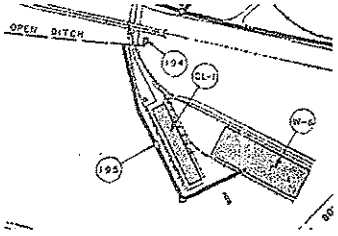
Benicia Arsenal Project and FUDS Programmatic Issues Meeting[1]		
Issue	**Regulator Position**	**DoD Position**
Land Use Controls for the Arsenal?	Is there an implementation plan for the Arsenal? Needs to be part of the remedy.	None. USACE has no authority to impose LUCs on private property. LUCs will be discussed in the Feasibility Study.
FUDS PRP process	DTSC does not want the process to stop when the site is turned into a PRP. If it's joint responsibility (DoD and the property owner) why would the PRP process absolve the USACE?	It does not, but under the FUDS policy, monies cannot be spent on investigation if a PRP situation is indicated.
FUDS definition of "beneficial use"	DTSC and RWQCB do not agree with the USACE's use and definition of "beneficial" use.	"The use of a FUDS eligible real property or appurtenance for any purpose by an individual or non-DoD entity subsequent to DoD ownership, use, or control." [FUDS Policy Manual. 10 May 2004, Glossary]
CERCLA/Clean Water Act vs FUDS Policy	It does not meet CERCLA or the Clean Water Act	USACE believes that they are following CERCLA
Document review by Regulators/USACE	Verbal comments are not considered. USACE is more worried about us meeting our deadlines than the other way around.	USACE trying to meet schedules and asking for regulators to meet them in return.
Sediments/Storm Drains	RWQCB does not agree with the FUDS policy that has determined that storm drains are ineligible because of "beneficial use." Because of this categorization, the storm drains and the sediments in them are not being investigated.	From earlier discussions, FUDS policy prohibits the investigation of sites or structures that have been beneficially used.
Surface Soil Data	DTSC does not agree with the approach to not collect surface soil data beneath asphalt. The lack of data will impact the risk assessment.	USACE and the regulators worked through a compromise in the Expanded SI where surface soil was collected where there is a potential for direct exposure (i.e. unpaved areas) or at a depth of 2 to 5 feet below subgrade materials (i.e. asphalt). USACE's opposition in collecting soil samples below asphalt to 2 feet bgs is the contaminants that will be reported from these materials.
PA sites categorized as NDAI because they were beneficially used or there are no documented sources	DTSC and RWQCB do not agree with the use and definition of "beneficial" use or not investigating because of the lack of documentation.	From earlier discussions, FUDS policy prohibits the investigation of sites or structures that have been beneficially used. Additionally, investigations can not occur if there is no indication of a possible source.
ARARs identification for the Arsenal	RWQCB anticipates that the identification of ARARs for the Arsenal will be an issue	Agreed.
OE Cleanup "standards" performed	Was the clean-up at the Arsenal performed at "standards" that meet DTSC's requirements?	There is no cleanup standard/process for OE. USACE has performed the clean up to the "standards" required by Huntsville.

[1] Remedial Project Management Meeting "Brainstorming" Session, April 6, 2005, at Brown and Caldwell's Rancho Cordova office. Attendees RWQCB, DTSC, RAB Community Member (John Ash), and Brown and Caldwell.

PA Sites

Comment Resolution Meeting[2]
about Comments on the Preliminary Assessment for the Benicia Arsenal[3]
Updated based on Expanded SI data

No.	Issue	Site	Regulator Position	DoD Position
11	No documented source	Building 195 (Septic Tank) X:6525607.45 Y:1786335.04	DTSC and RWQCB disagree on the NDAI categorization based on USACE argument that the structure may have been beneficially used. The site should be reclassified as Further Action Recommended (FAR).	The building 195 septic tank is listed on the *Revised Building Dimensions* (ref 167) as a miscellaneous structure with a volume of 26,000-galllons. The 1958 *General Utility Map – Sanitary Sewer* (updated in 1962) (ref 636) and a 1952 sewer survey (ref 405) shows the location of this tank on the south side of CL 1 (see map below). Influent into the tank came from CL1 and W-6 (storage facility for NIKE missiles and components). Drawing 5789, dated 18 February 1955, shows the location of the septic tank with dimensions of 12 feet wide by 34 feet long with a 6-inch clay influent pipe connecting the tank with the toilets inside the building (ref 605). Outfall from this tank is conveyed into the Open Ditch (investigated in the Expanded SI). Drawing 6018, dated 14 February 1958, details the location of a new 8-inch sanitary sewer line to replace an existing sewer line that was already connected to an existing manhole. The manhole connected to the sewer line from the building (ref 604). The septic tank is not shown on the drawing or any indication to remove the tank. Based on common structures (e.g. fire hydrants, fence lines) shown on both the 1955 map (septic tank shown) and the 1958 drawing (septic tank not shown), it appears that the septic tank had already been removed maybe during the rehab of CL1.  New information was found during the compilation of this summary for this septic tank. The septic tank was likely removed before the Army left and not as stated in the Preliminary Assessment still remaining after the Army left. The recommendation of NDAI still stands based on the facts that septic tanks are vessels for holding human wastes. Therefore, the categorization of this structure is no DoD action indicated (NDAI). *Details about CL1:* CL1, built in 1942, was a link loading plant that linked and belted up 500,000 rounds of .30 and .50 caliber ammunition daily from 1942 to 1943 where 1,200 workers were employed. The mission of the Arsenal changed from small arms ammunition activity to transshipment depot for holding and storage of all classes of ammunition and explosives for the Port of San Francisco in 1943, including CL1. From 1943 through the early 1950s, CL1 was used to renovate and reclaim returned materiel from WWII

[2] Preliminary Assessment Comment Resolution Meeting with USACE, DTSC, and RWQCB on March 3, 2004 at Brown and Caldwell's Rancho Cordova office.
[3] Preliminary Assessment for the Benicia Arsenal. 2004. Prepared for the USACE, Sacramento District. March.

Note: Coordinate System: State Plane California Zone II, NAD 1983 (feet)

Comment Resolution Meeting[2] about Comments on the Preliminary Assessment for the Benicia Arsenal[3] Updated based on Expanded SI data				
No.	**Issue**	**Site**	**Regulator Position**	**DoD Position**
				and the Korean conflict. Some of these activities included the repacking of propellant powder. Communication in 1954 indicated that the Arsenal was assigned the mission of rebuilding NIKE guided missile propellant systems and internal guidance systems. It was not until October 1955 that this activity was officially incorporated in the Arsenal mission. The building was renovated in 1956 to include a paint booth, steam cleaning room, and flushing room. Utility lines were installed to convey the steam from CL2 (boiler room) to CL1 and condensate return lines from CL1. New drains were installed from the flushing room to the new open bottom field drains. A new above ground oil tank was installed outside of CL2 to fuel boiler. Investigation at CL1, CL2, and the open bottom field drains was planned during the Expanded SI but access by USACE was denied by the landowner. *Post Army uses of CL1*: 1968-1977: assembly of auto parts including jacks and safety belts, 1969-1977: manufacture of electrical equipment. Current use is a recycling separation facility (paper waste, bottles, and cans). *Expanded SI Results Open Ditch.* Three groundwater samples were collected in the open ditch for diesel, motor oil and gasoline range hydrocarbons and VOCs. Motor oil range hydrocarbons were reported at 1,800 micrograms per liter (ug/L) in one sample and MTBE concentrations up to 4.2 µg/L in all three samples. Motor oil has been attributed to an unknown source area being detected in Valero Well 117, approximately 400 feet east of the Open Ditch. Since monitoring began in 1992, diesel fuel and motor oil concentrations were first reported in this well in 1997 and have been rising (in 2003 diesel concentrations were 400,000 µg/L and motor oil concentrations were 9,700 µg/L). Since the Army left over 40 years ago and these contaminants are just being found in water samples along with MtBE is present, the source of the contamination must be from a post Army source.
12	Post Army Beneficial Use[4] of structure	Rail yard X: 6523143.37 Y: 1789245.99 *Coordinates represent center of Railyard.*	DTSC said the PA states that waste oil was used as an herbicide and sprayed along the tracks. DTSC asked USACE to find evidence of beneficial use. Either way, DTSC will disagree on the NDAI categorization based on USACE argument of beneficial use. The site should be reclassified as FAR.	The railroad tracks were used after the Army left. Therefore, the categorization is NDAI.

[4] Definition of Beneficial Use per FUDS (FUDS Policy Manual, 10 May 2004, Glossary): "The use of a FUDS eligible real property or appurtenance for any purpose by an individual or non-DoD entity subsequent to DoD ownership, use, or control." Text used in Benicia Arsenal documents: "Under the FUDS program, land that was previously utilized by DoD and that has no "beneficial use" history will be characterized and, if necessary, remediated to an appropriate standard. "Beneficial use" of former DoD land is defined as activity by subsequent landowners or lessors that would either mask contamination caused by DoD or continue contamination in the same manner."

Comment Resolution Meeting
about Comments on the Preliminary Assessment for the Benicia Arsenal[1]
Updated based on Expanded SI data

No.	Issue	Site	Regulator Position	DoD Position
13	Post Army Beneficial Use of structure	Building 74 (photography lab – former bakery) X: 6522239.56 Y: 1778491.69	DTSC disagrees on the NDAI categorization based on USACE argument that the sewer system was beneficially used. The sewer system should be reclassified as FAR.	Built in 1921, the 1961 Facility Data report (ref 196) indicates that its designation was a bakery but it present use was a "photo lab". There are no drawings found of the building layout. The building remains. Post Army uses included: 1973: Candy manufacturing, Benicia Candies (ref 418). 1973: Instrument gauge repair, Instrument Service Co (ref 418). Leased to Jim Dunlop from 1976 to 1977 (ref 584). This building is located in the area of the lower Arsenal where bedrock is very shallow. An attempt to get a groundwater sample in this area was unsuccessful. Post-Army use occurred until at least 1974, which presumably benefited from the existing sewer system at Building 74. Therefore, the categorization of this building is NDAI.
14	Post Army Beneficial Use of structure	Building 92 (headquarters/office building/ photographic lab) X: 6521727.77 Y: 1779166.33	Same position as for Building 74.	Built in 1942, the 1961 *Facility Data* report (ref 196) indicates that its previous and current designation was an office building (headquarters). According to Mr. Byerrum, a former Arsenal employee, a section of basement used for the photography laboratory prior to closing[5]. Presumably the laboratory was moved from Building 74. Drawings of the laboratory facilities indicate that chemical wastes from the photo processing could have been disposed of without treatment directly into the sewer drainage system Error! Bookmark not defined. Reviewing the documents and maps used in compiling the Records Research Report has not yet uncovered these drawings. A 9 June 1952 Security Branch memo (ref 5) on the "Mixing of chemicals to be used in developing photographs" describes the instructions in making Developer D-88 (distilled water, sodium sulfite, hydroquinone, boric acid, potassium bromide), Bleaching bath R-9 (distilled water, potassium bichromate, sulfuric acid), and Clearing Bath CB-1 (distilled water, sodium sulfite). Post-Army use occurred until at least 1974, which presumably benefited from the existing sewer system at Building 74. Therefore, the categorization of this building is NDAI.
15	Post Army Beneficial Use of structure	Sewer/storm drain system N/A	DTSC and RWQCB disagree on the NDAI categorization based on USACE argument that the sewer system was beneficially used. The site should be reclassified as FAR.	The sewer/storm drain system was beneficially used after the Army left. Therefore, the categorization is NDAI.

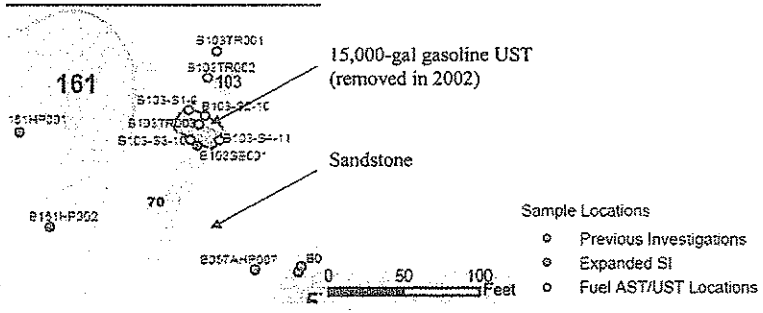
Comment Resolution Meeting
about Comments on the Preliminary Assessment for the Benicia Arsenal
Updated based on Expanded SI data

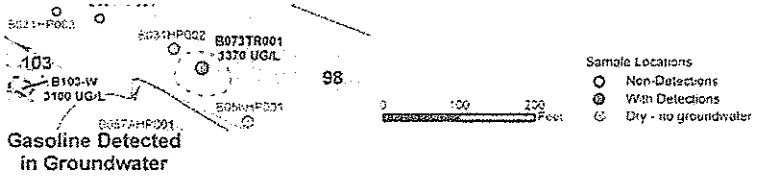
No.	Issue	Site	Regulator Position	DoD Position
16	Post Army Beneficial Use of structure	Pistol Range X: 6523105.19 Y: 1781345.28 *(Coordinates represent center of Bldg 7).*	The potential for lead contamination should be investigated. The site should be reclassified as FAR.	Building 7 housed an indoor pistol range and was used by the DoD until 1964 than by the City of Benicia Police Department after the Army left the Arsenal. The range was then removed later (date unknown). Since the range was used after the Army left, the categorization of this structure is NDAI.
17	Post Army Beneficial Use of structure	Building 48 (Process Shop) X: 6523047.38 Y: 1778221.62	The building was investigated by a landowner but it is unknown the completeness of the investigation. Since the Army activities at this site clearly had the potential for releases of fuels, solvents, and metal plating chemical. The site should be reclassified as FAR.	Built in 1911, this building was used as storage facility and then for reclamation and processing shop of stock parts. This building had been in use since closure of the Arsenal. Post-Army occupants included Weldon Leather and a tenant that undercoated automobiles and tested them for water leaks. A 10,000-gallon UST was installed by the landowner. A soil and groundwater investigation was conducted by the landowner. All sampling results were below PRGs for industrial sites. The landowner concluded that no additional work was needed to assess the extent of the release of organic chemicals from Building 48. This building was beneficially used after the Army left. Therefore, the categorization of this building is NDAI.
18		Building 49 (machine shop/fire control) X: 6523246.83 Y: 1778098.53	The building was investigated by a landowner but it is unknown the completeness of the investigation. The site should be reclassified as FAR.	Built in 1862 with an addition added in 1949, this building had a number of uses, such as, machine shop, fire control and optical shop. The building was removed in the 1970s. It was located on top of a low-lying sandstone hill. The landowner performed a soil investigation at potential release locations. The results were reviewed by the Department of Health Services (DHS). DHS recommended no further action and stated that industrial activities could take place at the Site in accordance with local zoning restrictions for maritime industrial use. Post Army use of the building included office space for a construction contractor. The site was recommended with no further action by the regulatory agency, therefore, the categorization of this building is NDAI.
19	Post Army Beneficial Use of structure	Building 57A parkerizing room) X: 6521516.73 Y: 1778470.50	This building lies in the middle of the 50 Series Complex, where TCE has been identified in soil and groundwater. The NDAI is inappropriate at this time and should be made as part of a decision document and/or final remedy for the 50 Series Complex. The site should be reclassified as FAR.	This building had been in use since closure of the Arsenal and features were beneficially used after the Army left. Therefore, the categorization of this building is NDAI.

Comment Resolution Meeting
about Comments on the Preliminary Assessment for the Benicia Arsenal
Updated based on Expanded SI data

No.	Issue	Site	Regulator Position	DoD Position
20	No documentation of a source or chemicals used	Building 98 (carpenter shop/ machine shop) X: 6520806.49 Y: 1778677.30	DTSC disagrees with NDAI.	Built in 1942, the building was used a carpenter shop and then a machine shop. There are no records indicating any inventory of solvents or waste oil used in this building by the Army. The building is currently used as a machine shop. Therefore, the categorization of this building is NDAI.
21	No documentation of a source or chemicals used	Building 99 (storehouse/shop) X: 6522936.23 Y: 1778313.64	DTSC wants USACE to look at the data from the post Army investigation. A post Army occupant was a leather processing facility. The site should be reclassified as FAR.	Used a ball bearing processing plant by the Army. It was demolished in the 1970s. The building was leased to Weldon Leather in 1969. A soil and groundwater investigation was conducted by the landowner. No evidence of release was found. The landowner concluded that no additional work was needed. This building had been in use since closure of the Arsenal and features were beneficially used after the Army left. Therefore, the categorization of this building is NDAI.
22	No documentation of a source or chemicals used	Building 118(B) and 119 (incinerator) X: 6520823.68 Y: 1777846.17 *(Coordinates represent center of Bldg 119).*	DTSC would like soil investigated. Both sites should be reclassified as FAR.	Building 118(B) was built in 1945 and was removed in 1952. Building 119 was built in 1952 and was removed in the 1970s. These incinerators were designed to dispose of scrap and sawdust from the re-sawing of 15,000 to 20,000 board feet of lumber per eight hour shift. There are no records of anything burned except wood (sawdust). The location of the ash from the incinerator is unknown. USACE cannot sample under FUDS policy without an indication of possible contamination. Therefore, the categorization of these buildings is NDAI.
23	No documentation of a source or chemicals used	Magazine 3 (former powder magazine) X: 6525195.02 Y: 1787629.02	DTSC believes the potential for elevated lead concentrations should be evaluated based on a 1988 removal action by the landowner. The site should be reclassified as FAR.	Magazine 3 was completely destroyed in a 1922 fire. There have been many changes in the landscape due to the grading and filling of the area and any lead contamination would be very difficult to find. Currently, the area is an asphalt covered parking lot. Therefore, the categorization of this area is NDAI.
24	No documentation of a source or chemicals used	Building 177 (compressor building) X: 6525523.84 Y: 1786573.61	RWQCB believes that the fuel for the compressor came from somewhere, and there has been no beneficial use. The site should be reclassified as FAR.	Building 178 was built in 1958 to house a compressor to supply compressed air into an adjacent building, CL1. The 1961 *Facility Data* report (ref 196) indicates electrical power of 2,300 V supplied to the building (likely for the compressor). No records indicating a UST existed. There is no environmental reason to investigate this building. USACE cannot sample under FUDS policy without an indication of possible source. Therefore, the categorization of this building is NDAI.

Comment Resolution Meeting
about Comments on the Preliminary Assessment for the Benicia Arsenal
Updated based on Expanded SI data

No.	Issue	Site	Regulator Position	DoD Position
25	No documentation of a source or chemicals used	Building 70 (powerhouse) X: 6521366.73 Y: 1778553.85	RWQCB disagrees that there was no UST associated with this building. The site should be reclassified as FAR.	Built in 1919, the Powerhouse contained a diesel powered generator as an emergency power supply during any World War II blackouts according to a former Arsenal employee. *Analysis of Existing Facilities* (ref 268), dated February 1949, indicates that electricity through an overhead 12 KV line was furnished into the building and then distributed out of the building to the Arsenal facilities. The 1961 *Facility Data* report (ref 196) indicates no UST at this location. The building sits on sandstone. A geophysical survey was conducted at the adjacent building (Building 103, a former service station) to the north of Building 70, where a 15,000 gallon gasoline UST was listed on the 1961 *Facility Data* report. The gasoline UST was found and removed on behalf of the USACE in 2002. Building 103 UST was a former service station. Because of the location of Building 70 in relation to other buildings in close proximity and it being built on sandstone, there is no other location for another UST, if it existed, other than the one found for Building 103 (see map below).  Sample results during the removal of the UST and the Expanded SI reported gasoline in a grab sample from the UST excavation at a concentration of 3,100 µg/L. Diesel and motor oil were reported in one of the seven soil samples collected at a concentration of 500 mg/kg and 2,300 mg/kg (location:B103-S3-10). Error! Bookmark not defined. The extent was defined during the Expanded SI. Based on these results, there are only residuals left from the gasoline UST at Building 103. There was no UST documented or found during the geophysical survey at the most likely location for it. Therefore, the categorization of this building is NDAI.

Comment Resolution Meeting about Comments on the Preliminary Assessment for the Benicia Arsenal Updated based on Expanded SI data				
No.	**Issue**	**Site**	**Regulator Position**	**DoD Position**
26	No documentation of a source or chemicals used	Building 73(A) (former service station and scales) X: 6521663.77 Y: 1778643.20	The PA states that Building 73(A) is not the source of the impacted groundwater but that the source should be determined. This determination constitutes a FAR for this site until the source is identified. (RWQCB)	Built in 1920, Building 73(A) was reportedly a service station with scales. The southeastern corner of Building 98 currently occupies the area where the building was located. Building 98 was built in 1942. It is assumed that the service station was moved to Building 103. A geophysical survey was conducted and a test pit was dug. No UST was found. There is no UST listed on the 1961 *Facility Data* report. Based on soil and groundwater data collected to date, there is no source found in soil to explain the groundwater impacts in the area of this site. Gasoline concentrations of 1,370 µg/L were reported in a grab groundwater sample (B073TR001) collected from the test pit in 2000. TPH soil concentrations were less than reporting limits. The source of the gasoline is difficult to determine because the presence of groundwater in the area was not confirmed in 2004. Based on the historical photos, the area of former Building 73, Building 98, and the 50 Series buildings are sitting on sandstone. Therefore, no groundwater should have been found. However, during the excavation of the test pit, a railroad track and fill was encountered to a depth of 5 feet. The water actually poured into the bottom of the excavation like it was coming from a porous conduit of material. The street along Building 98 contains several utility trenches that intersect groundwater west of Building 73 where groundwater is impacted with gasoline (Building 103). The test pit likely intersected a utility trench which contained impacted gasoline from another source area, like Building 103.  The source of the impacted groundwater is not from activities at former Building 73(A). Therefore, the categorization of this former building is NDAI.
27	No documentation of a source or chemicals used	Building 179 (compressor building) X: 6521714.58 Y: 1778303.20	RWQCB believes that the fuel source was most certainly required for this structure, the site should be reclassified as FAR to determine whether fuel distribution, storage, or uses at this site resulted in a release.	Building 179 was built in 1945 to house a compressor to supply compressed air into the adjacent shop buildings (50 Series Complex). The 1961 *Facility Data* report (ref 196) indicates electrical power of 2,300 V supplied to the building (likely for the compressor). No records indicating a UST existed. There is no environmental reason to investigate this building. USACE cannot sample under FUDS policy without an indication of possible source. Therefore, the categorization of this building is NDAI.

— Corps will reexamine wording

Comment Resolution Meeting
about Comments on the Preliminary Assessment for the Benicia Arsenal
Updated based on Expanded SI data

No.	Issue	Site	Regulator Position	DoD Position
28	Sampling for Emergent Chemicals	Spur A (Burn Cage Area/ Hydrazine Burn Area) X: 6520551.92 Y: 1791815.01 *(Coordinates represent center of Spur A).*	RWQCB disagrees with no sampling for emergent chemicals.	DoD policy on FUDS sites states sampling can only be done for chemicals with PRGs or MCLs.
29	Sampling for Emergent Chemicals	Spur E (Burn Cage Area) X: 6520850.33 Y: 1793634.65 *(Coordinates represent center of Spur E).*	RWQCB disagrees with no sampling for emergent chemicals.	DoD policy on FUDS sites states sampling can only be done for chemicals with PRGs or MCLs
30	Sampling for Emergent Chemicals	NIKE Missile Sites 1 and 2 Site 1 X: 6522434.95 Y: 1785321.41 Site 2 X: 6521256.84 Y: 1783792.33	RWQCB disagrees with no sampling for emergent chemicals.	DoD policy on FUDS sites states sampling can only be done for chemicals with PRGs or MCLs

DTSC PRP Discussion Sites[3]			
Issue	**Site**	**Regulator Position**	**DoD Position**
Preliminary Assessment Sites			
Post Army Beneficial Use of structure	50 series buildings X: 6521516.73, Y: 1778470.50 *(Coordinates represent center of Bldg 57A).*	Requesting further information	Building 57A has been identified as a site that was used after the Army left the Arsenal. Building 57A is part of the 50 Series Complex. The other buildings have been investigated.
Post Army Beneficial Use of structure	Site 195 X: 6525607.45, Y: 1786335.04	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	The railroad beds at the Arsenal N/A	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 74 and Site 92 (former photo labs and associated sewer lines.) 74 X: 6522239.84, Y: 1778491.60 92 X: 6521705.10, Y: 1779173.5	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 98 was a large machine shop (41,349 sq ft). X: 6521806.49, Y: 1778622.30	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 99 was a ball bearing processing plant with solvent tanks. X: 6522936.23, Y: 1778313.64	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 177 was a NIKE missile repair and support facility X: 6525523.84, Y: 1786573.61	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 195 a paint spray booth discharged to 26,000 gallon septic tank X: 6525606.29, Y: 1786334.85	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 48 was a machine shop and painting room X: 6523047.38 Y: 1778221.62	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 49 was a former building had a paint spray booth and solvent usage X: 6523246.83, Y: 1778098.53	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 70 was a former building with potential USTs X: 6521366.73, Y: 1778553.85	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 92 was a former photographic lab X: 6521727.77, Y: 1779166.33	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 98 was a machine shop X: 6521806.49, Y: 1778622.30	Requesting further information	See table above for the PA Comment Resolution Meeting

[3] Briefing Meeting. September 29, 2005 at USACE Sacramento District office. Attendees RWQCB, DTSC, USACE, RAB Community Co-Chair (John Lazaorik), and Brown and Caldwell.

duplicative comments

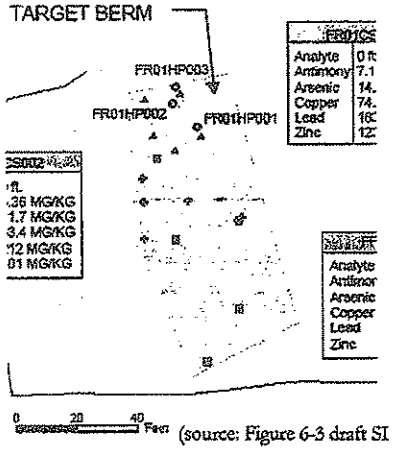
DTSC PRP Discussion Sites[5]			
Issue	**Site**	**Regulator Position**	**DoD Position**
Post Army Beneficial Use of structure	Site 99 activities included degreasing, metal fabrication, and other processes X: 6522936.23, Y: 1778313.64	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 118(B) building operated as an incinerator X: 6520907.04, Y: 1777834.71	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	Site 179 operated as a compressor building X: 6521714.58, Y: 1778303.20	Requesting further information	See table above for the PA Comment Resolution Meeting
Post Army Beneficial Use of structure	USTs at Bldgs 53, 103 and 154 (Potter Property) 53 X: 6521717.21, Y 1778233.87 103 X: 6521409.29, Y: 1778640.30 154 X: 6521294.35, Y: 1778424.91	Requesting further information	Unclear regulator's issue about these tanks. They were removed and investigated.
Post Army Beneficial Use of structure	UST at the former Bldg 161 (Jacuzzi Property) X: 6521321.49, Y: 1778695.02	Requesting further information	Since this meeting, this tank has been removed and the site investigated.

DTSC PRP Discussion Sites				
Issue	Site	Agency Comments	DoD Response to Comments	DTSC Reply
Expanded SI[6] Sites				
Post Army Beneficial Use of structure or there are no documented sources	Former Burn Cages at Spurs A, E, and G X: 6520850.33 Y: 1793634.65 *(Coordinates represent center of Spur E).*	Pages 71 to 75 discuss sampling at assumed up wind and down wind locations near the former spur E ammunition burn cage area. Based on the information provided, it appears that the sampling locations are not correct. The metals concentrations determined from the up wind sampling location (background) are consistently higher than the concentrations from the down wind location. Based on the wind direction (north-northwest) illustrated on the site map (Figure 6-2) the sampling locations are down wind from another burn cage area (spur G). The predominant wind direction reported for Buchanon Field in Concord (~9 miles) is south, and at Travis AFB (~30 miles) is west-southwest. **Recommendation** The area warrants additional investigation because of the uncertainty regarding the predominant wind direction and potential interference from other burn areas at the sample locations.	Pages 32 and 71 include a photograph of burning within the burn cage at Spur E. Features in the background (i.e. Patrol Road and the bridge) and foreground (i.e. berm) were identified to substantiate the orientation of the burn cage, which is south-southeast, as illustrated on Figure 6-2. The photo clearly shows that the wind direction towards the south-southeast. The locations of these samples were discussed and reviewed with DTSC.	We maintain our recommendations. The predominant wind direction has not been demonstrated. The Army response does not address the presence of the burn cage area located in the assumed upwind position relative to the background sampling area (Under the assumed scenario, both data sets would be from down wind locations). Soil samples should be collected from the burn cage locations themselves rather than only down wind locations.

[6] Brown and Caldwell. 2005. *Expanded Site Inspection Report*. Prepared for the USACE, Sacramento District. September, Response to Comment Table for the draft Site Inspection Report, emailed 7/17/06.

Note: Coordinate System: State Plane California Zone II, NAD 1983 (feet)

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI° Sites				
	Former Burn Cages at Spurs A, E, and G X: 6520850.33 Y: 1793634.65 *(Coordinates represent center of Spur E).*	Pages 73 and 74 discuss two ground water samples that were collected in the area of the former burn cage at spur E. The down gradient sample had low-level diesel contamination (210 ug/L). The second sample, collected nearer estimated location of the former burn cage location, had no detected contamination. The conclusion in the draft SI Report is that spur E is not the source of the diesel and no more work is required. Presently, it is not known if the detected diesel in ground water represents a minor release or the margin of a large release. It is also not known how accurately the former locations were determined for the spur E burn cage area and the associated ground water sample. **Recommendation** The ground water contamination should be investigated to determine its source and significance.	The location of Spur E is known fairly accurately based on conversations with the current landowner who knew its prior location and its location was confirmed using the photo. Based on the Expanded SI decision criteria (page 6), another groundwater sample was collected closer to the former location of Spur E and diesel fuel was not present. During the Expanded SI field work, the RWQCB came to the site and reviewed the data. At the request of the RWQCB, USACE agreed to the other sample closer to the former burn cage. The details of this decision were made to DTSC through daily field notes and formally conveyed to DTSC during your site visit. If the results of this sample were non-detect for diesel fuel then the investigation was completed. USACE realizes that the RWQCB and DTSC do not necessarily agree, but in this case, USACE was providing the additional effort at the request of the RWQCB in order to prove that there was no impact to groundwater from the former Army activities at this burn cage. Therefore, USACE's recommendation remains as no further action.	GSU appreciates the additional information. We still disagree with the Army recommendation of no further action in this area. The Army repeatedly said the investigative approach would include tracking ground water contamination back to its source area. This has not been completed. The extent of ground water contamination has not been delineated in this area. Delineation of contamination is part of the decision logic diagram proposed by the Army. As we stated, it is not known if the detected diesel in ground water represents a minor release or the margin of a large release. Accordingly, the ground water contamination should be investigated to determine its source and significance. Based on GSU's review of topographic maps, aerial photographs and the site location map, it does appear that the former location of Spur E is fairly accurately identified.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Firing Range Target Berm X: 6518521.61 Y: 1787160.31 *(Coordinates represent center of firing range).*	Pages 75 to 77 discuss the firing range target berm. Three composite soil samples were collected from the berm. The text indicates that three five-part composite samples were collected from the 150 cubic yard berm so that each sample could represent 50 cubic yards. The site map (Figure 6-3) is not clear. Based on the figure it looks like samples were collected from the back side of the berm. The text says that three borings were hand augered from down slope of the berm. The figure shows the three locations as being in the berm. Also, it looks like more than two-thirds of the samples were collected from the northern part of the berm. The site map (Figure 6-3) shows two complete composite samples were collected from the northern half of the berm and four parts of the third composite sample were from the southern half of the berm. **Recommendation** The text and figure should be checked and clarified.	The text and the figure were checked and the samples were collected as shown on the figure.	Clarification is still needed. The direction of firing should be identified. The figure should be clarified to show if the green shaded area is the entire berm or only the front of the berm. (If the shaded area includes the front and back of the berm, the sampling should be redone to focus on the front side.) The text should explain why most of the soil samples were collected from the northern part of the berm. The text should also explain why the attempted water samples were located within the northern most part of the berm rather than in a location down gradient from the overall berm (in the center of the gully that the berm appears to be constructed across). A temporary well constructed in a down gradient location should be monitored after rainfall events. (Refer to the figure below)  (source: Figure 6-3 draft SI Rpt)

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Firing Range Target Berm X: 6518521.61 Y: 1787160.31 *(Coordinates represent center of firing range).*	Discussing the firing range, Page 77 states *"After decades of precipitation, the analytical data indicates that metals are not mobilizing into the surrounding soil..."* However, surface results for arsenic, copper, and lead concentrations appear to be elevated relative to background indicating mobilization of metals. No subsurface samples were analyzed. **Recommendations** a. The statement regarding metals mobilizing into soil should be removed because it is not supported by the available data (concentrations are elevated and subsurface samples were not collected). b. If the detected concentrations are determined to pose potential health risks (human or ecological) the horizontal and vertical extent of soil contamination should be investigated.	a. Agreed. b. The concentrations will be evaluated in the risk assessment where an updated ambient metals evaluation is in progress. If the concentrations do pose a risk, then the site will proceed into the Feasibility Study.	a. The text should be amended. b. If the detected concentrations are determined to pose potential health risks (human or ecological) the horizontal and vertical extent of soil contamination should be investigated and delineated. Data such as soil volumes, concentrations and treatability should be developed to support a feasibility study.
	Sites surrounding the former NIKE Assembly Facility X: 6525605.49 Y: 1786461.83 *(Coordinates represent center of CL1).*	Page 77 discusses septic tank 194 (former 4,000-gallon septic tank). The former tank location was not investigated. No soil samples were collected and the nearest ground water sample was from about 300 feet away and does not appear to be down gradient of the tank location but ground water elevation contours and flow direction are not provided. **Recommendation** Soil and ground water samples should be collected from the former location of the tank.	As stated for the approach for the Expanded SI, groundwater samples will be collected to determine if groundwater is impacted with volatile organics. If so and the source of the impact appears to be originating from the former septic tank, then the groundwater will be delineated. Soil samples will be collected at the source area depending on the depth to groundwater. If groundwater is deeper than the bottom of the septic tank, then soil samples will be collected, otherwise, no soil samples will be collected since the contaminate pathway was likely directly into groundwater.	Please refer to our reply to #58.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
	Sites surrounding the former NIKE Assembly Facility X: 6525605.49 Y: 1786461.83 *(Coordinates represent center of CL1).*	Pages 84 and 87 propose no further DoD action (NDAI) at the western waste area. Valero well 117 is located near the western waste area and may be down gradient from the western waste area and CL1. Diesel has been consistently detected in Valero well 117. MTBE has not been frequently detected in samples from the well. Page 82 states *"The source of the hydrocarbons is not known but appears to be related to a recent release or discharge in the area"*. On Page 87, the Report concludes that no further DoD action is indicated for the western waste area due to the recent diesel and motor oil detected in well 177. Diesel was detected in ground water at boring SB-C, which is located in the immediate vicinity of the western waste area. No ground water elevation contours are provided to support references to up or down gradient directions. **Recommendations** a. Ground water flow directions should be determined in sufficient detail to guide the sampling for contaminants and interpretation of results in the area of septic tank 194, CL2, CL1, the open bottom field drains, and the eastern and western waste areas. b. The reasoning for the assumed age of the contamination detected in well 177 should be clarified in the draft SI Report. c. The text should discuss if the diesel analytical results appear to indicate fresh or weathered fuel. d. The text should discuss the significance of the very low frequency of MTBE detections in well 117 versus MTBE	a. There is not enough data to support drawing a groundwater elevation contour map, because, access to this area has been denied, however, the general groundwater gradient as determined from nearby wells indicates that groundwater is flowing from the north to the south. i.e. 4186 Park Road appears to be upgradient of site CL-1. As stated in the report access was not granted, so no further investigation is possible. b. Based on findings at other petroleum sites diesel fuel flows relatively quickly through soil to groundwater. As stated in the response to Comment #20, it is USACE's position that since the Army left in 1964, any diesel fuel that could have been spilled by the Army, would not just be spiking in 2005. The USACE is the only agency seeking rights of entry to these sites c. Review of the chromatograph for the sample collected from Valero Well #117 during the Expanded SI is not definitive because of the low concentration (330 ppb) and the occurrence of single peak that dominates the graph. This is one of the peaks that we attempted to identify through the SVOC analyses as described in Section 5 of the report. d. This comment is unclear, since MTBE is a recent contaminant and in no way indicates the presence of the DOD related contamination that is the subject of this report. e. The draft text was provided to Valero for review. They have asked that text be added to the final report that states: "According to the Valero Refinery, a detailed evaluation was performed in 1999-2000 that showed the contaminants detected in Valero Well 117 are not related to Valero activities and do not originate from the Valero Refinery property (URS, 2003). The source of the hydrocarbons is not known but appears to be related to a recent release or discharge in the area."	GSU maintains our recommendation that ground water flow directions should be determined in sufficient detail to guide the sampling for contaminants and interpretation of results in the area of septic tank 194, CL2, CL1, the open bottom field drains, and the eastern and western waste areas. (Generally, the area illustrated by Figure 6-4 of the draft SI Report.) a. We know there are presently not enough data to draw ground water contours in this area. Nevertheless, site-specific flow directions are needed to support the claims that ground water has been sampled from locations that are down gradient from potential sources. Especially in areas of low topographic relief, ground water flow directions are needed to support the selection of locations for down gradient sampling. Changes from expected or assumed flow directions may result from ground water flowing toward or away from influences such as marshy areas, ponds, channels at the ground surface, buried ancient channels, tides, leaking water supply lines, and gaining or loosing sewer drains and storm drains. Many of these features are present in the local area. Flow directions should be developed based on ground water elevation contours. Ground water flow directions may vary daily and seasonally. The only figure provided that shows hydrogeologic features in the area is Figure 6-6 (Geologic Cross Section A-A' from 4186 Park Road to Former Nike Assembly Facility). The cross section does not present data demonstrating that contaminated ground water is flowing from the 4186 Park Road area to the CL1 area. The figure is a cross section that cannot demonstrate the ground water flow direction. Also, the ground water elevation data that are illustrated on the cross section are identified as estimated. The first encountered and static water symbols seem to be reversed. In several cases, the water elevations are increasing in what is proposed to be the down gradient direction. b. The response is acknowledged. c. The response is acknowledged. d. The recommendation is to discuss the significance of not detecting MTBE in the ground water samples from Well #117. Refer to Table 6-5 of the draft SI Report where MTBE is reported in 2 of 33 samples and gasoline is reported in 24 of 33 samples. Since MTBE is a recent contaminant, its absence associated with gasoline hits indicates the potential presence of DOD related contamination. e. Response acknowledged.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		detections in other samples. e. The text should discuss whether the contamination detected in well 117 has been interpreted to be part of a larger release or contaminant plume by Vallero, their consultants, or the Regional Water Quality Control Board. f. Potential DoD related sources that may be located up gradient of well 117 should be discussed (CL1, CL2, western waste area) including the possibility of DoD fuel storage tanks for generators at CL1 and CL2, or disposal at the western waste area. g. The extent and distribution of fuel contamination in the area should be further investigated to determine its source and potential significance.	f. There are no known possibilities of upgradient (north) sources to CL1. CL2 is located to the west of the CL1 and since access is denied the USACE cannot evaluate these sites further. g. Evidence indicates that fuel found in Valero Well 117 is from a recent source. USACE respectfully disagrees with DTSC's comment for this fuel contamination to be investigated further since it is beyond the scope of this report, which is DOD related contamination only.	f. The ground water flow direction in the vicinity has not been demonstrated. But, assuming flow to the south, CL1, CL2, and the western waste area are potential source areas for contamination in Well #117. The likely possibility of Army fuel storage tanks for generators at CL1 or CL2 should also be considered as potential sources. (According to the draft SI Report, a 3,180-gallon UST was installed near CL2 and no documentation of a removal is available. Also according to the report, gasoline powered compressors were used at CL1.) g. The recommendation to investigate further includes contamination in the general area illustrated on Figure 6-4 of the draft report.
	Sites surrounding the former NIKE Assembly Facility X: 6525605.49 Y: 1786461.83 *(Coordinates represent center of CL1).*	Pages 83 to 87 discuss CL1 and the eastern waste area. According to Page 83, toluene, ethylbenzene, and xylenes were detected at URS boring SB-C. The contaminant concentrations should be illustrated but are not on Figure 6-4 (all detected results above the MDLs). **Recommendation** The apparent discrepancy should be resolved.	Agreed. Groundwater sample results for SB-C were inadvertently left off Figure 6-4. The detectable results for this sample are: • 1 µg/L toluene • 1.1 µg/L ethylbenzene • 3 µg/L m,p-xylenes • 0.8 µg/L o-xylenes • 16 µg/L acetone • 5.6 µg/L carbon disulfide • 120 µg/L barium • 1,800 µg/L diesel range organics	The figure should be corrected.

DTSC FRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
	Sites surrounding the former NIKE Assembly Facility X: 6525605.49 Y: 1786461.83 *(Coordinates represent center of CL1).*	On Page 84 the draft SI Report proposes that contamination near the eastern waste area is from an up gradient source. The Report does not provide ground water gradient data needed to support the assumed flow direction. **Recommendations** a. The conceptual up gradient source is possible but should be supported by ground water elevation contour maps and contaminant concentration contour maps. b. Ground water elevation and contaminant concentration contour maps should be provided for the vicinity of the Nike reconditioning facility and the up gradient assumed source area. Maps from the 4186 Park Road work (and related work) should be available and should be presented in the draft SI Report.	a. There is not enough data to support drawing a groundwater elevation contour map. However, groundwater contour maps drawn for the site at 4186 Park Road indicates that groundwater is flowing toward the direction of CL1. As stated in the report access was not granted, so no further investigation is possible. b. The scope of the Expanded SI did not have the resources to include all of the data from 4186 Park Road other than the cross section (Figure 6-5) and a file review that was performed.	a.Please refer to our original comment. b. Please refer to our original comment..
Post Army Beneficial Use of structure or there are no documented sources	Post Dumpsite X: 6525063.38 Y: 1781331.39 *(Coordinates represent center of Post Dumpsite).*	Pages 87 to 95 discuss the post dumpsite (formerly landfill 3). ES-2, paragraph 1 states *"Another contractor identified trichloroethene, diesel fuel, motor oil, and pesticides in soil and groundwater at the post dumpsite. The presence of these contaminants may indicate possible discharge of DoD waste to the area. Further investigation is warranted."* Based on information provided by the Army in the preliminary assessment, the State recommended that the site be investigated as a hazardous waste landfill but the Army analyzed samples for metals only. **Recommendations** a. The paragraph should be amended to mention the detection of vinyl chloride (at 65 ug/L) and cis-1,2-dichloroethylene by the other investigators.	a. Agreed. The sentence should have stated: *"Another contractor identified trichloroethene, cis-1,2-DCE, vinyl chloride, diesel fuel, motor oil, and pesticides in soil and groundwater at the post dumpsite. The presence of these contaminants may indicate possible discharge of DoD waste in the area. Further investigation is warranted."* b. Based on the data reported in the Expanded SI, an additional investigation has been performed at the Post Dumpsite to determine if there is any indication of buried metallic or non-metallic debris using geophysical techniques and extent of the volatiles in groundwater. The geophysical survey indicated that there is no evidence of a landfill. This investigation and the results of the groundwater samples will be provided in a separate letter report. c. As stated in the response to comment #7,	Please refer to our original comment.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		b. The site should be investigated as a presumed hazardous waste landfill. c. It should be recognized as fortunate that another contractor happened to be doing construction work in the area and was aware enough to recognize and address the potential for encountering (and identifying) contamination. d. It should also be recognized that similar construction activities will occur at the Arsenal in the future and a mechanism should be developed to notify persons performing intrusive work that unidentified chemical or explosive hazards exist at the Arsenal.	USACE will reevaluate investigation at a site if additional information becomes available. d. Based on USACE's interpretation of this statement, DTSC is requesting USACE to institute a mechanism that will notify persons performing construction activities of contamination that has not been identified. e. The USACE cannot provide this type off mechanism as requested, when 1) USACE does not know the location of such contamination, or 2) USACE would be presume to be accepting some liability by providing this mechanism when in fact Army activities may have not been the cause, and 3) the USACE has no authority to place any such restrictions on private property.	
Post Army Beneficial Use of structure or there are no documented sources	Popping Pot (also known as the Armored Fighting Vehicle) X: 6524239.52 Y: 1780969.74	Page 95, paragraph 2 discusses the popping pot that was used to burn and destroy ordnance. The text identifies the removal of over 8,000 fuses from the area in November 2001. **Recommendation** The text in that paragraph should be amended to note that the clearance and ordnance removal activities in the area of the popping pot were only partially completed and the popping pot, additional burned ordnance items, and all of the contaminated soil were left in place.	USACE considers the removal activities to be complete. It should also be noted that the USACE has evaluated access to the site and determined that since the popping pot is buried under 40 feet of soil in a steep box canyon where the entrance is locked by Railroad tracks and HWY 80 crosses overhead that access to this area is not justified given the lack of credible risk. USACE recognizes that DTSC does not agree with this statement.	The Army misinterpreted the GSU recommendation. The recommendation has nothing to do with any assumed risk. The recommendation is that the report should be amended to be correct and complete so a reader is not given the incorrect impression that all of the ordnance related items were located or removed.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Salvage Yard X: 6525138.80 Y: 1783937.02 *(Coordinates represent center of Salvage Yard).*	Pages 101 to 103 discuss sampling results from the salvage yard. Fuel, chloroform, and phthalates were detected in ground water samples. Chloroform was detected only at trace concentrations. Chloroform is a possible breakdown of carbon tetrachloride and a common by-product of water disinfection. Phthalates were detected at concentrations greater than proposed screening criteria. The draft SI Report identifies current uses of phthalates based on a reference to an Ohio EPA website and states that historical records for the Arsenal do not indicate DoD use of such items. The text concludes "Therefore, no further DoD action is indicated for the Salvage Yard." Comparing present day uses of phthalates or other potential contaminants to historical Army operations does not make sense. **Recommendations** a. The discussion regarding phthalate use should be amended to discuss common uses of phthalates by the Army during the period of Arsenal operation. For example: o Beginning in 1942, phthalates were developed for military use as insect repellants. (http://entweb.clemson.edu/□esticide/history .htm); and o Phthalates were a component of the rocket fuel used in Nike missiles. (http://www.ed-thelen.org/missiles.html). b. The phthalate contamination should be investigated. c. The historical records of operations at	USACE's research did not find the possible uses of phthalates in the 1940s that DTSC was able to find. The omission was not intentional. USACE appreciates the new information. a. Agreed. Information about possible chemicals that contained phthalates should have been included in the Expanded SI. The websites provided are appreciated. Additional research was performed to determine if there was a possible DoD release that could have been associated with insect repellant and NIKE solid rocket fuel (see research information at the bottom of this response). If the Army stored insect repellant, there is no DoD related source of contamination that may have resulted due to the storage of insect repellant. Additionally, the solid rocket fuel cells were shipped out of the Arsenal when the NIKE missile batteries were dismantled. These cells were not disposed of at the Arsenal. b. Based on the new information provided by DTSC, USACE did not find any new information that would indicate that former Army activities may be the cause of the phthalates found at the Salvage Yard. Therefore, USACE respectfully disagrees with DTSC's comment for this site to be investigated further. c. USACE must rely on what is documented and can not rely on other unsubstantiated information (e.g. hearsay or speculation). However, as stated in the response to Comment #7, USACE will conduct more research if new information if provided. Research Information – NIKE missile propellant systems and internal guidance systems were repaired at CL1, the only location where these activities were performed at the Arsenal. A few NIKE missiles were also likely assembled in CL1. In 1954 and 1955 two batteries took up temporary residence in Area S while a permanent site was	GSU maintains the following recommendations: 1) the phthalate contamination should be investigated; 2) comparing present day uses of phthalates or other potential contaminants to historical Army operations does not make sense; and 3) the historical records of operations at the Arsenal are not complete and should be used carefully. In fact, we are amending our recommendation regarding historical records to state: We do not believe the Army records are detailed or complete enough to support conclusions regarding use or disposal of specific chemicals at a site. If a general type of operation is known to be associated with the common use and spillage of hazardous substances, then documented chemical use or spillage based on Army records should not be needed or expected as a prerequisite for sampling and analysis. In the text, the Army identifies present day uses of phthalates, then notes that historical records do not indicate such uses at the arsenal, and concludes: *"Therefore, no further DoD action is indicated for the Salvage Yard."* We believe that: 1) screening historical Army uses of chemicals against present day commercial industrial uses is not valid; and 2) the Army records are not detailed enough to support the conclusion. We identified documented Army uses of phthalates during the period of arsenal operation and concluded that the phthalate contamination detected in the area should be investigated. However, the recommendation was rejected in the response. In their response, the Army notes that storage is not a release. We would like to note that storage is a common step toward many releases. The Army reply concludes (#63.c.) *"Based on the new information provided by DTSC, USACE did not find any new information that would indicate that former Army activities may be the cause of the phthalates found at the Salvage Yard. Therefore, USACE respectfully disagrees with DTSC's comment for this site to be investigated further."* Again, we do not believe the Army records are detailed enough to support the statement. It should be noted that the Army response and conclusion is an actual application of their responses #49.c. and #63.c. which state: #49.c. *"As stated in the response to Comment #7, USACE will reevaluate investigation at a site if additional information becomes available."* #63.c. *"USACE must rely on what is documented and can not rely on other unsubstantiated information (e.g. hearsay or speculation). However, as stated in the response to Comment #7, USACE will conduct more research if new information if provided."* Apparently, because there are no historical records documenting a release of

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		the Arsenal are not complete and should be used carefully.	being built at the Presidio of San Francisco. One battery remained until spring of 1955 and the other remained until April 1957. The solid fuel cell was added during assembly. Once the missile was assembled it was then transported to the launch area. When the missiles were deactivated at the Arsenal, the missiles were disassembled and the components shipped. USACE regrets if there was any confusion with the word "assembly" used in the title, "Sites Surrounding the Former NIKE Missile Assembly Facility (the Septic Tank 194, Waste Areas, Open Ditch, CL1 and CL2)". This word may have been misleading since assembly was only done rarely and actually the primary activities in the building were to repair propellant systems and internal guidance systems.	phthalate containing materials the Army proposes that there is no need or authority to investigate. We do not believe the Army historical records on the arsenal are detailed enough to support any of their conclusions regarding not using or not disposing of a substance or waste at a site. Regarding the research information provided in the response, it all pertains to CL1, Missile assembly building activities. GSU recommends that the Army should research other former Nike sites to identify what contamination is typically identified during site investigations.
Post Army Beneficial Use of structure or there are no documented sources	Fillsite 1 X: 6522063.18 Y: 1778207.89	Based on limited samples and analytical work, this site should be moved to the RI/FS.	There have been numerous soil and groundwater samples that have been taken at Fillsite 1 because there was a suspected dump. Please review the November 2004 SI Report for the Site Inspection at Fillsite 1 for the data that exists for this site.	
Post Army Beneficial Use of structure or there are no documented sources	Fillsite 3 X: 6524513.30 Y: 1784640.66	The lack of soil samples and appropriate analytical work does not support 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.	
Post Army Beneficial Use of structure or there are no documented sources	Former Vehicle Maintenance Buildings (T222, T221, 171, 172 and TO 73) X: 6522088.51 Y: 1781764.34 *(Coordinates represent center of Bldg T221).*	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.	
Post Army Beneficial Use of structure or there are no	Former Heavy Equipment Yard	There is insufficient data to support no further action at what were paint and	Based on the rationale provided in the Expanded SI where there is shallow groundwater (5 feet bgs or	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
documented sources	(Buildings 50 and 111) X: 6524403.80 Y: 1778343.66 *(Coordinates represent center of Bldg 50).*	equipment shops. Metals, solvents, and other related COIs are probable residuals in soil. Additional investigation is warranted. Based on limited samples and analytical work, this site should be moved to the RI/FS.	less), such as this area, there would be no source of volatile organics remaining in the thin vadose zone soil after 40 years. Therefore, no soil samples were collected.	
Post Army Beneficial Use of structure or there are no documented sources .	Former Store House/Engine Rebuild (Building 31) X: 6521569.77 Y: 1778752.99	Pages 112 to 115 discuss Building 31 (store house/engine rebuilding). Solvents are present in ground water at greater than MCLs. According to Page 112 several USTs were used at the site including both solvent and degreaser tanks. However, the text on Page 115 states *"There is no documented DoD use of solvents at Building 31. Therefore, no further DoD action is indicated for the building."* The statement regarding lack of records is typical, but gives too much credit to Army records regarding chemical use at specific locations. **Recommendations** a. The text should be clarified because it seems like the Army is claiming that there is documentation of solvent tanks but no documentation of solvent use at the site therefore no further action is warranted regardless of the contamination. b. The draft SI Report should be amended to specify what chemical uses are documented at this engine rebuilding shop. c. The nature of the historical operations and presence of the ASTs should be sufficient indication of DoD chemical use in the building. d. A better approach for identifying	The solvent and degreaser tanks were ASTs and not USTs as stated in DTSC's comment. a. Agreed. The statement is not clear. Based on this comment and Comment #26, these sentences are re-written to state: "There is no documentation of the types of chemicals used in the solvent tank in Building 31. There are no sources (e.g. below ground dip tanks or drains) at this building that would indicate a mechanism for a release into the subsurface soil below the building. A risk evaluation is recommended for the impacted groundwater." b. There are no documents that have been found that indicate the types of chemicals used in this building. c. It is not that simple. The operations by the Army at the Arsenal has transformed from the use of acids for degreasing to the use of solvents in very selective locations. Building 31 appears to be one these locations based on maps that indicate a "solvent" tank. d. References like the ones stated in the comment are included in the Records Research Report (Jacobs, 1999) and were used to develop the list of contaminants of concern. e. The Expanded SI delineated the impacts to groundwater from fuels and solvents. The eastern half of the building foundation is sitting on sandstone. Groundwater in this area is shallow (less than 2 feet bgs) and there is a limited amount	The clarification is appreciated. a. The response states *"There is no documentation of the types of chemicals used in the solvent tank in Building 31."* The response illustrates one aspect of the available Army records – they are not complete. b. We do not believe the Army records are detailed or complete enough to support any of their conclusions regarding use or disposal of specific chemicals at a site. c. The Army should provide support for the conclusion that solvents were used in very selective locations at the arsenal. d. The response is interesting when compared to the response to #64.b. and conclusions presented in the draft SI Report. #64.d. *"References like the ones stated in the comment are included in the Records Research Report (Jacobs, 1999) and were used to develop the list of contaminants of concern.* #64.b. *"There are no documents that have been found that indicate the types of chemicals used in this building."* SI Report, Page 115. *"There is no documented DoD use of solvents at Building 31. Therefore, no further DoD action is indicated for the building."* If a general type of industrial operation is known to be associated with the common use and spillage of hazardous substances, then documented chemical use based on Army records should not be needed or expected in order to investigate. e. If the eastern half of the foundation is sitting on sandstone then the footprint of the foundation straddles the weathered bedrock. This means that releases from the building may have discharged to the unconsolidated sediments that comprise the water table water bearing zone as well as discharging directly to the weathered bedrock that comprises the base of the ground water zone studied at the arsenal. These two intervals are generally separated by less permeable bay mud intervals (relatively non-permeable per

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		potential chemical use should be implemented by the Army. The text should be amended to discuss DoD training manuals and instructions for engine rebuilding and references to cleaning, inspecting, and painting engine parts with and without using solvents. e. Additional investigation should be completed to estimate how much the former DoD operations at the building are contributing to the down gradient ground water contamination in the area.	of vadose zone, such that there would be no source of volatiles organics in soil, especially after 40 years. USACE does not think there is any additional investigation needed for this building. USACE respectfully disagrees with DTSC's comment for this building to be investigated further.	the report). Accordingly, water samples should be collected from both intervals at locations that are down gradient from the building and up gradient from other potential sources. According to Figure 6-22, deep samples were not collected from borings at this building or at adjacent Buildings 91 or 91A. It may be that ground water was not present or sampling was attempted but failed at these locations. This matter should be clarified. GSU maintains our recommendation that additional investigation should be completed to estimate how much the former DoD operations at the building have contributed to the down gradient ground water contamination.
Post Army Beneficial Use of structure or there are no documented sources	Former Garage/Repair Shop (Building 42) X: 6521884.78 Y: 1778862.54	Page 115 discusses Building 42 (former garage/repair shop). Chloromethane was detected in both of the two samples analyzed from the site. The text cites some sources of chloromethane and states *"Based on the sources of methyl chloride (chloromethane), there is no known association with historic uses at the former garage/repair shop. Therefore, there is no evidence of a DoD release at this building and no further DoD action is indicated."* The garage/repair shop (Bldg 42) is a potential source for the methyl chloride detected in soil gas. Carbon tetrachloride was commonly used for cleaning and degreasing up to the mid 1960s and can degrade to form chloroform, dichloromethane, methyl chloride, and methane. **Recommendation** The chloromethane detections should not be discounted.	The USACE respectfully disagrees. Based on the following scientific findings additional samples would not serve any useful purpose. This building is built on sandstone bedrock. There is no soil, no groundwater, and the soil gas was collected within the thin (less than 5 feet thick) weathered sandstone. Two soil gas samples were collected and a maximum concentration of 160 ppbv methyl chloride (chloromethane) was reported in the samples. This is not indicative of any significant release. Chloromethane is a possible degradation product of carbon tetrachloride. Carbon tetrachloride (CCl4) degrades into chloroform (CHCl3) to methylene chloride (CH2Cl2) to chloromethane (CH3Cl) to methane (CH4). However, the concentrations of this volatile compound were only detected at a maximum concentration of 160 ppbv. USACE is not discounting the presence of the chloromethane but that it is not at concentrations that would suggest that there is a significant source.	To demonstrate the significance of the detected contaminants, the Army should determine the extent and distribution of chloromethane in the vicinity of Building 41 and other local buildings. The Army seems to agree about chloromethane occurring as a possible degradation of the commonly used solvent, carbon tetrachloride. Now the Army wants to rely on the concentrations detected in the two samples as a reason to stop characterizing the site. Unfortunately, the higher of the two results exceeds USEPA screening criteria. The concentrations of chloromethane detected in each of the two samples collected were 160 ppbv and 90 ppbv. The sample locations were each about 20 feet away from the location of Building 42. The samples were not collected from obvious release areas and the distribution of contamination has not been determined so there is no reason to think that the highest concentrations in the area have been found. The November 2002 USEPA subsurface vapor Intrusion guidance identifies a target shallow soil gas concentration for methylene chloride at a 10-6 cancer risk of 150 ppbv. (OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils) http://www.epa.gov/epaoswer/hazwaste/ca/eis/vapor.htm
Post Army Beneficial Use of structure or there are no documented sources	Former Drum Storage/Maintenance Area (Building 51) X: 6521731.35	Additional soil data should more accurately reflect lead concentration in soil. The statement that the presence of	Additional soil data was collected during the Expanded SI Addendum[Error! Bookmark not defined.] To determine he extent of lead in soil. Mr. Vest's comment (Comment #63) refers to the	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
	Y: 1778834.20	phthalates is not related to any DoD activities is not justified. Based on limited samples and analytical work, this site should be moved to the RI/FS.	association of phthalates in NIKE missile solid rocket fuel and insect repellants. Additional research was performed and the response to his comment indicates that there is no suspected DoD release for these items based on historical use.	
Post Army Beneficial Use of structure or there are no documented sources	Former Dynamometer Shop/Engine Testing (Building 53) UST X: 6521666.99 Y: 1778230.72 *(Coordinates represent center of the UST).*	There are a lack of soil samples and consequently a data gap. Lead could not be laterally of horizontally delineated with what amounts to one sample. Based on limited samples (one sample) and analytical work, this site should be moved to the RI/FS.	The maximum concentration of lead in soil was determined at the source, within the excavation of the former gasoline UST. The extent of the gasoline in groundwater has been defined within close proximity of the former UST. A soil sample was collected during the Expanded SI approximately 25 feet south of the former UST. Lead concentrations were less than BSLs. Because of the hillside adjacent to the location of the former UST (north side) and knowing the lateral extent of the gasoline in the groundwater, the lateral extent of lead can defined based on this one sample.	
Post Army Beneficial Use of structure or there are no documented sources	Former Tool House/Degreaser Pit (Building 59) X: 6521753.89 Y: 1778243.26	There is a lack of metals data and the supposition that DoD did not use solvents for a degreasing operation is highly unlikely given the time period, use of the building and the normal course of business for this type of activity. Based on the limited samples and analytical work, this site should be moved to the RI/FS.	The Expanded SI data does show that groundwater near the building is impacted with motor oil and cis-1,2-DCE. The former activities may have been the result. However, there is a storm drain line away from the east side of this building and this building is sitting on sandstone and there is no vadose zone. Sampling efforts for this report have proven that this system is intercepting shallow groundwater. Concentration of cis-1,2-DCE upstream of Building 59 at CPT boring B120HP003 is 150 µg/L, which is higher than the concentrations of cis-1,2-DCE identified in B059HP001. It is very difficult to say where the source of the cis-1,2-DCE is coming from in the area of Building 59. Since the building rests on sandstone, there are no additional sampling efforts recommended for this building.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Former Tool House (Building 59(A)) X: 6521620.11 Y: 1778232.14	There is insufficient soil sampling and consequently inadequate metals data from around Building 59(A). Based on limited samples and analytical work, this site should be moved to the RI/FS.	Soil samples for metals were collected during a previous investigation and the concentration for lead was presented in the Expanded SI. The concentrations of the other metals are presented in the 50 Series Report (Brown and Caldwell, 2004).	
Post Army Beneficial Use of structure or there are no documented sources	Former Locomotive Building (Building 90) X: 6520832.56 Y: 1779091.19	Pages 131 and 132 discuss Building 90 (locomotive repair building). One ground water sample was collected revealing fuel and solvents in shallow ground water. The extent of contamination is not delineated. No soil gas samples were collected at the building. The building is located at the mapped up gradient end of a large plume of solvent contaminated ground water. **Recommendations** a. Soil gas should be sampled at the site. b. Additional sampling should be completed to delineate the extent of contamination in up gradient directions. c. Additional sampling should be completed to provide data needed to develop contaminant concentration contours and ground water elevation contours. d. Concentration and elevation contours should be developed in enough detail to determine if the detected concentrations are isolated or representative of broad ground water conditions and to estimate the contribution from the site to the large, down gradient plume.	a. Agreed. According to the Process Flow and Decision Diagram on page 6, a soil gas sample should have been collected at Building 90. This was an oversight. The soil gas sample will be collected in a future data gap addendum. b. Based on the geologic cross section E-E' (page 50), there is no groundwater expected on the north side (upgradient) of Building 90. Therefore, the contaminate plume was drawn based on the geologic cross sections and the occurrence of groundwater in neighboring CPT borings. c. USACE respectfully disagrees with DTSC's comment for this building to be investigated further. d. USACE respectfully disagrees with DTSC's comment for this building to be investigated further.	a. The response is acknowledged. It is recommended that the Army complete a survey including multiple soil gas sampling points in the area of Buildings 165, 156, and 90. b. Cross section E-E' (Figure 4-3) is far too generalized to support delineation of the extent of ground water. The horizontal scale on the cross section is one inch equals 200 feet and the vertical scale is one inch equals 40 feet. c. and d. The extent of ground water contamination has not been delineated in this area. Delineation is part of the decision diagram to be implemented by the Army.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Former Machine Shop/Combat Vehicle and Artillery Repair (Building 91) X: 6521352.29 Y: 1778963.97	Pages 132 to 135 discuss Building 91 (former machine shop/combat vehicle and artillery repair) and Building 91A (Former Machine Shop/Engine Rebuild). Like Building 90 (locomotive repair building), these buildings are located at the interpreted up gradient end of a large mapped plume. Also, like Building 90, there are additional contributing sources of contamination down gradient from these buildings. **Recommendation** Additional sampling should be completed to provide data to estimate the contribution from these buildings to the down gradient ground water contamination.	Like Building 90, Building 91 and Building 91A are also constructed on sandstone bedrock, such that the surrounding hillside was carved out to construct these buildings as evidence by the sandstone bluff at the backside of these buildings. There are no sampling locations upgradient of the building. Based on the non-detectable concentrations of TCE in groundwater (Plate 2 in the Expanded SI) in borings adjacent to the front (south side) of these buildings and whatever limited amount of groundwater that is beneath the building, there is no source contributing from Building 91 or Building 91A.	According to Figure 6-22, deep samples were not collected from borings at this building or at adjacent Buildings 91 or 91A. It may be that ground water was not present or sampling was attempted but failed at these locations.
Post Army Beneficial Use of structure or there are no documented sources	Former Machine Shop/Engine Rebuild (Building 91A) X: 6521463.99 Y: 1778881.27	There is a lack of soil data for this building's activities. The statement that, "no documentation indicates that the degreaser in building 91A contained solvents," is not credible. Based on limited samples and analytical work, this site should be moved to the RI/FS.	USACE understands your objection but the statement is correct. Same response as Building 90 for USACE's justification why this investigation is complete.	
Post Army Beneficial Use of structure or there are no documented sources	Former Truck Storage Building/MMW Repair, Motor Vehicle Maintenance Building (Building 93) X: 6521944.11 Y: 1779011.86	Page 135 discusses Building 93 (motor vehicle maintenance). One soil gas sample was analyzed from the 10,000 square foot facility. TCE was detected. The Army proposes to complete a risk assessment for the building. The extent and distribution of contamination at the building is not known based on one data point. **Recommendation** Completing a risk assessment based on one sample point is not recommended because it is unknown if the analytical result is representative of the release.	The soil gas sample was collected near the drain pipes that lead from the steam cleaning room. There are no other drains in this building. The building is constructed on top of sandstone. There is no soil, no groundwater and the soil gas sample was collected near the only drain reported a detection of 30 ppbv TCE. USACE respectfully disagrees with DTSC's comment for this building to be investigated further.	The TCE concentration detected in the sample exceeds screening criteria for vapor intrusion to indoor air contained in the EPA document identified in Comment #65. The contamination should be delineated as per the sampling logic developed by the Army.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Former Battery Charge Building (Building 101) X: 6523453.67 Y: 1778084.92	The lack of soil samples warrants further investigation. Based on the inadequate characterization, limited samples and analytical work, this site should be moved to the RI/FS with a decision matrix for how to address within the RI.	Same response as Building 90 for USACE's justification why soil samples were not collected.	
Post Army Beneficial Use of structure or there are no documented sources	Former Quartermaster Storage/Shop Electroplating (Building 120) X: 6521821.39 Y: 1778456.86	Page 139 discusses Building 120 (former quartermaster storage/shop/electroplating shop) Page 139, Paragraphs 3 and 4 discuss the collection of one soil sample and analysis for metals and cyanide. The text states *"These concentrations are below BSLs and do not indicate a significant DoD release of metals or cyanide to soil."* The text does not mention analysis for cyanide was not completed on soil samples from the site. **Recommendations** a. The text should be amended to be consistent with the work completed. b. The text should discuss the potential significance of not completing the analysis for cyanide at the former plating shop.	a. Agreed. The first sentence in paragraph 3 has been rewritten to state: "Soil samples were collected to determine the concentrations of metals (i.e., cadmium, nickel, copper and chromium) known to used in Building 120." And a second sentence has been added to state: "A soil sample for cyanide was also collected but the soil sample was inadvertently not analyzed at the lab." b. Agreed and the second sentence in paragraph 4 is incorrect. This sentence has been re-written to state: "These concentrations are below BSLs in soil and so not indicate a significant DoD release of cadmium, chromium, copper and nickel." A third sentence has been added to state: "Cyanide was not analyzed in soil. The significance of this data gap is unknown since cyanide concentrations were not reported above the MDLs in groundwater."	a. Response acknowledged. The text should be amended as proposed by the Army to eliminate the discrepancies. b. Regarding the first part of the response, please refer to DTSC HERD comments regarding risk screening methods and BSLs. We disagree with the Army response regarding the potential significance of not completing the analysis for cyanide at the former plating shop. Cyanide is a commonly identified contaminant in soil at plating shops. GSU believes the potential significance of not analyzing the sample is that contaminated soil may be present but remain unidentified.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Former Locomotive House (Building 156) X: 6520909.19 Y: 1779017.18	The lack of soil sampling results in a data gap of potential residual metals in soils. Based on limited samples and analytical work, this site should be moved to the RI/FS.	This building is built on sandstone. There is no vadose zone. There is no groundwater. Soil gas was sampled and concentrations were below reporting limits.	
Post Army Beneficial Use of structure or there are no documented sources	Former Motor Cleaning Building/Steam Cleaning/Paint Spray/Fuel Storage (Building 161) X: 6521299.14 Y: 1778637.99	Relying strictly on historical records to justify no further action when the previous DoD activity indicates that there was a likelihood that solvents were used in the Building, is not supportable. Also, regardless of the UST issue, this site should be further investigated based on the available data. Based on limited samples and analytical work, this site should be moved to the RI/FS.	The UST was investigated in the Fuel Removal Action Addendum Report[7].	
Post Army Beneficial Use of structure or there are no documented sources	Former Reclamation Building/Transport Vehicle Shop (Building 165) X: 6520807.56 Y: 1778938.53	There is a lack of soil samples in which to complete a risk assessment. Based on limited samples and analytical work, this site should be moved to the RI/FS.	This building is located in the lowlands and partially constructed on sandstone. Same response as Building 90 for USACE's justification why soil samples were not collected.	
Post Army Beneficial Use of structure or there are no documented sources	Former Steam Cleaning Building (Building 165A/Former Maintenance Building, Body and Radiator Shop (Building T199) X: 6520494.07 Y: 1778998.06 *(Coordinates represent center of Bldg 165A)).*	There is insufficient data to recommend no further action given the type of use during the Army's tenure. Additional soil and SVOCs sampling is warranted, and the presence of chloroform should not be dismissed without further consideration. Based on limited samples and analytical work, this site should be moved to the RI/FS.	The presence of chloroform was not dismissed but explained in the Expanded SI as to the possible reasons for its occurrence.	

[7] Brown and Caldwell. 2006. Fuel Storage Tank Addendum Report. Prepared for the USACE, Sacramento District. Draft Final. June.

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
Post Army Beneficial Use of structure or there are no documented sources	Former Paint Shop (Building 166) X: 6520931.78 Y: 1778341.07	The Army should be looking for solvents and metals in soil in addition to known COIs for paint and its related processes. Based on limited samples and analytical work, this site should be moved to the RI/FS.	This building is located in the lowlands. Same response as Building 90 for USACE's justification why soil samples were not collected.	
Post Army Beneficial Use of structure or there are no documented sources	Former Bar Stock Building/Storage/Vehicle Shops for Motor Pool (Building 167 and Building 168) X: 6521744.03 Y: 1777904.70 *(Coordinates represent center of Bldg 167).*	Solvents and metals in soil should be investigated further. Insufficient and dismissed data warrants additional review of these areas. Based on limited samples and analytical work, this site should be moved to the RI/FS.	This building is located in the lowlands. Same response as Building 90 for USACE's justification why soil samples were not collected.	
Post Army Beneficial Use of structure or there are no documented sources	Former Storehouse/Shop (Building TO131) X: 6520571.71 Y: 1778067.52	Metals in soils should be investigated. Based on limited samples and analytical work, this site should be moved to the RI/FS.	This building was constructed on sandstone. Same response as Building 90 for USACE's justification why soil samples were not collected.	
Post Army Beneficial Use of structure or there are no documented sources	Not Investigated	Sites not investigated The information below is primarily from DTSC comments on the PA (01/26/04), Army final responses to comments (03/08/04), and meeting minutes from the RPM meeting (03/03/04) where comments and responses were discussed. **Recommendations** DTSC maintains their prior recommendations that soil, or soil and ground water, should be investigated at the following sites. a. Site 195, former 26,000 gallon septic tank. The PA summary sheet indicates the tank was removed post 1954 but that the	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. DTSC and RWQCB reviewed the Draft FSIP dated January 13, 204. 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 "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	GSU maintains their prior recommendations that soil, or soil and ground water, should be investigated at the sites identified in our comment (#70).

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		date is unknown. The summary sheet says post-Army use is unknown. The Army claims beneficial reuse because the tank and building were still there when the Army left and could have potentially been used after the Army left. The source of the Army knowledge that the tank remained is unknown. There is no information provided regarding post Army use of the tank. b. The railroad beds at the Arsenal were sprayed with waste oil to control weeds according to the PA summary sheet. The Army claims beneficial reuse and supports the claim by saying that the railroad tracks were still there after the Army left. c. Site 74 and Site 92 (former photo labs and associated sewer lines. DTSC recommends that soil near the sewer should be investigated for wastes associated with photo shops.) The Army claims beneficial reuse of the sewers and argues that there are no records to indicate that post-Army use did not occur. d. Site 98 was a large machine shop (41,349 sq ft). The PA summary sheet states *"There are no records indicating any potential environmental concerns related to DoD activities at this building."* The site was a machine shop, but the Army appears to need a report of a spill to investigate. It is unclear what event would result in a reported spill during the 1940's through 1960's. e. Site 99 was a ball bearing processing plant with solvent tanks. Contamination was confirmed by a post-Army	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.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		landowner. The Army claims beneficial reuse prevents their investigation of the site or even evaluation of the available information. f. Sites 118(B) and 119 are identified as former incinerator/sawdust disposal systems. DTSC proposed that soil should be investigated for metals, PAHs, and dioxins and furans. The Army says there are no records of anything burning except wood and they cannot sample under FUDS policy without an indication of possible contamination. DoD records not withstanding, it is likely that any waste that would burn without damaging the burner was burned. g. DTSC requested investigation of the sewer/storm drain system. The response stated in part *"USACE says the sewer/storm drain system was beneficially used after the Army left and will not investigate at this point."* h. Site 3 was a magazine that was destroyed in a 1922 fire. A nearby magazine was partially destroyed in the fire. Both magazines were constructed in the 1850's. Samples from soil at the partially destroyed magazine indicated lead concentrations greater than 1,000 mg/kg and up to 14,000 mg/kg. DTSC recommended that the former location of the Site 3 magazine should be investigated for elevated lead concentrations. The Army reply states in part *"There was a possibility of lead contamination in surface soil associated with destruction of the magazine in the 1922 fire but with the changes in the landscape due to the grading and filling of the area, it would be very difficult to find."* i. Site 7 was an indoor pistol range. The		

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		Camel Barn Museum (current tenant of the building) reported that the Benicia Police Department used the range after the Army left, therefore beneficial reuse was invoked by the Army and no investigation has occurred.		
	General comment	**Sampling Density:** We deem that the ESI collected insufficient samples from each environmental matrix, especially for soil and soil gas investigations. Although the ESI covered 53 FAR sites and the former arsenal comprised 2,728 acres; it collected and analyzed only 14 soil samples, 16 soil gas samples, 117 hydropunch groundwater samples, 15 storm water catch basin samples, and 14 groundwater samples.	The number of samples was based on the approach to delineate the main media of concern, which is groundwater. Groundwater is the media of concern, because most sites are built on top of sandstone or groundwater is shallow, such that there is little vadose zone. See an explanation of the approach in the response to Comment#3.	
	General comment	**Background Inorganic Concentrations:** We recommend the USACE to review the USEPA (USEPA, 1989) and DTSC (DTSC, 1994) risk assessment guidance for site-specific background concentration determination. The ESI report provides little information on inorganic background in soil and groundwater. We disagree with the reported background inorganic levels, because of limited background sampling size, sampling locations at some sites, or use of non site-specific background data. More importantly, these background levels are inadequate for risk assessment purposes.	An update to the background data set for soil is being conducted for the risk assessment. The approach for determining background metals concentrations in soil is based on the 1997 DTSC guidance document entitled, "Selecting Inorganic Constituents as Chemicals of Potential Concern in Risk Assessments at Hazardous Waste Sites and Permitted Facilities." A Work Plan of this approach was reviewed by DTSC. The following text is an excerpt from the 50 Series SI (FA/BC, 2004), Section 4, pages 72 and 73. *"This document presents an approach that extracts 'ambient data sets' from larger 'expanded data sets.' Expanded data sets consist of site characterization data that is typically collected to assess the magnitude and extent of possible contamination. Because the number of site characterization samples is usually large, this method does not require the collection of "ambient-specific" or off-site samples. This is a particularly effective technique for soil samples that are analyzed for many metals because a sample contaminated with one metal may exhibit ambient concentrations for the remaining metals. Once the ambient data sets are formed, a concentration that is representative of the upper range of ambient conditions is calculated, and measurements from impacted soil are compared to that limit.* *In general, this method produces more accurate results than*	

Patty's comments response

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
			methods that calculate ambient concentrations from a small number of samples collected from known uncontaminated areas. One reason for this increased accuracy is that the ambient data sets are usually larger than traditional data sets. Also, variability resulting from influencing factors such as soil type is likely to be less for the expanded data set approach because ambient samples are collected in closer proximity to contaminated samples." Therefore, the background data set is adequate based on the number of samples collected. USACE respectively disagrees with DTSC on the "lack of soil data" as provided in previous responses.	
	General comment	**Data Gaps:** HERD identifies several data gaps in the ESI. Table 1 summarizes our recommendations on additional soil and groundwater investigations for each site.	Thank you for providing your comments and taking the time to produce this table.	
	General comment	Insufficient Soil Gas Investigation: The ESI obtained limited soil gas data from very few sites. Since all buildings are actively in use, we recommend additional soil gas investigations for sites with buildings on top of volatile organic chemical (VOC) groundwater plume or potential VOC contaminated soil. Although most of the former arsenal currently supports industrial activities, we observed residential or mixed uses in some buildings at Area I. We consider residents and industrial workers exposure to VOCs through the vapor intrusion pathway a complete pathway.	Soil gas samples were collected on top of the VOC groundwater plume at locations where the concentrations were the greatest and near the building. These locations are Building 165 and the 50 Series Complex. The results from Building 165 are provided in the Expanded SI and the results of soil gas samples for the 50 Series Complex is provided in that SI report. There were minimal concentrations detected in those samples. The exposure to possible residents and industrial workers will be evaluated in the risk assessment.	
	General comment	Inadequate Soil Investigation: We find that the ESI contained limited soil investigations on very few sites. To fill the soil data gap, we recommend additional sampling of surface and subsurface soil for CAM 17 metal, VOC, semivolatile organic chemical (SVOC), and site related chemical of interest (COI; e.g. polychlorinated biphenyl, pesticide, and dioxin) analyses.	See the response to Comment #3 and other responses to other comments about the lack of soil data at individual buildings.	
	General comment	Limited Groundwater Investigation: The ESI provided limited groundwater chemical data (only fuel and VOC analyses on most sites), which inadequately address the needs of risk assessment. To fill the groundwater data gap,	The contaminants of concern addressed in the Expanded SI are associated with possible former Army activities and not based on current uses. These are VOCs and TPH. In some cases metals were addressed	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		we recommend the USACE refer to our specific comments below for additional investigations on each site. As shallow groundwater (6 to 10 feet below ground surface, bgs) underlies certain areas at the former arsenal, especially in Area I, we identify the following groundwater exposure pathways for human: • residential exposure to all groundwater contaminants through drinking water consumption, domestic uses, and vapor intrusion pathways; • industrial/commercial worker exposure to VOCs released from groundwater through vapor intrusion pathway; and • construction/utility worker exposure to all groundwater contaminants through incidental ingestion, direct dermal contact, inhalation of fugitive dust, ambient air inhalation pathways.	at maintenance shops. Groundwater is actually as shallow as 2 feet bgs in the industrial area. The is not to infer that shallow groundwater is at a depth of 6 feet bgs everywhere in the industrial area. • The groundwater plumes located on Benicia Arsenal are all located within a relatively small geographical area. Furthermore, only those groundwater plumes associated with past DoD activity will be evaluated in the RA. The source areas include current PRP properties, and the intent of previous investigations was to identify DoD contamination and delineate the extent of these plumes. The USACE respectfully disagrees that the extent of the plumes was not clearly delineated in the Expanded Site Investigation. USACE will use UCL95s on the entire data set when calculating groundwater EPCs. "Future building locations" are outside the scope of FUDS investigation.	
	General comment	**Screening Levels:** We recommend that the USACE refers to HERD guidance (DTSC, 1994) on use of screening levels on site elimination. We do not allow eliminating site strictly based on individual site-related chemical concentration below a screening level (e.g. Benicia Screening Levels, Environmental Screening Levels, and Maximum Contaminant Levels). More importantly, we do not accept these screening levels in risk assessment processes. In order to support site decisions, we recommend the USACE to conduct screening level risk assessments by including all detected contaminations.	DTSC reviewed and commented on the document that presented the plan for Benicia screening levels (Mark Vest Memorandum to Dave Price,7 July 2000). Further, the DTSC project manager was given a presentation on the intended use of the BSLs (risk based values) in the RA for Benicia Arsenal. USACE received no indication that the BSLs would be considered inappropriate either verbally or in writing from DTSC. Significant resources were used to develop the BSLs, including DSMOA funds for review by DTSC. USACE feels it is inappropriate for DTSC to state that the BSLs will not be accepted at this time.	
	General comment	**Beneficial Uses of Groundwater:** We understand that groundwater at the former arsenal is currently of no municipal use, and potential industrial worker exposure to contaminants in groundwater is mainly through vapor intrusion into indoor air.	Historically the Army has attempted to use the groundwater at the Arsenal for drinking and industry use, but the water was found to be "unfit for human consumption" The hydrogeologic process controlling the water quality is not expected to change in the near future and the groundwater remains undrinkable.	

DTSC FRF Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		However, without certification from the Regional Water Quality Control Board, we must consider that groundwater at the former Arsenal supports all beneficial uses. Furthermore, we disagree with screening groundwater data for the highland areas against the maximum contaminant levels and screening groundwater data for the lowland areas against the environmental screening levels (ESLs). Instead, we recommend conducting screening level risk assessments to support any risk management decisions on sites.	USACE has provided the evidence to support that groundwater in the lowlands meets the exemption criteria such that it is not suitable for domestic water supply. As stated in the responses to the RWQCB comments on the Conceptual Hydrogeologic Model (Brown and Caldwell, 2005), other beneficial uses (e.g. freshwater replenishment to surface water, industrial process water supply) of the groundwater will be considered in future evaluations. However, the USACE will use UCL95s on the entire data set when calculating groundwater EPCs. As stated in the previous response to the comment, numerical criteria (i.e. ESLs, MCLs) were used to determine if further investigation was warranted.	
	Area R – Burn Cages Spur E	Sampling Locations: The ESI collected two composite soil samples each from five upwind locations and five downwind locations. *Upwind Sample:* We recommend that the USACE performs site-specific background soil and groundwater investigations for the Spur and submit for our review. We disagree with deriving ambient concentrations from the upwind soil composite sample. According to Figure 6-2, the Spur E position is downwind of Spur G. Also, past military records suggest use of Spur G for ammunition burning. Taken together, wide spread surface soil contamination at the spurs may contaminate the Spur E "background" location. *Downwind Sample:* The ESI collected a composite soil sample at five downwind locations which are more than 200 feet from the spur, but none at the spur. Considering the relative low mobility of some inorganics and polyaromatic hydrocarbons (PAHs), we recommend further soil investigation near the burn cage area.	USACE maintains that the update of the ambient metals concentrations, which will include all the data collected to date, will be representative per the approach stated in the response to Comment #72. Please also see the response to Comment # 53 about the justification of the surface soil sample locations and the approval provided by DTSC during the planning stages for these locations.	
	Area R – Burn Cages Spur E	Background Concentrations: We recommend the USACE to develop site-specific inorganic background levels for the former arsenal and	USACE maintains that the approach is appropriate (see the response to Comment #72) and was approved by DTSC.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		submit for our review. Table 6-1 includes inorganic background concentrations obtained from a previous site investigation at the Area I 50 Series Complex. Considering the large distance between Spur E (at Area R) and Area I, and heterogeneous geological properties at the former arsenal, we disagree with using Area I ambient concentrations for Area R.		
	Area R – Burn Cages Spur E	Conclusion: Upon examining the ESI results for Spur G, we request more data to support no further DoD action indicated at the former burn cages at Spurs A, E, and G. In order to ensure no significant contamination at Spurs A and G, we suggest random soil and groundwater sampling at these areas. We disagree with deferring all Spurs A and G investigations until the ESI results demonstrate significant contaminations at Spur E. Differences in geological properties, wind directions, groundwater flow directions, and extent of pass burning activities can alter the severity of contaminations among these areas.	The approach for Spur E was agreed upon during the planning meetings with DTSC's input. Comments on the Expanded SI Workplan were not received. Therefore, USACE must assume that DTSC agreed with the approach. USACE respectfully disagrees with DTSC's comment for this site to be investigated further.	
	Area S - Firing Range Target Berm	Composite Soil Samples: Since one of the three composite samples contains 314 mg/kg of lead, we recommend collecting additional soil samples to delineate the extent of impacted soil. Although the composite sampling may benefit preliminary investigations, we do not accept composite soil data for risk assessment because the sampling method averages inorganic concentrations among the locations and leads to risk underestimation.	Since lead concentrations do not exceed BSLs, USACE respectfully disagrees with DTSC's comment for this site to be investigated further, however, if the risk assessment indicates that these concentrations pose a risk, then the site will proceed to the Feasibility Study.	
	Area S - Firing Range Target Berm	Bullet Fragments: We recommend further action to mitigate the bullet fragments in soil, since they serve as a continue source for soil and potential groundwater contamination at/near the target berm.	The remedial action for the remaining bullet fragments in the target berm will be addressed in the Feasibility Study.	
	Area S - Firing Range Target Berm	Extent of Contamination (Last paragraph of Section 6.2.1, Page 77): In the absence of surface soil sampled near the target berm and subsurface soil from the target berm, we	This statement is not supported based on the data collected, as stated in out response to Comment #56a. The sentence should be removed.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		disagree with the statement *"the analytical data indicates that metals are not mobilizing into the surrounding soil"*. Please edit.		
	Area S - Firing Range Target Berm	Conclusion: We disagree with no further DoD action required at the site. We do not accept elimination of this site based on individual detected chemicals below the Benicia Screening Level (BSL), especially a composite soil sample contains 314 mg/kg of lead and presence of bullet fragments in soil.	Based on the data and responses provided in the other comments for this site (Comment #55, 56, 82, 83 and 84), USACE respectfully disagrees with DTSC's comment for this site to be investigated further	
	Area W - Septic Tank 194, Waste Area, Open Ditch, CL1 and CL2 (all surrounding the Former NIKE Missile Assembly Facility)	Buildings CL1 and CL2: *Chemicals of interest*: We recommend including perchlorate and other explosives as COIs in further investigations. The Building CL1 supported renovation and reclamation of returned material from the World War II and the Korean conflict. Past DoD activities included repacking hundreds of thousands of pounds of propellant powder and rebuilding NIKE Hercules missiles. Based on information on NIKE Hercules missile, chemicals used in solid propellants potentially included ammonium perchlorate and polysulfide perchlorate (Ed Thelen's Nike Missile, internet). *Lack of Right of Entry*: Although the ESI conducted no investigations onsite, because the landowner of CL1 and CL2 denies the USACE's right-of-entry, we consider the lack of soil investigation a soil data gap for the ESI and recommend further soil investigation to fill the data gap	Buildings CL1 and CL2: *Chemicals of interest*: USACE is awaiting DoD policy guidance for dealing with emergent chemicals at FUDS sites. Once DoD has receives this guidance, USACE will provide specific responses to DTSC. *Lack of Right of Entry*: As stated in the response to Comment #20, USACE will not conduct any further investigation to determine any contribution of a DoD release to soil and groundwater unless access to the property is granted. Unfortunately the USACE is the only agency seeking rights of entry to these sites even though USACE has requested in writing from DTSC help in acquiring access to this and other sites, which DTSC considers inadequately characterized.	
	Area W - Septic Tank 194, Waste Area, Open Ditch, CL1 and CL2 (all surrounding the Former NIKE Missile Assembly Facility)	Waste Areas: The Waste Areas contain a Western and an Eastern Waste Area, because contamination found in each area was distinctly different. *Western Waste Area*: We recommend the ESI to include previous sampling locations in a figure and provide previous polychlorinated biphenyl (PCB) investigation results. *Eastern Waste Area*: Please clarify whether the	*Western Waste Area*: All of the Expanded SI and the URS sampling locations are posted on Figure 6-4. There are no other known sampling locations. If DTSC is referring to the 1970s post Army cleanup, there were no reports found indicating any sampling locations. USACE requests that DTCS provide more specific information on what "previous sampling locations" DTSC is referring to. According to the URS report, PCBs were "not detected above the laboratory reporting limits in any of the soil	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		ESI conducted any soil investigation at this area and provide the results. We consider the absence of soil investigation and limited groundwater investigation as data gaps. *Conclusion:* Due to the presence of data gaps and significant impact on groundwater, we do not concur with no further DoD action at the site	samples collected." Since PCBs were not detected they were not presented on Figure 6-4. *Eastern Waste Area:* No soil samples were collected in this area. As stated in previous responses, the lack of right of entry to the CL1 property prohibited USACE in determining if CL1 is a possible source area of the impacted groundwater and then depending on depth to groundwater determining if there is still a source in soil. *Conclusion:* USACE stated on page 87 that "USACE will reevaluate CL1 and the eastern Waste Area" pending the investigation at 4186 Park Road because of lack of entry (ROE was refused by the current landowner of CL1). See response to comment #59, 60, and 86.	
	Area M - Post Dumpsite, Popping Pot, Salvage Yard, Fillsite 3, Former Heavy Equipment Yard (Buildings 50 and 111) and the former Vehicle Maintenance Areas (Buildings T222, T221, 171, 172, and TO73)	Post Dumpsite *Data Gaps:* Based on site history and previous site investigation data, we consider the lack of soil data (especially at the burn pits) and limited analysis of groundwater samples as data gaps. Historical photos suggest the presence of burn pits onsite. Military reports reveal burning of thousand gallons of gasoline in the pits. *Naturally Occurring Organics:* Previously, URS Corporation detected several organics (solvents and fuel related compounds) in soil, but qualified them as naturally occurring non-petroleum organics in soil. HERD does not accept organic backgrounds. For site investigation and risk assessment purposes, the USACE must include all detected organic chemicals. *Conclusion:* We concur with the conclusion of further investigation, since several buildings are currently located on top of the Post Dumpsite area.	Post Dumpsite *Data Gaps:* As stated in the response to Comment #49, an additional investigation was conducted to delineate the impacted groundwater and TCE found in soil at the south end of the Post Dumpsite. This information will be included in the ESI Addendum. *Naturally Occurring Organics:* The risk assessment will include all of the data collected by USACE.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
	Area M - Post Dumpsite, Popping Pot, Salvage Yard, Fillsite 3, Former Heavy Equipment Yard (Buildings 50 and 111) and the former Vehicle Maintenance Areas (Buildings T222, T221, 171, 172, and TO73)	Popping Pot (Armored Fighting Vehicle): The US Army modified and used a General Grant Tank as a furnace to destroy unserviceable ordnance. *Data Gap*: We consider the limited groundwater analysis (explosive and selected metal) as a data gap, as military records suggest fuel use in burning ordnance. *Background Inorganic Concentrations*: The ESI report compares soil inorganic data to background metal concentrations determined in a previous investigation. For risk assessment purposes, please submit all the background data for our review.	Popping Pot (Armored Fighting Vehicle): *Data Gap*: Fuels were analyzed in the groundwater samples. Diesel range organics were reported at 910 µg/L at 5 feet bgs and 90 µg/L at 18 ft bgs in AFVSB002 (see page 97 and 99). *Background Inorganic Concentrations*: The risk assessment will include all of the data collected by USACE.	
	Area M - Post Dumpsite, Popping Pot, Salvage Yard, Fillsite 3, Former Heavy Equipment Yard (Buildings 50 and 111) and the former Vehicle Maintenance Areas (Buildings T222, T221, 171, 172, and TO73)	Salvage Yard *Groundwater Investigations*: Please justify conducting only VOC analysis on shallow groundwater samples, but VOC and SVOC analyses on deep groundwater samples (36 to 87 feet bgs). *Soil Investigations*: Despite the fact that site history suggests drainage of oil and fuel from vehicles directly onto ground surface and metals and PCBs are common contaminants in salvage yards, the ESI performed no soil investigations for the site. *Conclusion*: HERD does not concur with the conclusion of no further action, which was drawn solely from groundwater chemical concentrations below ESLs. We recommend additional investigations to fill the data gaps.	Salvage Yard *Groundwater Investigations*: Please see the response to Comment #52. SVOCs were analyzed to identify discrete peaks on a fuel chromatograph and not because they were suspected as contaminants of concern. *Soil Investigations*: Please see the response to Comment # 3 on why soil samples were not collected. *Conclusion*: USACE respectfully disagrees with DTSC's comment for this site to be investigated further.	
	Area M - Post Dumpsite, Popping Pot, Salvage Yard, Fillsite 3, Former Heavy Equipment Yard (Buildings 50 and 111) and the former Vehicle Maintenance Areas (Buildings T222,	Fillsite 3 *Data Gaps*: Although site records suggest disposal of unknown soil waste, fill material, and tires onsite; the ESI tested groundwater samples only for VOCs. *Conclusion*: HERD does not concur with the no further action decision. Instead, we recommend further sampling to fill the data gaps stated above. In addition, we urge the	Fillsite 3 *Data Gaps*: See the response to Comment #91. *Conclusion*: USACE respectfully disagrees with DTSC's comment for this site to be investigated further. A risk assessment will be performed on the data collected.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
	T221, 171, 172, and TO73)	USACE to perform a screening level risk assessment to support any risk management decisions of the site.		
	Area M - Post Dumpsite, Popping Pot, Salvage Yard, Fillsite 3, Former Heavy Equipment Yard (Buildings 50 and 111) and the former Vehicle Maintenance Areas (Buildings T222, T221, 171, 172, and TO73)	Former Vehicle Maintenance Buildings (T222, T21, 171, 172, and TO 73): We do not concur with no further DoD action required for the site. Considering the presence of soil and soil gas data gaps, we recommend (Table 1) further soil and groundwater investigations. We also recommend additional investigation to identify the potential source of chloroform detected in soil gas.	As stated in the response to Comment #24, there is no soil, no groundwater in the area of these buildings, and there were three soil gas samples collected that reported very low levels of chloroform (110 ppbv). USACE respectfully disagrees with DTSC's comment for this site to be investigated further.	
	Area M - Post Dumpsite, Popping Pot, Salvage Yard, Fillsite 3, Former Heavy Equipment Yard (Buildings 50 and 111) and the former Vehicle Maintenance Areas (Buildings T222, T221, 171, 172, and TO73)	Former Heavy Equipment Yard (Buildings 50 and 111): *Building 50*: The ESI collected two downgradient soil gas samples and two downgradient groundwater samples (VOC and fuel analyses). However, the investigation failed to address soil and groundwater impacts due to the potential use of PCB contaminated oils as road oil in dust control. *Conclusion*: Although the groundwater samples contain low levels of MTBE, the very limited groundwater data are insufficient to support no DoD impact at the site or a no further DoD action conclusion. We recommend further investigations to fill the data gaps.	Former Heavy Equipment Yard (Buildings 50 and 111): *Building 50*: PCBs have been used in the formulation of lubricating and cutting oils since the 1930s and their productions decreased substantially in the 1970s voluntarily by manufacturers based on the toxic effects and its resistance to degradation. The USACE would like to review any documentation indicating the use of PCBs at this site. *Conclusion*: There were two groundwater samples collected at this site. After 40 years, any Army related impacts should be evident in the samples collected. To investigate further knowing that MTBE exists in groundwater is beyond the scope of the ESI. Therefore, USACE respectfully disagrees with DTSC's comment for these buildings to be investigated further.	
	Area I	Former Sandblast Building / Paint Spray (Building 4): *Groundwater Data Screening*: Unless the USACE develops a site-specific barium background concentration and submits it for our review, we do not accept screening site barium concentration against any ambient levels, especially any global or regional ambient barium concentration in fresh/seawater. In addition, we disagree with screening out any site-related chemicals based on site concentrations below the ESLs.	Former Sandblast Building / Paint Spray (Building 4): *Groundwater Data Screening*: The barium concentrations will be evaluated in the risk assessment to determine if the concentrations pose a risk to human health and the environment. *Conclusion*: Per the rationale stated in the response to Comment #3, soil samples were not collected because of the limited vadose zone. Therefore, USACE respectfully disagrees with DTSC's comment for these buildings to be investigated further.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		Conclusion: Due to absence of soil investigations, we can not concur with a no further DoD action for the site. To fill the data gap, we recommend the USACE perform surface and subsurface soil investigations, since metals (e.g. lead) bind tightly to surface soil.		
	Area I	Former Store House / Engine Rebuild (Building 31) *Soil Investigations:* We recommend additional soil sampling under and near the building foundation. Despite the fact that previous soil investigation indicates the presence of fuels, VOCs, naphthalene, metals in soil near Building 31 and a dichromate tank was inside the building, the ESI collected no soil samples. *Conclusion:* HERD does not concur with preparation of a risk assessment only for the residual fuels in groundwater, even though the ESI detected chlorinated solvents and their degradation products in groundwater and found fuels released into soil and groundwater from a UST next to Building 31. According to the USEPA (USEPA, 1989) and DTSC (DTSC, 1994) risk assessment guidance, a risk assessment must include all chemicals detected in each environmental matrix, except essential nutrients and inorganics with concentrations below established background levels. Furthermore, site records indicate the building was a store house; and engine rebuilding took place inside the building. Also, several solvent and degreaser tanks were present onsite. We disagree with the statement of no record on DoD use of solvents in Building 31.	Former Store House / Engine Rebuild (Building 31) *Soil Investigations:* Please see the response to Comment #26 about the reasons why soil samples were not collected. Note that the dichromate tank was an above ground dipping tank not a below grade tank. Therefore, a direct pathway to groundwater, if present, was not possible. *Conclusion:* The risk assessment will be performed using all the data collected to date by USACE at the Arsenal. The Please see the response to Comment #64 about the revisions to the paragraph containing the statement: *"There is no documented DoD use of solvents at Building 31. Therefore, no further DoD action is indicated for the building."*	
	Area I	Former Garage/Repair Shop (Building 42): *Soil Investigation:* We recommend sampling soil from the building footprint. Although Army records suggest the building was a vehicle repairing shop, the ESI collected no soil	Former Garage/Repair Shop (Building 42): *Soil Investigation:* Please see the response to Comment #27 on why soil samples were not collected.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		samples. *Chloromethane in Soil Gas:* A 160 ppbv chloromethane soil gas detection near Building 42 warrants further soil gas investigation. We suggest additional soil and soil gas investigations to elucidate the potential source of release. We disagree with a no further action recommendation and elimination of chloromethane from the chemical of potential concern in soil gas based on it being a commonly used solvent, it occurring naturally in the environment, and no record of any DoD release at the building. Instead, the report must clearly identify all DoD uses of chloromethane in the building. We recommend performing a screening level risk assessment to support any risk management decisions of the site. A risk assessment must include all organics detected in each environmental matrix; except common laboratory contaminants with concentrations below ten times the maximum amount detected in any blank, or organics with detected concentration below five times of the maximum amount detected in any blank.	*Chloromethane in Soil Gas:* As stated in the response to Comment #27, two soil gas samples were collected with a maximum concentration of 160 ppbv of chloromethane. These concentrations do not indicate a significant release. There is no soil because the building is built on sandstone. There are no documented uses of chloromethane in this building. The risk assessment will include all the organics that were detected in the matrices that would be impacted.	
	Area I	Former Drum Storage/Maintenance Area (Building 51): *Soil Sample Location:* We recommend additional soil sampling near the building footprint, in order to investigate soil impact by chemicals of low mobility. Despite the site history, the ESI collected two soil samples from a single location at two depths, which was about 50 feet away from the building footprint. *Dimethyl Phthalate:* Considering a site history of drum storage and dimethyl phthalate being a commonly used solvent, we disagree with	Former Drum Storage/Maintenance Area (Building 51): *Soil Sample Location:* As stated in the Expanded SI, additional soil sampling will be conducted to delineate the lead and PAHs in the weathered sandstone covering the site. The sampling will be conducted in a radial pattern away from the original sampling location, the area of the suspected drum storage area. If this leads us to the building then sampling will be conducted near the building. However, the sampling will be conducted away from the suspected source area and not tied to the building. *Dimethyl Phthalate:* There is no indication of any DoD	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		the USACE that the dimethyl phthalate detected in soil is not related to any DoD activities. We recommend following USEPA risk assessment guidance (USEPA, 1989) on treatment of detected common laboratory contaminants in site samples. *Lead:* We disagree with averaging the lead concentrations from two soil samples, numbers, because two duplicated soil sample collected from the site were of very different lead concentrations (798 and 155 mg/kg). Instead, we recommend collecting colocalized and step out soil samples to confirm and delineate lead contamination. *Data Discrepancy:* Please clarify the following lead data discrepancy. According to Figure 6-13, soil boring samples (B051HP001) collected from south of the building contain 798 and 153 mg/kg of lead at 0.5 ft and 1.5 ft bgs, respectively. However, Figure 6-14 shows lead concentrations of 798 and 364 mg/kg at 0.5 ft and 1.5 ft bgs, respectively.	release of chemicals containing phthalates, such as insect repellant or solid rocket fuel at the Arsenal based on the reasons provided in the response to Comment #63. *Lead:* Additional soil sampling will be performed to delineate lead in the subsurface. *Data Discrepancy:* Thank you for identifying this discrepancy. The lead value on Figure 6-14 for B051HP001 at 1.5 ft bgs was incorrect. It should have been 153 mg/kg and not 364 mg/kg.	
	Area I	Former Dynamometer Shop/Engine Testing (Building 53) UST: Considering a site history of fuel storage and use, we identify the limited soil and groundwater investigations are data gaps.	Please see the response to Comment #26 for the reasons why the soil can be delineated with the data collected. USACE respectively disagrees with DTSC's comment on the lack of groundwater data. Gasoline, the fuel released from the Building 53 UST has been delineated as presented in the Expanded SI text and shown on Figure 6-15.	
	Area I	50 Series Complex - Blacksmith Shop / Machine / Welding Shops (Building 55), Leather & Canvas Shop / Welding Shop (Building 56), Small Arms Shop / Leather Canvas Shop (Building 56A) and Small Arms Shop, Firing Range (Building 57): The report should clarify whether previous investigations looked for SVOC and CAM17 metal impacts on soil. In addition, considering PAHs and metals are commonly contaminants in fuel release areas, we identify the lack of soil investigation	Previous investigations at the 50 Series Complex included SVOCs and metals in buildings with possible sources that would be indicative of these contaminants. Detailed soil sampling results for the 50 Series Complex is included the 50 Series SI (FA/BC, 2004). Lead and PAHs were not delineated because the landowner revoked right of entry on the property to USACE. As stated in previous comments, USACE has requested from DTSC and the RWQCB help in accessing this property to finish the SI.	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		during the ESI as a data gap.		
	Area I	Former Boiler Houses (Building 58A and 65 A): *Soil Investigations:* Since the Army sometimes used PCB contaminated oils to fire boilers, we recommend additional investigations to examine potential PCB impact on soil and groundwater. *Road Oiling:* We recommend further investigations to delineate the motor oil contamination and potential PCB contamination in soil near the Former Boiler Houses, since it was a general military practice to spray oil, and sometimes PCB contaminated oil, for road dust control. Besides, the USACE previously identified evidence of macadam road-like pavement near the Former Boiler Houses. Also, analytical results of the soil boring sample B065ASB001 suggested use of motor oil in oiling of the macadam roads that lead to the Complex.	Former Boiler Houses (Building 58A and 65 A): *Soil Investigations:* The Army used fuel oil for the boilers. Fuel oil is well documented in the Records Research Report (Jacobs, 1999), the Preliminary Assessment (Brown and Caldwell, 22004) and the 50 Series SI (FA/BC, 2004). USACE respectively disagrees with DTSC's comment. *Road Oiling:* Because of old roads laid down throughout the history of the Arsenal and by subsequent landowners, and in use today, heavy end hydrocarbons are expected to be in subsurface soil at the same concentrations as with any city street. It is far beyond the scope of this project to intentionally delineate contamination that is not from DoD activities at the Arsenal. Therefore, the USACE will not sample soil from under the roads, because the presence of PCBs in soil "below the asphalt" is not an indication of a DoD release.	
	Area I	Former Tool House / Degreaser Pit (Building 59): *Site History:* The report should clearly specify the function of a degreaser pit and the chemicals used during the degreasing processes in Building 59. Despite the fact that the building was a machine shop with the degreaser pit built into the foundation, the report claims no documented DoD use of solvents at the building. *Data Gaps:* We consider the lack of soil sampling within the building footprint and limited groundwater sampling analysis as data gaps.	Former Tool House / Degreaser Pit (Building 59): *Site History:* It is unclear as stated in the response to Comment #30. *Data Gaps:* Please see the response to Comment #30 on the reasons why no soil samples were collected. The impact to groundwater has been delineated. USACE respectfully disagrees with DTSC's comment for this building to be investigated further.	
	Area I	Former Tool House (Building 59A): Please refer to Specific Comment #98.	Assuming that DTSC does not agree that there is insufficient data to delineate the impacted soil and groundwater beneath this site, USACE disagrees. Soil samples were collected during the Expanded SI and the 50 Series Complex investigations from the thin cover of vadose zone soil. The soil is impacted with motor oil,	

DTSC PRP Discussion Sites				
Issue	Site	Agency Comments	DoD Response to Comments	DTSC Reply
Expanded SI Sites				
			diesel fuel, and lead in concentrations that exceed BSLs or ESLs. Groundwater is impacted with TCE and its daughter products. Groundwater has been delineated. These values will be used in the risk assessment to determine if there is risk to human health.	
	Area I	Former Locomotive Building (Building 90): Please refer to Table 1 for our recommendations.	See the response to Comments #32 and #66 on why no additional investigation will be conducted at this building.	
	Area I	Former Machine Shop / Combat Vehicle and Artillery Repair (Building 91): Considering a site history of a broiler room and presence of several hydraulic presses, we recommend further additional soil and groundwater investigations.	See the response to Comments #33 and #67 on why no additional investigation will be conducted at this building.	
	Area I	Former Machine Shop / Engine Rebuild (Building 91A): We disagree with no further DoD action for this building. Instead, we recommend further investigations including soil investigations. Despite the presence of two series of tanks, a degreaser, and several paint booths inside the building, the report states no documentation of solvent use in the degreaser. In addition, the military used PCB contaminated oil to fire boilers and PCBs were important components in hydraulic fluids.	See the response to Comments #34 and #67 on why no additional investigation will be conducted at this building.	
		Former Truck Storage / MMW Repair, Motor Vehicle Maintenance Building (Building 93): We consider the lack of soil data as a data gap. To fill the data gap, we recommend collecting soil under the building. In addition, a single soil gas sample is insufficient to determine potential soil impact from fuels and solvents released during past DoD activities.	See the response to Comments #35 and #68 on why no additional investigation will be conducted at this building.	
		Former Battery Charge Building (Building 101): Considering a site history of steam cleaning battery cases and high affinity of lead to surface soil, we recommend collecting soil directly under the building foundation and any drainage outlets.	According to the sampling flow and decision diagram a soil sample should be collected at Building 101. The sample results will be included in the SI addendum.	
		Former Service Station (Building 103) UST: Please refer to Table 1 for our recommendations.	Based on Table 1, DTSC is suggesting that SVOCs should have been included in the sampling analysis. Samples have been collected during previous	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
			investigations that have delineated the impact to soil of VOCs, lead and fuels. The former UST at Building 103 contained gasoline.	
		Former Building 118A Aboveground Storage Tanks (ASTs): Considering the presence of a 10,000 gallon diesel tank near Building 118A, we identified the limited soil and groundwater investigations as data gaps. Please refer to Table 1 for our recommendations.	The investigation for these ASTs was provided in a previous report, *Technical Memorandum for Area I – Fuel Storage Facilities at Buildings 15, 25, 25, 27, 46(B), 54, 118(A), 152, an 178* (FA/BC, 2002) and not commented by DTSC in terms of lacking data. Based on a thin vadose and data collected during the 2002 and the Expanded SIs, the impacts to soil and groundwater have been delineated in the area of the former AST. USACE respectfully disagrees with DTSC's comment for this site to be investigated further and a risk assessment will be conducted to determine the risk to human health.	
		Former Quartermaster Storage/Shop/Electroplating (Building 120): *Chemicals of Interest*: Based on a site history of a former photographic laboratory, electroplating tanks, we recommend additional soil and groundwater investigations to fill the following data gaps. *Discrepancy*: Please clarify the following discrepancy. Although the sampling plan included cyanide analysis in soil, Table 3-1 indicates that the soil sample was inadvertently not analyzed for cyanide. However, the report states that the cyanide concentration in soil was below the BSL and hence concludes no significant DoD release of cyanide to soil (Section 6.5.17, page 139).	Former Quartermaster Storage / Shop / Electroplating (Building 120): *Chemicals of Interest*: The data gaps are not provided in the comment. *Discrepancy*: Please refer to the response to Comment #69a about changes to paragraph 3 on page 139 where this discrepancy occurs.	
		Former Motor Test Shed (Building 154) UST: Please refer to Table 1 for our recommendations.	Based on Table 1, DTSC is suggesting that SVOCs should have been included in the sampling analysis. The USTs at Building 154 contained diesel fuel or gasoline. The contaminants of concern were based on the possibility of these fuels and their primary components. Additionally, VOCs were added to determine the concentrations of the BTEX components of gasoline and the impacts of the larger solvent plume. Unless there is association with these fuels and SVOCs that we are not aware of, there is no reason to analyze for SVOCs.	
		Former Locomotive House (Building 156):	Please see the response to Comment #38 on why soil	

DTSC PRP Discussion Sites				
Issue	**Site**	**Agency Comments**	**DoD Response to Comments**	**DTSC Reply**
Expanded SI Sites				
		We understand that the ESI encountered no groundwater and detected no VOCs in soil gas. However, to justify for no DoD action for the site, we require soil investigations, especially pits were present inside the building for diesel locomotive servicing.	samples were not collected at this building.	
		Former Motor Cleaning Building / Steam Cleaning / Paint Spray / Fuel Storage (Building 161) *Data Gaps*: The ESI collected no soil samples. Considering past site activities of degreasing processes, presence of a boiler house and a paint spray booth inside the building; we identify the lack of soil investigation at the building as a data gap. We also identified the limited groundwater analysis as a data gap. *Cobalt*: We disagree with the report that past DoD activities in the building were not responsible for elevated cobalt concentrations detected in groundwater. One of the past DoD activities onsite was paint spray. In addition, cobalt is an important constituent in many paint pigments. *Solvents*: We disagree with the report that no solvents were used in the building. Past DoD motor cleaning and spray painting took place in the building. In addition, painting processes commonly involve solvent uses. Besides, a degreaser pit was present in the building. *Conclusion*: We do not concur with performing a risk assessment only on nickel detected in groundwater. Instead, we recommend including all inorganics with concentrations above site-specific background concentrations and all detected organics in the risk assessment.	Former Motor Cleaning Building/Steam Cleaning/Paint Spray /Fuel Storage (Building 161) *Data Gaps*: Please see the rationale from the other responses to comments on why soil samples were not collected. USACE respectively disagrees that there was insufficient groundwater data collected. *Cobalt*: The Expanded SI states on page 144, "The source of the cobalt in groundwater at concentrations that exceed ESLs is unknown based on the DoD activities in this building." The data will be evaluated in the risk assessment to determine if there is risk posed to human health. *Solvents*: USACE understands DTSC's objection but the statement is correct, there are no "documented" uses of solvents in this building. *Conclusion*: The report did not mean to infer that only the contaminants that exceeded BSLs or ESLs were going to be evaluated in the risk assessment. All detected analytes will be evaluated in the risk assessment. Comparison to numerical criteria was used to determine if additional investigation was warranted.	
		Former Reclamation Building / Transport Vehicle Shop (Building 165): Please refer to Table 1 for our recommendations.	See the response to Comment #40 on why soil samples were not collected. Based on Table 1, DTSC is suggesting that SVOCs	

DTSC PRP Discussion Sites				
Issue	Site	Agency Comments	DoD Response to Comments	DTSC Reply
Expanded SI Sites				
			should have been included in the groundwater sampling analysis. SVOCs were not analyzed in groundwater because they were not identified in the planning stages with the regulators as a major contaminant of concern.	
		Former Steam Cleaning Building (Building 165A) / Former Maintenance Building, Body and Radiator Shop (Building T199): Please refer to Table 1 for our recommendations.	See the response to Comment #41 on why soil samples were not collected.	
		Former Paint Shop (Building 166): We consider the limited groundwater investigation and lack of soil investigations as data gaps. Please perform additional investigations to fill the data gaps.	See the response to Comment #42 on why soil samples were not collected. USACE respectively disagrees that there was insufficient groundwater data collected.	
		Former Bar Stock Building / Storage / Vehicle Shops for Motor (Building 167 and Building 168): Although there are no records of DoD activities performed onsite, the groundwater investigation results affirm the need for soil investigations. In addition, we do not concur with the conclusion of no DoD action for the site. Instead, we recommend conducting a screening level risk assessment to support any risk management decisions of the site.	No further action is recommended for Building 167 but not Building 168. In fact additional groundwater sampling is recommended to delineate diesel fuel in shallow groundwater. Once the diesel fuel in groundwater has been delineated, a risk assessment will be performed to determine any risk posed to human health. Additionally based on the reasons stated for the response to Comment #43, there is no vadose zone. Therefore, USACE respectfully disagrees with DTSC's comment for this building to be investigated for impacts to soil.	
		Former Storehouse / Shop (Building TQ131): We understand that the ESI encountered no groundwater and detected no VOCs in soil gas. However, we consider the lack of soil investigation as a data gap because several processing tanks, a shallow degreaser pit, and an oil-fired boiler were present inside the building and past DoD activities in the building. As a result, we do not concur with no DoD action required onsite.	See the response to Comment #45 on why soil samples were not collected.	
		Industrial Area Groundwater: We understand that VOCs were the key COIs in the groundwater investigation, because of potential human exposure to groundwater VOCs through the indoor air vapor intrusion pathway. However, shallow groundwater (approximately 5-10 feet bgs) was present onsite, especially at Area I. We consider potential human exposure of metals and SVOCs in groundwater during construction	Sufficient sampling of subsurface soil for SVOCs and metals were analyzed (Expanded SI and previous investigations) at the sites based on historical information that would present a possible DOD impact. The focus of the sampling is to determine the existence and extent of impact from DOD use. The USACE has determined that the data collected has identified the primary concerns based on former Army uses at the Arsenal. Therefore, the risk assessment will be conducted with the data collected.	

DTSC PRP Discussion Sites				
Issue	Site	Agency Comments	DoD Response to Comments	DTSC Reply
Expanded SI Sites				
		and excavation activities as a complete pathway. In the absence of analytical data for these chemicals, the ESI inadequately supports a human health risk assessment. Furthermore, the ESI fails to consider ecological receptor exposure to groundwater (and soil) contamination. We urge the USACE to perform additional investigations to fill all data gaps before conducting the risk assessments.		
	Discussion and Conclusions	Overall, the report is well written and organized. Above are HERD's comments and suggestions for additional investigations on each site. We disagree that soil and groundwater contamination has been completely delineated at all but three sites. We urge the USACE to fill all the data gaps. In the absence of adequate site characterization, we believe that the resulting risk assessments will be insufficient to support risk management decisions or communicate potential site risk to the public.	Thank you for commenting on the presentation of the report. As presented in the responses to the comments, USACE believes that groundwater is delineated with the main contaminant of concern, VOCs and fuels. Soil samples are not scientifically warranted in the areas that DTSC would like them to be collected based on the shallow groundwater or sandstone at the surface. The risk assessment will be performed based on all the data collected to date.	