory agencies, covered a greater spatial area of the former arsenal with less detail for each site. DTSC cautioned USACE this approach may limit the usability and validity of data at a number of in progress review meetings and discussions on the revised expanded site investigation. By primarily focusing on one media, ground water, areas and constituents of concerns were short changed in regards to other media, such as soil and air.	The USACE respectfully disagrees that the Expanded SI approach deviated from what was presented to the regulators during 6 meetings and 2 site visits that occurred in 2003 and 2004. Comments from the State regulators during these meeting were discussed and comments were incorporated into the preparation of the Expanded SI Work plan. The Decision Flow Diagram and the list of COIs on Table 1-1 on page 6 was a direct result of those meetings. In comments on the Preliminary Assessment DTSC stated that "detailed comments regarding needed site characterization work will be provided to you when GSU completes our review of the draft site investigation work plan". A Draft Expanded SI Work plan was presented to the State regulators for review on January 13, 2004. After numerous requests for written comments the USACE delivered a Final work plan to DTSC April 13, 2004. The results from the Expanded SI actually support that there is limited soil (less than 2 feet) in the areas of groundwater impact and since these areas are paved with asphalt, sampling this soil would be indicative of anthropogenic sources (i.e. asphalt) and not indicative of any release. DTSC agreed on collecting soil samples at a depth of 2 feet below grade because of the probable impacts from the asphaltic surface. Because of the shallow depth of groundwater and the presence of asphalt, soil samples were not a major portion of the approach for the Expanded SI because it did not make scientific sense. However, where it did make sense, soil samples were collected in areas where there was a possibility of surface releases. Soil is not the media of concern, except at these few locations of possible surface releases.

		USACE was also advised the lack of sufficient soil data would prohibit the completion of adequate site specific risk assessments. This is discussed, in more detail, in comments prepared by Patty Wong-Yim's, DTSC Staff Toxicologist.	
4.	**Section 1 Introduction and Background**	The discussion of the Formerly Used Defense Sites (FUDs) policy reflects the contradictory approach to CERCLA and limitations regarding investigations, as interpreted by USACE, at the former Benicia Arsenal. DTSC does not agree the issues as described by USACE of beneficial reuse, potential responsible parties and restricted access should limit adequate site characterization and appropriate investigation of property used previously by the Army.	USACE understands DTSC's objection with respect to beneficial reuse, access limitations and potential/futuristic exposure. USACE is bound to follow the FUDS policy, which includes guidance in reducing risk to human health and the environment through implementation of effective, legally compliant, and cost-effective response actions.
5.	**Section 1 Introduction and Background:** Page 1, paragraph 4	"Consideration must also be given to the ability to identify Department of Defense (DoD) generated contaminants from contaminants introduced by other Potentially Responsible Parties (PRPs), on or off the FUDS property. If identification of separate contaminant streams cannot be achieved, or if separate remediation of DoD generated contaminants cannot be realized, the project may be ineligible for remediation under the FUDS program." The discussion should be amended to state plainly what is meant by "may be ineligible for remediation under the FUDS program." For example, what conditions must be satisfied to allow remediation and what conditions would absolutely prohibit remediation under the FUDS program, and how does this interpretation not conflict with CERCLA and California State laws and regulations. It is clear that this report was written and reviewed through the USACE, perceived FUDS limitations (Funding and Policy Interpretation) and does not represent, absolve, or provide a resolution for the DoD legal liability for addressing their releases.	The level of detail requested to explain the RPR process is outside the scope of this SI report. The PRP process is outlined in section 5 of the FUDS manual.

6.	**Section 1 Introduction and Background:** Page 1, paragraph 4	"If commingled contamination exists, a PRP project must be initiated and the Department of Justice will negotiate a contribution settlement with the current landowner/responsible party based on a liability analysis." The quoted text in the above comment allows for remediation of commingled contamination under the FUDS program. The significance of initiating a PRP project should be clarified in the discussion.	See response to comment #5 above.

7.	**Section 1 Introduction and Background**	As stated above, there was no resolution of disputed Preliminary Assessment (PA) sites dropped by USACE from further Site Investigation (SI). To state that three sites were added back in seems gratuitous at best.	Army activity ceased at the Arsenal over 40 years ago. Unfortunately there are no identified persons alive that could clearly verify the Army's activities 40 years ago. In addition, historical records are not always clear. USACE will conduct more research if there is more information provided for these sites. USACE has requested from the State regulators and at the RAB for any information that can be provided to substantiate processes and chemicals used during the Army's activities. However, USACE must rely on what is documented and cannot rely on other unsubstantiated information (e.g. hearsay or speculation).
8.	**Section 1 Introduction and Background**	The comparisons of limited soil data results to RWQCB ESLs and the BSLs are not sufficient justification for no further investigative action, and it is contrary to the United States Environmental Protection Agency (USEPA) PA/SI guidance and DTSC's Preliminary Endangerment Assessment (PEA) guidance. Under the Defense Environmental Response Program (DERP), the USACE has stated they will follow the USEPA PA/SI guidance.	The soil samples were collected at sites where there was a possible surface release and were sufficient in quantity to determine if the there was release that may have happened by the Army 40 years ago. USACE used that data to compare with numerical criteria (e.g. RWQCB ESLs, MCLs) to determine if the site required additional investigation. At other sites where DTSC believes soil data should have been collected, there is a reasonable and scientific explanation why soil samples were not collected at those locations. Please refer to the specific comments for those reasons.
9.	**Section 1 Introduction and Background:** Section 1.2 Project Objectives	The fundamental premise of looking only for "predetermined" DoD – related contamination is contrary to CERCLA, California laws and regulations, and results in incomplete characterization of sites.	Contaminants of concern were based on the PA, in that sense, they were "predetermined". USACE is bound to follow FUDS policy and that policy states that environmental response actions are for DoD activities, which equates to DoD-related contaminates only.
10.	**Section 1 Introduction and Background:** Table 1-1. Page 7	Table 1-1 does not address the probable presence of Soil Volatile Organic Compounds (SVOCs).	Please refer to the specific sites commented and the reasons why soil samples were not collected at those sites.
11.	**Section 2 Investigative Approach:** Page 25,	This discussion exemplifies the difficulties of strictly separating out Army and post Army use of chemicals of	USACE agrees that the conceptual site model for the industrial area is complicated such that determining who the responsible

	Section 2.3, Conceptual Site Model	concern, responsibility from source areas, and limited site characterization.	party is even more difficult. However, USACE is bound to follow FUDS policy.
12.	**Section 2 Investigative Approach:** Page 26, Subsection 2.3.2 Pathways and Mobility	"Residual contaminants in groundwater may impact soil secondarily when contaminated groundwater adsorbs onto particles when groundwater naturally rises and falls. Therefore, any impacted soil found is expected to be the result of a release directly to the surface soil. For example, spills or disposal in the unpaved areas as shown on Figure 2-2." The discussion should be clarified.	Agreed. These sentences were re-written to state: "Residual contaminants in groundwater may impact soil secondarily when contaminated groundwater adsorbs onto particles when groundwater naturally rises and falls. For example, groundwater levels in piezometers in the industrial area fluctuate up to 4 feet and depth to groundwater is less than 2 feet deep during the wetter months of the year. Therefore, soil could be impacted from impacted groundwater and surface spills may be difficult to distinguish especially with the presence of other anthropogenic sources (i.e. asphalt).
13.	**Section 3 Field Methods and Sampling Rationale:** Section 3.1.2 Soil Samples	The limited soil samples collected during the expanded SI are not adequate to eliminate sites in an investigative approach, nor do the samples provide adequate soil data to complete site specific risk assessments. All soils with elevated contaminant concentrations identified in the SI or before should be carried through to the RI/FS for further evaluation to define the extent of the release and do an appropriate risk assessment.	As stated in the response to Comment #8, soil samples were collected at sites where there was a possible surface release and the amount of sampling was sufficient to determine if the there was release that may have happened by the Army 40 years ago.
14.	**Section 3 Field Methods and Sampling Rationale:** Page 35-42, Table 3-1 Sample IDs; Matrix, and Analysis	Table 3-1 Sample IDs; Matrix, and Analysis illustrates the lack of sufficient soil samples and inadequate to non existent SVOCs analysis.	See responses to Comment #10 and #13.
15.	**Section 5 Data Usability:** Page 63, paragraph 2, last sentence	Last sentence states; "In general, the data collected in support of this investigation are considered usable for the purpose of engineering decision making." Please explain what is meant by "engineering decision making." The DTSC views the areas with insufficient sampling and probable contamination as candidates for the future RI/FS work.	"Engineering decision making" is terminology used to reflect that the analytical results met QA/QC criteria included in the project QAPP.
16.	**Section 5 Data Usability:** Page 63,	The high rejection of results for SVOCs is significant. The loss of data needs to be explained with a more	As stated on page 64, these samples were not meant to provide quantitative values. We sent an extra aliquot of groundwater

	paragraph 6, last sentence	substantive discussion in place of "the results from these samples were not intended to be used quantitatively but qualitatively." Areas where SVOCs were detected should be moved to the RI/FS. Those areas with no SVOC detections should be included in the RI for re-sampling and if SVOCs are detected, these sites should be included in a full RI/FS.	from the mobile lab to EMAX laboratories for SVOCs analysis to determine discrete peaks that were present on some fuel chromatographs. This explanation is provided in the second bullet on page 63.
17.	**Section 6 Results and Analysis:** Section 6.1 Area R, Page 71, Section 6.1.1	Former Burn Cages at Spurs A, E, and G; Additional investigation is warranted at Spur E. Varying wind patterns and inadequate soil sampling indicate that more pervasive sampling is appropriate and should be moved to the RI/FS.	Surface soil samples were collected based on the prevalent wind direction. Since groundwater samples had concentrations less than the ESLs, there was no indication that there would be any source in soil after 40 years since the Army left. Therefore, no soil samples were collected. USACE respectfully disagrees with DTSC's comment for this site to be investigated further.
18.	**Section 6 Results and Analysis:** Section 6.2 Area S, Page 75, Subsection 6.2.1	Firing Range Target Berm; The justifying discussion for no further DoD Action vacillates between the remote location of the area, which is secured under the buffer zone of the Valero Refinery and the supposition that the metals are not mobilizing in soil. A former firing range is likely to have residual metal contamination at or within a foot of the surface for an indefinite amount of time after use, if no skimming of the soil occurred. Additional investigation is warranted.	The statement that metals are not mobilizing in subsurface soil should not have been stated based on the data collected. (Same comment and response as Comment #56a).
19.	**Section 6 Results and Analysis:** Section 6.2 Area S	There has been no investigation of the Army actions and impacts on what is now the Valero refinery. It is documented that portions of the property stored and expended munitions. MD and MEC have been found on the property and there has been limited attempt to determine the extent of the potential risk.	DTSC did not comment in the PA on the Army's activities for Area S, the storage area of the Arsenal and now the location of a major oil refinery. Accordingly, USACE is surprised by this comment in the Expanded SI Report. In any event, there is no evidence of any potential environmental concerns related to the storage igloos that were present or the ones that remain within the boundaries of the current Valero Refinery. In regards to the comment about MD and MEC, this is outside the scope of this HTRW investigation and will not be responded to in this table.
20.	**Section 6 Results and**	Sites surrounding the former NIKE Missile Assembly	The box is referring to the non DoD solvent plume upgradient

	Analysis: Section 6.3 Area W, Page 77, Subsection 6.3.1	Facility (the Septic Tank 194, Waste Areas, Open Ditch, CL1 and CL2); It is unclear what the qualifier in the box is meant to achieve. The text in the box states: "Non DoD upgradient solvent plume may extend beneath the former NIKE Missile Assembly Facility. There is also a recent source of diesel fuel." It has not been established that the upgradient solvent plume is non DoD influenced and the presence of a diesel fuel spill may or may not be recent. The full extent of the plume needs to be delineated as part of the RI/FS, since it is unclear what is coming from this area and what is coming from up gradient area(s) and where.	of CL1 at 4186 Park Road and the increasing trend of diesel fuel that is occurring in Valero Refinery Well 117. It is USACE's position that since the Army left in 1964 and if diesel fuel was spilled by the Army, it would not just be spiking in 2005. The Expanded SI intended on sampling at CL1 to determine any DoD contributions but the landowner refused USACE right of entry. There is nothing that USACE can do without access to this property. USACE would appreciate any help that DTSC or RWQCB could do to persuade the landowner to grant a ROE with USACE. The RWQCB was recently contacted to determine the status of the known upgradient solvent plume at 4186 Park Road status. The RWQCB case worker, Ms. Mary Rose Cassa, indicated that the project is still ongoing and that she did not agree that the previous investigation conducted to delineate the extent of the groundwater plume to the south, toward CL1, was complete. It is still USACE's position that the TCE detected in groundwater beneath CL1 could be from 4186 Park Road. Therefore, USACE respectfully disagrees with DTSC's comment for this site to be investigated further upgradient of CL1.
21.	**Section 6 Results and Analysis:** Section 6.4 Area M, Page 95, Subsection 6.4.2	Popping Pot (also known as the Armored fighting Vehicle); Although some removal occurred at and around the site, residual soil contamination is likely and no site characterization has been completed. Irrespective of the results from further investigation at the Post dumpsite, this area should have been characterized prior to Caltrans actions of altering the area with the bridge construction. It is unclear what the future ramifications may be in this area.	The USACE respectfully disagrees and considers the site appropriately characterized based on the limited access and use restrictions.
22.	**Section 6 Results and Analysis:** Section 6.4 Area M, Page 101, Subsection 6.4.3	Salvage Yard; This site warrants soil samples, a designation of no further action is not justified. A statement that the Army did not use or manufacture items composed of phthalates can not be supported by relying on historical Army records that have a high probability of being incomplete. Also, as Mark Vest points out in his	USACE appreciates DTSC providing additional information that may aid in the understanding of chemicals identified during the Expanded SI. The reference provided by Mr. Vest (Comment #63) states "Dimethyl phthalate, benzyl benzoate, and other insect repellents discovered and developed for military and subsequent civilian use" in 1942. Also Dimethyl phthalate is a

		comments, the DoD did use phthalates and lack of known limited records is not an appropriate factor to discount the finds. The Records Research Report, Inventory Project Report, Archive Search Report, and other historical records search have been agreed upon by DoD to be of limited use, since the reports seldom indicated all of the quantity, quality, type of materials used, handling and disposal practices for all activities normal practices, etc., at an industrial complex of this nature.	component of solid rocket fuel used in NIKE missiles. Please see the explanation why these contaminants are not a DoD contaminant of concern at the Arsenal in the response to Comment #63.
23.	**Section 6 Results and Analysis:** Section 6.4 Area M, Page 103, Subsection 6.4.4	Fillsite 3: The lack of soil samples and appropriate analytical work does not justify a recommendation for no further action. Based on limited samples and analytical work, this site should be moved to the RI/FS.	Since groundwater samples had concentrations less than the ESLs, there was no indication that there would be any source in soil. Therefore, no soil samples were collected. USACE respectfully disagrees with DTSC's comment for this site to be investigated further.
24.	**Section 6 Results and Analysis:** Section 6.4 Area M, Page 104, Subsection 6.4.5,	Former Vehicle Maintenance Buildings (T222, T221, 171, 172 and TO 73): There is insufficient data to support a no further action at and around these former buildings. The fact that chloroform was detected, red flags the area for additional investigation. Based on limited samples and analytical work, this site should be moved to the RI/FS.	There is no soil and no groundwater in the area of these buildings. Chloroform was identified in very low concentrations (160 ppbv) in one of three soil gas samples collected. Based on this data, there is no prevalent plume. Therefore, USACE respectfully disagrees with DTSC's comment for these buildings to be investigated further.