TITLE: RESPONSE TO COMMENTS RCRA FACILITY ASSESSMENT REPORT FROM EPA & DTSC

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S1-0006

RESPONSE TO COMMENTS
DRAFT RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
FACILITY ASSESSMENT REPORT
MARINE CORPS AIR STATION (MCAS) EL TORO
EL TORO, CALIFORNIA

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
	GENERAL COMMENTS	
	EPA has conducted a review of the MCAS El Toro Draft RCRA Facility Assessment (RFA) report dated March 18, 1993. The objective of the review was to determine the technical adequacy and regulatory compliance of this document. In conjunction with the Draft RFA, the Final Sampling Visit Work Plan (SVWP) was referred to for background information. The primary objective of conducting this RFA was to provide assurance to EPA that a reasonable and comprehensive effort had been made to identify all potentially contaminated areas at MCAS El Toro. That is, given the inadequacy of previous site investigations, this RFA was to determine if and where releases of hazardous substances, pollutants, and/or contaminants had occurred. The deficiencies noted in this review demonstrate that this objective has not been fully achieved.	The Navy has conducted a significant amount of work for the RFA at MCAS El Toro. This effort has included an extensive sampling visit program at 140 SWMUs/AOCs and analysis of a large number of soil samples (e.g., nearly 1,300 volatile organics analyses). The Navy believes that the effort and cost expended at MCAS El Toro for the RFA is reasonable and significantly greater than what is done for a typical RFA by EPA. The Navy therefore disagrees with this general comment. It cannot be the Navy's objective "to identify all potentially contaminated areas at MCAS El Toro," since this represents an unachievable goal for the Navy to meet. The RFA at El Toro represents the Navy's best, fair, and reasonable attempt to identify and assess potentially contaminated areas at the Station. It is important to note that new information may arise and identify additional areas of potential contamination at the Station. As with all regulated facilities, these areas will be addressed as they are identified. The Navy believes that this aspect of environmental work at the Station is typical of regulated facilities and does not represent "deficiencies" in current programs.
	Of the 22 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) which were recommended for sampling in the Draft Preliminary Review/Visual Site Inspection report, the Draft RFA report recommends only one SWMU/AOC for remediation within the CERCLA project. While EPA agrees with this specific conclusion, EPA believes that the Draft RFA report may have missed other SWMUs/AOCs which could potentially require further investigation under CERCLA. EPA comments on the Draft RFA are included in Section I of this review.	The Navy would like to emphasize that 140 SWMUs/AOCs were recommended for a sampling visit.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
	In addition, the Draft PR/VSI report dated July 3, 1991 was also reviewed by the EPA. Although EPA recognizes that this task was not under the original scope of the review, the RFA report frequently refers to the Draft PR/VSI Report. Also, the Draft Final RFA Report (which will formally include the Draft PR/VSI) will be subject to EPA review. As a result, a number of deficiencies were noted now. Therefore, they were included in this review to give the Navy additional lead time to address them.	It should be noted that EPA had previously reviewed the Draft PR/VSI Report and provided comments to the Navy via a transmittal letter dated 10 October 1991.
	EPA comments resulting from the Draft RFA and the Draft PR/VSI reviews consist of two types of comments. One set must be addressed in the MCAS El Toro Draft Final RFA report, and one set only needs to be considered when preparing the Draft Final RFA report. The comments in the former category are provided in Section I (i.e., comments that are required to be incorporated into the Draft Final RFA report), whereas Section II contains the comments that are for consideration only, and which do not need to be addressed in the Draft Final reports.	No response necessary.
Section 1. Comments for Incorporation		
A. COMMENTS PERTINENT TO THE DRAFT RFA REPORT		
A1	On Page ES-3 of the report, the text states that "...the RFA did not encounter a significant number of samples with chlorinated VOCs or significantly high concentrations..." What is the statistical basis for this statement? How was a level of significance defined?	The term "significant" used in the text does not have a statistical basis. Simply stated, very few samples collected had chlorinated VOCs detected, and of those where chlorinated VOCs were detected, the concentrations were near CLP detection limits. The text has been revised.
A2	The combined use of surface and subsurface samples at each background station occurred presumably because "...metals concentrations were found to be highly correlated..." (see Appendix D). The text should include statistical support for this statement.	The attached figures show the correlation between parameter concentrations from the surface and from a 2 foot depth. The data values plot on the diagonal if the surface and subsurface samples have the same value. The size of the symbol used is proportional to its influence on the correlation, a solid symbol indicating a negative influence, an empty symbol indicating a positive influence. The figures indicate that while many parameters have one or two samples that are not similar at depth, for the most part there is good correlation between surface and subsurface concentrations.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
A3	As a general note, it appears that all of the sanitary sewers (active and inactive) should be examined as SWMUs due to the nature of known materials released into them and the high possibility of unknown hazardous materials that may have been discharged into them. What assurances can be offered that the sanitary sewer system has not leaked?	The active and abandoned (or former metal plating waste) sewer systems at the Station have each been identified as SWMUs/AOCs in the RFA (i.e., SWMU/AOC Numbers 12 and 265, respectively). After a records review and visual site inspection, a sampling visit was recommended for the abandoned sewer lines, but not for the active sewer lines. The active sanitary sewer system at MCAS El Toro is an extensive, multi-mile network of pipelines located throughout the Station. These active sewer lines have not routinely received hazardous wastes. If hazardous waste was introduced into the active sanitary sewer system (e.g., through sinks), it is likely that the quantity would be small and that dilution would take place in the lines. Given the extensive length of the active sewer lines, a sampling program for the system is neither practical nor warranted in the absence of specific information indicating where and what hazardous wastes may have been routinely dumped into the system. It should be noted that the RI/FS Program at El Toro has installed a groundwater well network at the Station comprised of over 100 wells. The monitoring of this well network will allow identification of potential source areas such as portions of the active sanitary sewer lines. A separate, independent set of sewer lines, now abandoned, received metal plating wastes for a period of about a year, in 1945, during World War II. Since these lines did routinely receive hazardous waste, a sampling visit was conducted at these abandoned lines to assess potential leakage to subsurface soil.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
A4	On Page 6-16, the PRGs are recommended for use when considering ingestion or soil and dermal contact. The El Toro Model (ETM) values are recommended for use when considering potential for impacts on groundwater. However, because of deficiencies such as those noted below, the use of the ETM values for screening of SWMUs and AOCs is questionable.	
A4a	Consider the clear inapplicability of the ETM as applied to aluminum in soil (Table 6-12). A value of 11,296,000 mg/kg is stated as the ETM level. However, this is physically impossible because pure aluminum can only have a maximum mass of 1,000,000 mg/kg. This type of problem with model sensitivity severely limits its potential for incorporation as a meaningful tool for screening.	The value for aluminum calculated using the ETM is physically impossible (i.e., > 1,000,000 mg/kg). In this case where the ETM value exceeds 1,000,000 mg/kg, it indicates that no amount of aluminum in the vadose zone soils would impact groundwater under the conditions set in the model. The report will be revised to set the value for aluminum at 1,000,000 mg/kg. (The model allows calculation of a concentration greater than 1,000,000 mg/kg; the user must round downward in such instances). The Navy does not believe that this aspect of the model regarding round-off of a single high concentration has any relationship to model predictions in the mid-to-lower concentration ranges. For concentrations < 1,000,000 mg/kg, the Navy does not believe that there is a "problem with model sensitivity" that "severely limits its potential for incorporation as a meaningful tool for screening."
A4b	The model used to predict leaching in Appendix E is based, in part, on another apparently similar equation which is not referenced. The original equation and its derivation, starting with a mass balance, should be presented in order to properly assess the final equation provided in this RFA. Throughout the presentation of the model, there are minor errors, omissions, and a noticeable lack of supporting documentation.	Original equations will be provided in Appendix E of the final report. Without specific examples, the Navy cannot respond to EPA's suggestion that there are minor errors and omissions in the presentation.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
A4c	The model which is presented in Appendix B does not appear to account for moisture content within the vadose zone, and this variable has been shown by Feenstra, et al. (Assessing Residual NAPL Concentrations in Soil Samples. Groundwater Monitoring Review; 1991; 11 (2) 128-136) to be a critical factor in contaminant sorption and migration.	The ETM is a relatively simple vadose zone model that has been used by the Navy to provide a screening mechanism for evaluating potential groundwater impact of contaminant concentrations observed in RFA soil samples. The model is very conservative because an equilibrium between the contaminated soil and groundwater is assumed. Thus, the mdoel does not account for variations in moisture content. Because of the large number of sites in the RFA and a lack of detailed vadose zone data at RFA sites (some of which did not sample deeper than 5 feet), use of a more complex model is not warranted. While the Navy understands the reluctance of agency acceptance of a simplified model for all Navy sites and programs, the Navy believes that the ETM is a reasonable tool for the El Toro RFA and that reasonable recommendations for further action have resulted from the evaluation of the RFA Sampling Visit data. Some comparisons of the ETM values to a more sophisticated vadose zone model (VLEACH) were done for a few compounds. The comparisons indicate a reasonably good correlation which supports the use of the simpler ETM in the RFA evaluations. An addendum at the front of the Final RFA Report will present a discussion of the evaluation of VLEACH as an alternative vadose zone model.
A4d	The selected regression equations used to estimate K_{OC} in Appendix E are adequate; however, the authors have elected to use an f_{OC} value of 2 percent in the model, based on a presumption of conservatism. This assumption appears optimistic rather than conservative. In general, the greater the organic carbon fraction present, the higher the degree of sorption. The original researchers have noted that the minimum f_{OC} for these equations to remain valid is approximately 0.1 percent. Considering the nature of the subsurface soils in the vicinity of the site, it appears that a reasonable and conservative range of values of f_{OC} should be about 0.1 to 0.4 percent. The sensitivity of the final leaching results to the selection of 2 percent or 0.1 percent should be noted in the text.	An f_{OC} value of 2 percent was selected because it is the default value used in EPA's Risk Assessment Guidance for Superfund (RAGS). Because the ETM uses other conservative assumptions, it was not appropriate to change only this parameter in the model while leaving others as is. When performing some model runs using VLEACH, the Navy used EPA's recommended f_{OC} of 0.1 to 0.4 percent, as well as the following parameters: depth to groundwater = 90 feet, dry bulk density = 1.5 g/ml, total porosity = 40 percent, volumetric water content = 0.1, and groundwater recharge = 0.1 ft/yr. An addendum will be placed at the front of the Final RFA Report presenting a discussion of VLEACH as an alternative vadose zone model and a comparison of allowable soil concentrations derived from the ETM and VLEACH.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
A4e	The selection of the value for A_a in Appendix E is not clearly explained. Variations in this value by a relatively small amount can significantly change the final results.	A_a was calculated as the product of an assumed length of well screen and the unit width of the cross-section in the direction of groundwater flow. The length of the well screen was assumed to be 10 feet, which is conservative since typical drinking water wells in the area would have significantly longer screen length, perhaps 50 feet. The unit width was set at 1 foot. Thus, A_a was calculated to be 10 ft^2 (10 ft by 1 ft).
B. COMMENTS PERTINENT TO THE DRAFT PR/VSI REPORT		
B1	The EPA believes that additional SWMUs or AOCs may be present at the MCAS El Toro site, for the following reasons:	
B1a, first paragraph	Section 1.4 of the Draft PR/VSI report does not adequately discuss site operations and waste management practices at the facility. For instance, although the SWMUs identified in the report manage both hazardous and nonhazardous wastes, Section 1.4 discusses processes resulting in the generation and management of only hazardous waste streams. The report should describe all past and present operations conducted at the facility that have resulted in the generation of all waste streams, and not just those that are RCRA hazardous wastes. According to the RFA Guidance Document, a SWMU is any unit to which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. Tracking of waste streams from generation to shipment offsite could result in the identification of additional SWMUs or AOCs.	This comment contradicts EPA's previous comment on the Draft PR/VSI Report (General Comment Number 4 provided to the Navy on 10 October 1991) which stated: "Section 1.0-1.5. Very good discussion and summary of facility activities and wastes managed." It is not clear why EPA has changed its opinion of this discussion from "very good discussion and summary of facility activities" in 1991 to the current statement that the report "does not adequately discuss site operations and waste management practices at the facility." The Draft PR/VSI Report describes past and present Station operations involving wastes to a level of detail warranted by the available information from records review, personnel interviews, and VSI observations. The operation at MCAS El Toro is inherently complex because of the large number of rotating, nonpermanent tenants (i.e., squadrons) that have worked at the Station over the years. The waste-generating activities performed by the squadrons typically involve the maintenance of aircraft and associated equipment, and the waste is generated on a batch basis. When combining the batch nature of the waste generation with the "gypsy" nature of the squadrons coming and going at the Station, it is not possible to identify all past hazardous waste generation and management activities at the Station.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1a, first paragraph (cont'd)		The Navy believes that reasonable attempts have been made to identify SWMUs/AOCs for the RFA, and various conservative measures have been taken to account for the lack of firm, complete, and accurate information regarding past management and disposal activities: o Records reviews have identified some significant past waste management activities at MCAS El Toro that have resulted in the identification of SWMUs/AOCs for the RFA. Examples include the former incinerator site, the abandoned sewer lines, the former sewage treatment plant, and former landfarming areas. o At SWMUs/AOCs where there is doubt as to the exact range of wastes that may have been received or managed, samples were analyzed for a full suite of parameters similar to the RI/FS Program as a measure of conservatism. o The Navy has been liberal in adding SWMUs/AOCs into the El Toro RFA which would not be considered SWMUs/AOCs in a typical RFA. (For example, the Navy has included USTs with unknown tank contents as SWMUs/AOCs in the El Toro RFA). The Navy also offers the following responses to EPA's statement: "The report should describe all past and present operations conducted at the facility that have resulted in the generation of all waste streams, and not just those that are RCRA hazardous wastes."

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1a, first paragraph (cont'd)		o Typically for federal facilities, information concerning "all" past and present operations and "all" waste streams resulting from those operations is not available, especially for a facility such as MCAS El Toro that has been in operation for nearly 50 years. The Navy believes that reasonable efforts have been made to either determine this information or make appropriate, logical adjustments to cover for lack of full and complete information. o The Navy has included evaluation of wastes other than RCRA hazardous wastes. Numerous SWMUs/AOCs that managed non-RCRA wastes (e.g., waste oil and hydrocarbon fuels) have been identified in the El Toro RFA. Examples include numerous USTs, oil/water separators, former landfarming sites, etc.
B1a, second paragraph	Examples of nonhazardous waste streams are asbestos-contaminated materials, drained batteries, wastewater generated from aircraft and vehicle wash areas, and all wastes discharged from oil/water separators, including the skimmed oil, wastewater, and any separator sludges. These wastes, although not classified as RCRA hazardous waste, may contain hazardous constituents that could pose a threat to human health and the environment, if released to the environment.	Waste oil from oil/water separators, asbestos, and asbestos-containing materials are California-regulated hazardous wastes. These are not nonhazardous as stated in the above paragraph.
B1a, third and fourth paragraphs	The discussion which centers on hazardous waste operations is limited. For instance, Table 1-1 of the Draft PR/VSI Report identifies waste acids and alkaline liquids, and lab-packs (all of which are presumed to be hazardous) as wastes that were shipped offsite in 1990. However, the processes that generated these wastes, and the associated waste management activities are not described in this section. As mentioned above, a thorough understanding of waste management processes could lead to the identification of additional SWMUs or AOCs. Finally, Section 1.4 should discuss past solid and hazardous waste generation and management operations to give the reader a clearer sense of how these operations have changed over the years, and how those changes may have affected the release potential for each SWMU/AOC identified.	See Response to "Comment B1a, first paragraph."

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1b, first paragraph	The Preliminary Review conducted may have been incomplete, because not all relevant agency files may have been reviewed. For instance, it is known that the facility has experienced releases of dielectric fluid containing high levels of PCBs, and that the facility has generated asbestos-contaminated materials. PCBs and asbestos are regulated under the Toxic Substance Control Act (TSCA). However, no mention was made in the Draft PR/VSI report of whether state or federal TSCA files were requested or reviewed.	During the records review portion of the RFA, the files at the following agencies were reviewed: EPA, DTSC (then known as DOHS), RWQCB, Orange County Health Care Agency, Orange County Fire Department, Irvine Ranch Water District, and the County Sanitation District of Orange County. Information available at the agencies was typically quite limited, and it was generally available in the Navy's and Station's records for MCAS El Toro. Knowledge of releases of PCBs at the Station has been obtained through records (e.g., Brown and Caldwell's Initial Assessment Study) and interviews of Station personnel. In our discussions with Station personnel, they are unaware of any formal reports or written documentation that may have been prepared for these incidents. Asbestos-contaminated materials have been generated on-Station. However, typical asbestos removal operations involve double-containerization of the material where it is generated. Therefore, release of asbestos to the environment is improbable and does not justify sampling.
B1b, second paragraph	Additional potential regulatory agencies which were not included in the PR include the South Coast Air Quality Management District (SCAQMD), the California Air Resources Board, State and Federal Occupational Health and Safety Administration (OSHA) offices, and the California Department of Toxic Substances Control (DTSC). Each of these sources may yield additional SWMUs or AOCs.	DTSC records were reviewed during the PR. At the time the PR was conducted, the name of this agency was DOHS. It is not believed that records (if existing) for MCAS El Toro at SCAQMD, CARB, or OSHA would yield useful information regarding identification of SWMUs/AOCs.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1c	Additional potential SWMUs and AOCs were identified by EPA through review of the Draft PR/VSI Report. These units include the facility storm drainage system (which historically has received numerous discharges of wastes and fuel spills), and units identified in Appendix B of the Draft PR/VSI Report (such as wash racks at Buildings 655, 298, 295/296/297, 463, 294, and 10; oil/water separators at Buildings 655, 295/296/297, 672, 294, and 10; Building 672 surge tank; and Building 605 catch basin). These units were not identified as SWMUs/AOCs in the report.	The facility storm drainage system includes four major washes (i.e., Borrego Canyon Wash, Agua Chinon, Bee Canyon Wash, and Marshburn Channel) and associated piping that leads to the washes. Each of these washes has been identified as a SWMU/AOC for the RFA, and each has been evaluated with a sampling visit. The storm drain piping system is composed of numerous branch lines that all lead to the drainage channels. No specific portion of the storm drain piping has been identified as receiving waste on a routine basis; therefore, no portion of the storm drain piping has been identified as a SWMU/AOC. As with the sanitary sewer system, monitoring of the RI/FS well network will help to identify if a portion of the storm drain piping may be releasing contaminants into the subsurface. In general, the units identified by EPA from Appendix B, were identified as SWMUs/AOCs in the RFA: Unit No. — Bldg No. — SWMU/AOC Washracks — 655 — 198 298 — 83 295/296/297 — 74 463 — 141 294 — 25 10 — 219 Oil/Water Separators — 655 — 199 295/296/297 — 76 672 — 175 294 — Could not be found. Station personnel said it does not exist. 10 — 220 Surge Tank — 672 — 174 Catch Basin — 605 — 151

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1c (cont'd)		*In general, these SWMUs/AOCs are located in areas with multiple* buildings. The list of SWMUs/AOCs (Table 4-1 of the Draft RFA Report) may have contained a different building number than the information from the records review contained in Appendix B.
B1d	Based on EPA experience in conducting RFAs at military installations, other potential SWMUs or AOCs may be present at MCAS El Toro, for the reasons discussed below: EPA Comment B1d1 - The report does not identify any container or tank waste loading/unloading or transfer areas. Each of these areas could qualify as a SWMU.	Many of the SWMUs/AOCs were used for loading/unloading of containers and waste. Each UST in the RFA has been the site of *loading/unloading activities for waste and/or hazardous materials.* Each tank farm at the Station has a designated loading/unloading area with spill containment tanks which were SWMUs/AOCs in the RFA (e.g., SWMUs/AOCs 17, 18, 19, 21, 22, 23, 23, and 108). In addition, container loading/unloading has occurred at each HWSA identified in the RFA.
B1d2	Are there or have there been any dry cleaners on site? If so, there may be SWMUs/AOCs associated with storage or spills of spent dry cleaning solvents.	No dry cleaners are known to have been located on Station property.
B1d3	*Are there any septic tanks present on the site?* Old septic tanks (all are potential SWMUs) could be of concern because of past waste management practices which typically included the flushing of wastes down the drains.	MCAS El Toro has had a sanitary sewer system since its inception in the early 1940s. At the time of the PR/VSI, no septic tanks had been identified at the Station. Recently, the existence of three septic tanks located in remote areas of the Station was made known to the Jacobs team. None of these tanks is located in an area where hazardous materials have been managed or stored. (One is located in the far northern part of the Station near the EOD Range; the other two are in a *park located in the northwest corner of the Station). Visual site* inspections were performed for these tanks in June 1993. Descriptions of these septic tanks will be included as an addendum to the PR/VSI Report, which is presented in Appendix G of the Final RFA Report. Based on their remote locations, it is unlikely that hazardous waste may have been dumped into these tanks. A sampling visit would not be warranted for any of the on-Station septic tanks.
B1d4	The report identified past usage of PCB transformers. Were any of the areas that were used for the operation and maintenance of PCB transformers inspected for releases during the VSI? Such *areas are typically sites of PCB-contaminated oil spills.*	SWMUs/AOCs 7, 88, and 244 are areas that were used for storage of PCB transformers. Each of these was inspected during the VSI, and each was investigated with a sampling visit.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1d5	The report does not identify the "aircraft refurbishing area," a unit whose identity was disclosed in a meeting with the EPA, April 15, 1993. This omission indicates a potential failure to identify, through scoping, all missions, and supporting operations at MCAS El Toro, the commercial and industrial products and materials used in those operations, and any wastes generated and potentially released at the locations where those operations were conducted.	The "aircraft refurbishing area" refers to the area around Buildings 295, 296, and 297. This is a large area that, by itself, is not a SWMU/AOC. Within the vicinity of this area, however, four SWMUs/AOCs have been identified. These include SWMU/AOC Numbers 73 (HWSA), 76 (oil/water separator), 226 (HWSA), and 265 (former metal plating waste sewer lines).
B1e	The following additional concerns were identified from review of the Draft PR/VSI Report, the resolution of which may lead to the identification of additional SWMUs/AOCs:	
B1e1	The report identifies that water wall curtains were used to control overspray from painting operations. Were any painting operations conducted in enclosed rooms whose walls were lined with dry filters? If so, where were the used filters stored or disposed? Was there any control equipment associated with the management of volatile organic compounds from painting operations present?	It is not known if dry filters were used at the Station. If dry filters were used in this area, they would have been stored at HWSAs. A sampling visit was conducted at each HWSA with the full suite of chemical analyses conducted.
B1e2	The Draft PR/VSI Report discusses a Facilities Management Department (FMD) pump truck and vacuum trucks for removing wastes from drums and tanks. These trucks are potential SWMUs. Where are the empty drums stored? Are the pump trucks and vacuum trucks routinely flushed, and if so, where does this operation occur and how are the flush waters managed?	The Station operates vacuum trucks for transfers of waste within the Station. Typically, this involves an operation where waste is being transferred from drums and small tanks to larger storage tanks. These trucks are also used to assist in cleanup of spills. The Navy disagrees with EPA's statement that "these trucks are potential SWMUs." A SWMU is a fixed area of the land mass within a facility where waste has been managed; it cannot be an object such as a vacuum truck that moves from place to place within a facility. (For example, a loading/unloading area for the trucks could be a SWMU/AOC, but the trucks themselves could not).
B1e3	The report stated that flushings from fuel storage tanks were historically disposed via storm drains. How is this waste stream managed at present?	Flushings from aircraft fuel tanks are now collected in drums or vacuum trucks. Petroleum wastes generated at the Station are sent offsite for recycling.
B1e4	Table 1-1 identifies asbestos-contaminated wastes, waste sulfuric acid, waste alkaline liquids and lab-packs as wastes shipped offsite in 1990. Where were these wastes accumulated or stored prior to shipment offsite? Is there a chemical and/or a medical laboratory onsite, and if so, are there any associated accumulation areas?	Both a medical and a dental facility are located on-Station. The wastes from these facilities (as well as asbestos-containing waste, waste sulfuric acid, waste alkaline liquids, and lab packs) are stored in a HWSA prior to shipment off-Station for disposal.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1e5	According to the report, current operations include the draining of some batteries onsite. Where are the drained batteries stored?	Draining of batteries occurs at various locations on-Station, including at the DRMO Storage Yards and HWSAs. These areas were addressed as SWMUs/AOCs in the RFA.
B1e6	The SWMU list identifies the active sanitary sewer system lines, the abandoned lines associated with former sewage treatment plant operations and former metal plating operations, as three different SWMUs. It should be confirmed that these units together consist of all sanitary sewer lines that may have received discharges of process wastes at the facility. Historical data on waste management practices shows that solvents and other wastes were routinely discharged to the facility's sanitary sewer system (see the 1945 James M. Montgomery report included in Appendix C of the Draft PR/VSI report).	The information in the 1945 James M. Montgomery Report indicates waste streams from metal plating operations that were generated for a period of 1 year during World War II. The metal plating wastes were transferred from the metal plating shops in sewer lines dedicated to this service (i.e., separate from the Station's sanitary sewer lines). Both the Station's sanitary sewer lines and the metal plating waste lines transferred wastewater to the former sewage treatment plant in the southern part of the Station. After the metal plating operation ceased, the metal plating sewer lines were abandoned. The Station's sanitary sewer lines are still active. Therefore, the routine discharge of process wastes (as mentioned in the 1945 Montgomery report) occurred only at the abandoned metal plating sewer lines. The active sewer lines have not received routine discharges of hazardous waste. For the RFA, the abandoned metal plating sewer lines were evaluated with a sampling visit. The active sewer lines were not. For additional information, see the Navy's Response to EPA Comment A3.
B1e7	Why is the NPDES discharge point Serial No. 004 (corner of Trabuco Road and Rifle Range Road ditch) not identified as a SWMU? Section 3.2.1.2. indicates that unauthorized discharges may have occurred via this outfall.	NPDES discharge point No. 004 was not identified as a SWMU/AOC in the RFA. The other three NPDES discharge points from the Station were also not identified as SWMUs/AOCs. The receptors of the NPDES discharges (i.e., Marshburn Channel [also called Rifle Range Road Ditch], Bee Canyon Wash, and Agua Chinon Wash) are each identified as SWMUs/AOCs and were sampled during the RFA sampling visits.
B1e8	As indicated in Section 3.6.4, several darkened areas were reportedly observed in aerial photographs (specifically, the 1971 and 1982 photographs obtained from Aerial Map Industries, and the 1947 photographs obtained from Whittier College). On what basis were these areas not included as SWMUs or AOCs in the draft report?	As stated on page 3-68 of the Draft PR/VSI, "whether these darkened areas represent staining is highly speculative." These darkened areas may represent areas where the ground was simply wet (with water). Since no corroborating evidence was found to indicate that releases occurred in these areas, they were not included as SWMUs/AOCs in the RFA.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B1e9	Appendix A of the report identifies several tanks whose contents are unknown, yet none of these are identified as SWMUs (e.g., Tanks 37, 40, 53, 54A, 54B, etc.). What was the basis for not including these tanks in the SWMU list?	The contents of these tanks was fuel oil as mentioned in the notes placed under the Comments column at the far right side of the table. (This table was taken directly from a report by EG&G Idaho. When the Jacobs team found additional information from the RFA records review regarding a tank, the information was referenced in the Comments column).
B1e10	Several wash racks identified in Appendix C of the draft report are not included in the SWMU list (e.g., wash racks associated with Map Reference No. 2, 4, 5, etc. in the "Oil Waste Inventory" table). Why are they not identified as SWMUs?	The washracks listed in this table have all been included as SWMUs/AOCs in the RFA except for Map Reference Nos. 2 and 32. There is currently no evidence of the washrack associated with Map Reference No. 2. The wash area associated with Map Reference No. 32 is a coin-operated car wash that is used by Station personnel to wash personal vehicles. There is no information indicating that this car wash has received hazardous wastes; it has not been included as a SMWU/AOC in the RFA.
B1e11	Appendix C of the draft report indicates that abrasive blasting operations may have been conducted at the facility. If this is true, how were the wastes from these operations managed?	Sandblasting occurred at various locations on-Station. The sandblasting waste has supposedly been containerized and properly disposed of as hazardous waste.
B2	Frequently, the information presented in the unit description for each SWMU/AOC (in Section 6.0 of the Draft PR/VSI report) is limited to that observed during the VSI. This is true even though background information pertinent to a SWMU/AOC is contained in site documentation obtained during the PR, and discussed in the earlier sections (or in the appendices) of the report. EPA believes that this approach may have led to erroneous recommendations for suggested further actions. For example:	
B2a	"Currently Active" is entered under Operational History for several SWMUs, even though it is known that the units were operating, say, at least as of 1970. This becomes particularly important when evaluating the release potential for vehicle wash racks and drum storage areas. Several of these units were upgraded in the early 80s. However, it would have been more appropriate to recommend that the soil underneath the pads be sampled.	The rationale for recommending a sampling visit at SWMUs/AOCs in the RFA was agreed to by EPA in its comments (10 October 1991) on the Draft PR/VSI Report. In General Comment 12 previously provided to the Navy, EPA stated:

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B2a (cont'd)		12. Section 5.0. Page 5-25: o EPA agrees with rationale for sampling visit recommendation for Underground Storage Tanks (USTs) and Oil/Water Separators o EPA agrees with rationale for Hazardous Waste Storage Areas (HWSAs) o EPA agrees with rationale for Drum Storage Areas o EPA agrees with rationale for Wash Rack Areas" Sampling visits have been recommended (and now completed) by the Navy for many drum storage areas (DSAs) and washracks at El Toro. In implementing sampling visits, the Navy has used agency-approved rationale in determining those DSAs and washracks that would be evaluated with a sampling visit. This comment contradicts EPA's previous agreement with the Navy's sampling rationale, and is being offered after completion of all field work associated with the sampling visits. Specific SWMUs "questioned" by EPA are also not identified. The Navy believes that the sampling and analysis rationale proposed in the Draft PR/VSI Report and agreed to previously by the agencies represented a thorough and reasonable approach. The Navy has completed implementation of the approved sampling visits, and does not intend to change the sampling rationale.
B2b	No effort seems to have been made to determine the hazardous constituents present in the wastes managed by the SWMUs and AOCs. In addition, frequently, only the wastes observed to be present at a SWMU during the VSI are identified in the individual unit descriptions, even though documentation identifying additional waste types may exist. For those units for which sampling was recommended, sampling and analysis may have been inappropriately limited to those constituents expected in the wastes observed during the VSI.	The Navy takes exception to EPA's claim that "no effort seems to have been made to determine the hazardous constituents in the wastes managed by the SWMUs and AOCs." For many SWMUs/AOCs, a reasonably complete list of waste constituents has been obtained from records review and interviews. Examples include former landfarming areas, USTs, oil/water separators, and PCB spill areas.

Comments By: Environmental Protection Agency (EPA)

Response By: U.S. Navy

Comment No.	Comment	Response
B2b (cont'd)		For SWMUs/AOCs with more complex waste management such as HWSAs and DSAs, the list of wastes was typically limited to those hazardous wastes or materials present during the VSI. (Interviews of Station personnel provided only sketchy, incomplete, and unverifiable information as to potential wastes stored at these areas). Because the Navy recognized that the list of waste constituents obtained for HWSAs and DSAs was potentially incomplete (because of the complex nature of the Station's operation and lack of detailed records on past waste management practices), the sampling visit for the RFA was designed to cover for this lack of complete information regarding waste constituents by proposing analysis of samples at such sites for a full suite of parameters comparable to the RI/FS Program at the Station. The Navy does not believe that sampling and analysis in the RFA was "inappropriately limited." On the contrary, the sampling and analysis program conducted for El Toro's RFA was probably far more extensive than that conducted for a typical RFA. (It should be noted that EPA's statement about limited sampling and analysis does not provide any specific examples to which the Navy can respond).

RESPONSE TO COMMENTS
DRAFT RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
FACILITY ASSESSMENT REPORT
MARINE CORPS AIR STATION (MCAS) EL TORO
EL TORO, CALIFORNIA

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
	The Department's comments on the report appear below. Please attach a cover letter to the Final RFA Report (not an addendum), which includes a list of revisions from the draft edition. The list of revisions must clearly identify all the changes by both section (or table or figure) and page number. Please submit two copies of the Final RFA Report to this office.	Numerous minor changes have occurred throughout the report. The Navy does not intend to list each of these changes along with the corresponding page number. A brief summary of revisions by section in the report follows: Executive Summary Change from 22 to 25 SWMUs/AOCs for further action SWMU/AOC 300 will be included in the RI/FS Final RFA Report is stand-alone document including past work and data validation results Section 1.0 Minor changes Sections 2.0 and 3.0 No changes Sections 4.0 Three new SWMUs/AOCs (septic tanks) Section 5.0 Added section on TICs Section 6.0 Various revisions per agency comments Section 7.0 Minor changes

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
		Appendix A Revised tables according to data validation results and agency comments Appendix B Revised figures per agency comments Appendix C No changes Appendix D Changed statistical basis to 50 percent confidence of the 99th percentile to be consistent with the RI/FS Program Appendix E Added information on derivation of equations Appendix F EPA's revised PRG values (April 2, 1993) are presented Appendix G Added information on TICs Volumes III and IV PR/VSI Report Volume V Sampling Visit Work Plan

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
	GENERAL COMMENTS	
1	Summary of the Department's Recommendations Based on our review, the Department recommends the following additional actions or changes to the proposed recommendations in the Draft RFA Report. Please note that the following is a summary of the Department's recommendations; additional details of the recommendations may appear in Specific Comments (Section II below) or in Other Comments/Recommendations (Section III below). Supplemental information supplied in response to the enclosed comments could result in changes to the Department's additional recommendations.	
1a	Recommendations/Changes: Hazardous Waste Storage Areas (HWSAs) and Drum Storage Areas (DSAs) The sumps of the HWSAs and DSAs should be inspected for cracks. In many cases, the Preliminary Review/Visual Site Inspection (PR/VSI) Report indicates that HWSA/DSA surfaces and berms were inspected, but generally no information is provided in either the PR/VSI or the RFA Report on the condition of sumps at these units.	In response to DTSC's comment, the Navy's consultant inspected the sumps at HWSAs and DSAs at MCAS El Toro in visits during May and June 1993. Eighteen HWSAs and DSAs in the RFA have sumps. The sumps were visually inspected for cracks and other damage. All of the sumps appeared to be in good condition.
1b	Sampling Strategy for Oil/Water Separators and Associated Underground Storage Tanks (USTs) The Department recommends that the sampling strategy for oil/water separators and associated USTs be reviewed to determine whether both units were actually characterized in the RFA sampling effort. To further confound this matter, figures in Appendix B generally only indicate the location of the oil/water separator and not the location of the associated UST. The Department understands that in many (perhaps most) cases, the two units are located side-by-side. However, in at least one case (SWMUs/AOCs 205 and 206), our review indicates that the UST was apparently not characterized by the sampling strategy. In this case, the UST is located approximately 20-feet south of the oil/water separator and away from the vertical boring location. The UST has not been tank tested according to the PR/VSI Report and was recommended for a sampling visit.	A total of 24 oil/water separator (OWS) systems were evaluated with a sampling visit in the RFA. Each OWS system consists of an oil/water separator and a waste oil tank. Twenty of the 24 systems are constructed with the OWS and UST located side-by-side, typically in a single underground unit. At four systems, the OWS and UST are separated by approximately 15 to 20 feet. The following describes the sampling performed at these four OWS systems: o One of these systems (SWMUs/AOCs 248/249) was evaluated with two 25-foot borings, one at the OWS and one at the UST. o SWMU/AOC 211 was evaluated with one 25-foot boring situated between the OWS and UST. The presence of numerous underground utility lines would not allow drilling adjacent to either the OWS or the UST.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
1b (cont'd)		o The remaining two SWMUs/AOCs (65 and 205) were evaluated with a single 25-foot boring each located between the OWSs and USTs. The single boring may not provide optimum coverage, but it does provide information regarding a release from the OWS system (including the OWS, waste oil UST, and connecting piping). o It is likely that these systems will be removed as part of base closure. Sampling of soil performed during the tank removals will provide additional information regarding potential releases from these OWS systems.
1c	USTs The Department recommends testing of all USTs not previously tested (e.g., units in service) or removal of USTs determined to be leaking or abandoned (e.g., SWMU/AOC 263 apparently is abandoned).	Current plans call for the Station to be closed in the near future. Most or all of the USTs and OWS systems will be removed. Soil sampling will be performed as part of the tank removals; it should indicate whether leakage has occurred at a tank site.
1d	SWMU/AOC 9 - Fuel Bladder (Petroleum Fuel) A discussion of the potential for petroleum hydrocarbon contamination below 5-feet should be scheduled for a Project Managers Meeting.	This SWMU/AOC was discussed at the 26 May Project Managers Meeting. The concentration of 414 mg/kg for TFH (diesel) in a 5-foot sample falls below the evaluation criteria of 1,000 mg/kg (California LUFT Manual) used in the report for diesel and heavier petroleum hydrocarbons. The Navy does not plan to change its recommendation for no further action at this SWMU/AOC.
1e	SWMU/AOC 20 - UST T-C (Waste JP-5) A discussion of the potential for petroleum hydrocarbon contamination below 5-feet should be scheduled for a Project Managers Meeting.	This SWMU/AOC was discussed at the 26 May Project Managers Meeting. The concentration of 463 mg/kg for TFH (diesel) in a 5-foot sample falls below the evaluation criteria of 1,000 mg/kg (California LUFT Manual) used in the report for diesel and heavier petroleum hydrocarbons. The Navy does not plan to change its recommendation for no further action at this SWMU/AOC.
1f	SWMU/AOC 26 - HWSA A discussion of the potential for petroleum hydrocarbon contamination below 5-feet and the actual need for an excavation should be scheduled for a Project Managers Meeting.	This comment was discussed at the 26 May Project Managers Meeting. The presence of stained soil near a HWSA could potentially encourage the improper storage of drums outside of the HWSA. Although the TPH concentration falls below criteria requiring further action, the Navy plans to excavate this shallow, stained soil as a "Best Management Practice" (BMP).

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
1g	SWMU/AOC 39 - HWSA *The presence of* polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) in the 10-foot depth sample (top sample) of angle boring A1 may indicate possible surficial soil contamination. A discussion of the potential for surficial soil contamination should be scheduled for a Project Managers Meeting.	The 10-foot sample in angle boring A1 had an Aroclor concentration of 52 ug/kg. Since this is not typically a very mobile compound in the subsurface, it may indicate the presence of PCBs in the surface and near-surface soil at this SWMU/AOC. The Navy agrees with DTSC's comment that additional investigation of shallow soil is warranted. The Final RFA Report will reflect this revised recommendation.
1h	SWMU/AOC 48 - UST 178 (Waste Oil) *A discussion of the potential for surficial soil petroleum* hydrocarbon contamination should be scheduled for a Project Managers Meeting.	The California LUFT Manual has been used as a screening criteria for TPH at SWMUs/AOCs. The 10-foot sample in an angle boring at SWMU/AOC 48 had a concentration of TPH of 822 mg/kg. Since this 10-foot sample falls below the criteria of 1,000 mg/kg for diesel and heavier petroleum hydrocarbons, the Navy does not plan to change its recommendation for no further action.
1i	SWMU/AOC 88 - DSA A discussion of the potential for surficial soil PCB contamination should be scheduled for a Project Managers Meeting.	Aroclor was detected in the 10-foot *sample in an angle boring at a* concentration of 11 ug/kg J (i.e., estimated value below the detection limit). Although the concentration is very low, the Navy agrees that shallow soil should be investigated at this area. PCBs are not typically very mobile in the subsurface, and their presence in a 10-foot sample may indicate shallow soil contamination above. In addition, the area is known to have stored electrical equipment and transformers which may have contained PCBs.
1j	SWMU/AOC 90 - Former Sewage Treatment Plant The Department does not necessarily concur with the recommendation of no further action. *A discussion of this site with additional historical* information should be scheduled for a Project Managers Meeting.	The former sewage treatment plant primarily received sanitary sewage. *In addition to sanitary sewage, the treatment plant also received metal* plating wastes for a period of approximately 1 year in 1945. Because of the short duration that the treatment plant received process wastes (i.e., 1 year) and the dilution that occurred for this waste, it is unlikely that the metal plating wastes affected soil at the treatment plant. It is possible that the sludges generated by the treatment process could have contained materials from the metal plating wastes (e.g., metals). *It should be noted that the sludge drying beds are being investigated* as Site 12 under the RI/FS Program at the Station. Currently, the RI/FS is considering whether to expand its Site 12 boundaries to include the area of the former sewage treatment plant.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
1k	SWMU/AOC 131 - Engine Test Cell The Department does not necessarily concur with the recommendation that this SWMU/AOC be evaluated in a State or local program. Based on PAH contamination (PAHs may pose a potential carcinogenic risk to humans), the Department recommends that this SWMU/AOC should be included in the RI/FS program.	As discussed at the Project Managers Meeting on 26 May, SWMU/AOC 131 will not be included in the RI/FS Program. Since PAHs were detected in just one of eight soil samples at the site (H1 at 2 feet), it would be advantageous to first determine the extent of PAHs prior to considering the site for inclusion into the RI/FS. It seems likely at this time that the PAHs at the site (in H1 at 2 feet only) represent an isolated patch of contamination that could be remediated with only very minor excavation. The Navy, therefore, plans to conduct further investigation under a program other than the RI/FS.
1l	SWMU/AOC 145 - UST 529 (Waste Oil) If this UST is still in service, the Department recommends that it be taken out of service as soon as possible and leak tested and/or removed/investigated.	The Navy agrees with this comment. Based on contamination encountered in samples from both angle borings drilled near this tank, the Station should take measures (e.g., leak test, repair, take out of service, etc.) to mitigate future releases from the tank and associated piping.
1m	SWMU/AOC 146 - DSA This corrosive material drum storage area was not recommended for a sampling visit, however, the Department recommends that the drain terminus should be identified.	SWMU/AOC 146 is a DSA housed in a small, one-room building. The Station utility maps indicate the presence of a sanitary sewer connection to this building. Thus, it is believed that the floor drain is connected to the sanitary sewer. There was no evidence of release at this SWMU/AOC during the VSI.
1n	SWMU/AOC 151 - Oil/Water Separator 605-C The recommended inspection of this unit should include an evaluation of the purpose of several pipes protruding from the asphalt surface at this location.	Agreed. These pipes are believed to be vent pipes for the OWS system.
1o	SWMU/AOC 171 - HWSA A discussion of the potential for surficial soil PAH contamination should be scheduled for a Project Managers Meeting.	The 10-foot sample in angle boring A1 contains various SVOCs near detection limits. Since SVOCs are not very mobile in the subsurface, it is possible that higher, more significant concentrations of SVOCs are present in the shallow soil above this sample. For this reason, the Navy agrees to evaluate shallow soil at this area. The Final RFA Report will be revised to reflect this change.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
1p	SWMU/AOC 173 - Oil/Water Separator 671 If this oil/water separator is still in service, the Department recommends that it be taken out of service as soon as possible and leak tested and/or removed/investigated. Petroleum hydrocarbon and BTEX contamination at this site likely extends below the 25-foot sample depth.	The Navy agrees with this recommendation. Based on contamination encountered in the 25-foot boring drilled near this separator, the Station should take measures to mitigate future releases from the separator and associated piping.
1q	SWMUs/AOCs 175 and 176 - Oil/Water Separator 672-A and UST 672-B (Waste Oil, JP-5), respectively Since these units are apparently inactive and since MCAS El Toro is tentatively scheduled for closure, the Department recommends, if feasible, that the units be removed and soils around and beneath the units be further investigated. Petroleum hydrocarbon and BTEX contamination at this site likely extends below the 25-foot sample depth.	These SWMUs/AOCs are currently inactive. Additional borings are recommended at SWMUs/AOCs 175 and 176 to determine the extent of contamination. Since it is known that contamination exists to a depth of 25 feet, soil deeper than 25 feet is of more immediate concern at this time than soil beneath the tanks. The soil beneath the tanks can be evaluated at the time the tanks are removed.
1r	SWMU/AOC 231 - UST 899-E (Waste Oil) Additional evaluation is recommended for this UST which failed a tank test conducted in 1990.	Samples collected during the sampling visit do not indicate contamination at this UST. It is likely that this tank will be removed as part of the base closure at MCAS El Toro. The soil below the tank can be evaluated at that time.
1s	SWMU/AOC 243 - Washrack Additional evaluation is recommended for the two 18-inch diameter pipes protruding from the concrete surface of the washrack. The PR/VSI Report indicates that a liquid surface was visually observed approximately 10-feet down the pipes.	The pipes were visually inspected for a second time on 18 May 1993. A liquid (water) was still present at the bottom of the pipes. A PVC pipe was used to probe the bottom of the 18-inch pipes. The bottom of these pipes appears to be solid material, possibly concrete. No further inspections or actions are planned.
1t	SWMU/AOC 260 - Aboveground Storage Tank This tank, if currently in service, should be provided with secondary containment and an impervious base, if feasible.	This aboveground tank was apparently used on a temporary basis only. It has been removed from the site since the time that the VSI was conducted.
1u	SWMU/AOC 261 - Waste Oil Collection Drum An overfill prevention device should be considered for this unit if currently in service.	Since the VSI was conducted, the Station has placed the drum inside a plastic spill containment drum.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
1v	SWMU/AOC 265 - Abandoned Metal Plating Sewer Lines The Department recommends the consideration of one or more leak test procedures to identify potential releases.	As discussed in the Project Managers Meeting on 26 May, the current condition of the abandoned sewer lines as determined from a leak detection test would not necessarily represent the condition of the lines when they were last used in 1945. For example, earthquakes and normal aging of these lines could have altered their condition. Therefore, leak testing of the abandoned sewer lines is not recommended.
1w	SWMU/AOC 300 - Solvent Spill Area Due to its proximity to SWMU/AOC 194 and the presence of similar contaminants, SWMU/AOC 300 could be included within SWMU/AOC 194 in the RI/FS program.	The RI/FS Site 3 (Original Landfill) boundaries will be expanded to include SWMU/AOC 194 and SWMU/AOC 300.
2	USTs In Section 4.3 (Recommendations for a Sampling Visit), page 4-27, the report states that the rationale used in recommending sampling included USTs that passed a tank test (integrity test) conducted in 1990. For those USTs which passed the test, this rationale may not consider releases from UST ancillary equipment such as piping and vent lines (including spills at vent lines due to overfilling) as well as releases from loading/unloading activities. The report should include a description of the tank tests, including whether ancillary equipment was tested. The Department recommends testing of all USTs not previously tested (e.g., units in service) or removal of USTs determined to be leaking or abandoned (e.g., SWMU/AOC 263 apparently is abandoned).	Tank integrity tests are hydrostatic pressure tests in which the tank and associated piping (such as vents and fill pipes) are filled with fluid. Changes in the fluid level are observed to assess leakage from the tank system. Therefore, vent lines would be included in the tank test. The Navy agrees with DTSC's recommendation for testing or removal of USTs. Since MCAS El Toro is scheduled for closure, it is likely that the Station's USTs will be removed.
3	Dioxins Considering subsurface mobility properties, the 10-foot depth samples for dioxin at SWMUs/AOCs 194 and 300 may have been targeted too deep.	At SWMU/AOC 194, samples were collected at depths of approximately 2.5 and 5 feet below ground surface and analyzed for a full suite of parameters including dioxins. DTSC's comment regarding sample depth at this SWMU/AOC is incorrect. At SWMU/AOC 300, three 25-foot borings were drilled. Only one sample (at 10-foot depth) was analyzed for dioxins. In retrospect, the Navy agrees that perhaps the 5-foot sample would have been preferable for dioxin analysis at SWMU/AOC 300.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
4	Leaching Pathway Evaluation Model (El Toro Model) and Preliminary Remediation Goals (PRGs) The El Toro Model (ETM) values were proposed in the Draft RFA Report to evaluate contaminant concentrations in the vadose zone which could possibly affect groundwater quality. The ETM values, purportedly derived using conservative assumptions, nevertheless are quite high in some cases and exceed some Total Threshold Limit Concentration (TTLC) values for pesticides/PCBs and metals. TTLC values are used for hazardous waste classification in the State of California. Some examples of ETM values exceeding TTLC values are:	ETM Comment: Some of the El Toro Model (ETM) values exceed TTLC values. The ETM value is a soil concentration that if left in place, would result in a groundwater concentration at the MCL. TTLCs are criteria applied to waste for the purpose of waste classification. TTLCs are not site-specific criteria for protection of groundwater. Therefore, the Navy does not think that a direct comparison of ETM values (or other vadose zone model values) to TTLC values is appropriate.
	Pesticides/PCBs o the 145,370 ppb ETM value for Aroclor-1254 exceeds the TTLC value for PCBs of 50,000 ppb; o the ETM values for DDD, DDE, and DDT (217,960 ppb, 67,990 ppb and 22,300 ppb, respectively) exceed the TTLC value of 1,000 ppb; o the 431,360 ppb ETM value for methoxychlor exceeds the TTLC value of 100,000 ppb; **Metals** o the 169,600 ppm ETM value for barium exceeds the TTLC value of 10,000 ppm; o the 13,408 ppm ETM value for copper exceeds the TTLC value of 2,500 ppm; o the 1,123 ppm ETM value for lead exceeds the TTLC value of 1,000 ppm; o the 206 ppm ETM value for mercury exceeds the TTLC value of 20 ppm; and o the 20,320 ppm ETM value for zinc exceeds the TTLC value of 5,000 ppm.	The ETM was designed to be conservative. It does not take into account the relatively deep groundwater at El Toro, nor the varying soil strata, including clay layers, which impede downward migration of contaminants. Comparisons were made to VLEACH, a more detailed vadose zone model. Because of the large number of sites in the RFA and a lack of detailed vadose zone data at RFA sites (some of which had borings only 5 feet deep), use of a more complex model is not warranted. A comparison of VLEACH to ETM values was done for a number of compounds using typical SWMU parameters. The resulting comparison indicates that VLEACH values are reasonably comparable to ETM values. An addendum will be placed at the front of the Final RFA Report describing VLEACH and the ETM. PRG Comment: Some PRG values exceed TTLC values. PRGs are risk-base values for soil. TTLCs are criteria for classification of waste material. As with the ETM values, the Navy does not believe that a comparison of PRGs to TTLCs is appropriate. It should be noted that the Navy used the most conservative PRG category (i.e., residential exposure) for the RFA.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
4 (cont'd)	PRG values, published in a draft document from the U.S Environmental Protection Agency (U.S EPA), also exceed some TTLC values for pesticides and metals. The Department, which has just recently received the PRG values from U.S. EPA, will be evaluating these values for general risk-screening purposes. A potential concern is that PRG values are based on ingestion assumptions (and apparently not dermal contact or inhalation assumptions) and as such, may not necessarily be sufficiently conservative (health-protective). Based on our review of the ETM, the Department recommends a modification of the model, use of another model, or an alternative approach. We recommend that the necessity for a model and the utility of an alternative approach be discussed at a Project Managers Meeting. Based on the sampling analysis results, the majority of SWMUs/AOCs requiring further action have petroleum hydrocarbon and BTEX contamination. It may be possible to establish remediation goals for these SWMUs/AOCs by using other criteria without the use of a model, however again, consideration of an alternative approach should be an agenda item for a Project Managers Meeting.	SWMUs/AOCs with SVOCs - SWMU/AOC 131: The Navy does not recommend including SWMU/AOC 131 in the RI/FS Program. Since PAHs were found in just one 2-foot sample, the extent of contamination may be extremely minor, and should be determined prior to considering inclusion of this SWMU/AOC into the RI/FS Program. The Navy plans to conduct further investigation at this SWMU/AOC under a program other than CERCLA. Identification of SWMUs/AOCs with Metals Concentrations Above Background Levels: The text will be revised to identify those SWMUs/AOCs with metals concentration above background threshold concentrations.
	For SWMUs/AOCs considered for further action due to the presence of contamination other than that of total petroleum hydrocarbon (TPH) and/or total fuel hydrocarbon (TFH) constituents only (e.g., SWMU/AOC 131 with semivolatile constituent contamination), a risk assessment can be considered for setting site-specific soil cleanup levels. For this reason, the Department is recommending that SWMU/AOC 131 and any similar SWMUs/AOCs be included into the RI/FS program. The Final RFA should also identify SWMUs/AOCs with detected metal concentrations exceeding background threshold concentrations (as listed in Table 6-12).	
5	Definition of Further Action The RFA Report should clearly state (e.g., in the Executive Summary), for those sites recommended for further action, that further action does not necessarily mean additional investigative action. In some cases, recommendations for further action propose repairing cracks in paved areas and leaving soil in place.	The types of further action recommended by the RFA are specified in the Executive Summary on pages ES-3 and ES-4. In addition, the Executive Summary will be revised to indicate that further action does not necessarily mean additional investigation.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
6	Hazardous Waste/Hazardous Material Storage Hazardous material storage and less than 90 day hazardous waste storage should be conducted in paved areas (preferably a relatively impervious surface such as concrete without gaps or cracks) and permanently bermed, if feasible, to preclude releases of hazardous constituents.	The current hazardous waste/hazardous materials storage areas are typically of concrete construction and are bermed and covered. It should be noted that some HWSAs/DSAs in the RFA are former storage areas no longer in use. Some of these were unpaved areas at the time they were active. These HWSAa and DSAs were typically constructed with sandbag berms approximately 2 to 3 feet high and lined with a thick plastic sheet.
7	Management Plan for Closing Bases If a final determination is made that MCAS El Toro will undergo base closure, an overall management plan for hazardous material/hazardous waste units should be developed prior to base re-use. Such a plan should encompass such units as USTs, oil/water separators, and less than 90 day hazardous waste accumulation areas. These units may not be recommended for further action under the RFA investigation nor subject to closure requirements as specified in a Hazardous Waste Facility Permit. However, such units could require decontamination, removal, removal with additional soil investigation, etc.	The Navy agrees with this comment. Because the Station is now scheduled for closure, a management plan for base closure will need to be prepared.
8	Tentatively Identified Compounds (TICs) The report should identify and discuss TICs.	The Final RFA Report will include results of the data validation effort. A discussion of TICs will also be provided.
9	JP-4 and JP-5 Constituents The RFA Report should include a list of analyzed constituents for both JP-4 and JP-5 fuels indicating the relative percentages of each constituent.	JP-4 and JP-5 are jet fuels composed of a complex mixture of hydrocarbons. JP-4 has a typical boiling range of 140 to 470°F; JP-5 has a higher boiling range of 355 to 490°F. These jet fuels overlap typical boiling ranges of gasoline (100 to 400°F) and diesel (310 to 600+°F) fuel. Therefore, where the TFH analyses indicate both the presence of TFH (diesel) and TFH (gasoline), it is likely to be indicating the presence of jet fuel. Individual constituents of petroleum hydrocarbon fuels are not identified by the TFH analysis. Volatile hydrocarbon constituents of fuels (such as benzene, toluene, and xylene) would be identified from the volatile organics analyses. Some of the semivolatile hydrocarbon constituents of fuels similarly would be identified by the semivolatile organics analyses.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
10	Figures in Appendix B The Boring Location Maps often lack sufficient detail, e.g., not displaying the following for some SWMUs/AOCs: 1) concrete vs. asphalt paved or unpaved areas, 2) the boundaries of units, 3) the locations of both oil/water separators and associated USTs, 4) the location of drains and sumps, and 5) the extent of observed stained areas. If feasible, the figures could indicate the depth (bottom) of oil/water separators and USTs.	The figures will be revised to include additional details as feasible. For example, additional labeling of concrete/asphalt/unpaved areas and boundaries will be incorporated. Some information requested above, however, is believed to be too detailed for a plot plan and has not been incorporated. (Note: The bottom of the OWSs is typically 12 feet below ground surface (bgs); the top of the OWSs is typically 8 feet bgs.)
11	Petroleum Hydrocarbon Contamination Soil samples from several SWMUs/AOCs indicated the presence of petroleum hydrocarbons based on EPA Methods 418.1 results (total recoverable petroleum hydrocarbons). Yet for many of these results, TFH analyses (modified EPA Method 8015) indicated non-detectable or insignificant levels of gasoline or diesel fraction molecular weight compounds. These results indicate the possible presence of longer aliphatic (straight-chain) hydrocarbons (e.g., greater than C_{20}). For such SWMUs/AOCs recommended for additional borings, an additional TFH standard (e.g., oil) should be considered.	The modified EPA Method 8015 is an analysis based on the California LUFT approach. Use of a standard for hydrocarbons heavier than diesel (e.g., oil) would potentially require changes to the apparatus used for the method. At this time, it is not known if any laboratories have the capability of providing an "oil" standard for the TFH analysis. If an oil standard is not offered by any laboratories, the analyses for TPH by Method 418.1 should be adequate for assessing heavy hydrocarbon contamination.
12	Appendix A - Sampling Visit Analytical Results In the Recommendations column of the Sampling Visit Results tables for SWMUs/AOCs with recommended further action, please indicate results for all analytical parameters used. For example, while the SWMU/AOC might be recommended for further action based on petroleum hydrocarbon contamination, please indicate if VOCs and SVOCs are less than CRDLs or PRGs, if metals are below BGTs, etc.	The Sampling Visit Results tables in Appendix A will be revised as DTSC suggests in this comment.
	SPECIFIC COMMENTS	
1	Executive Summary Please list the SWMUs/AOCs recommended for further action.	The SWMUs/AOCs recommended for further action are listed in the executive summary (see page ES-3 and ES-4).
2	Table 4-2 (SWMUs and Areas of Concern Recommended for Sampling Visit, MCAS El Toro RFA) This table should indicate that SWMUs/AOCs 67, 72, 217, and 218 were deleted from the sampling visit.	Table 4-2 will be revised as suggested.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
3	Section 5.1.3 (Analytical Parameters) Please indicate the method number for each analysis, including TPH and TFH. Indicate the standards used for quantifying TFH.	Volatiles, semivolatiles, pesticides/PCBs, metals, and cyanide were analyzed per CLP procedures: Routine Analytical Services (RAS) Target Compound List for organics and RAS Target Analyte List for inorganic. As CLP analyses, EPA method numbers (such as EPA 8240 for volatile organics analyses) do not apply to these analyses. Special Analytical Services (SAS) were used for dioxins (SW-846 Method 8280), TFH (CA LUFT Method), and TPH (EPA Method 418.1). Standards for gasoline and diesel were used for TFH-gasoline and TFH-diesel, respectively.
4a	Section 5.1.4.2 (New SWMUs and AOCs) SWMU/AOC 300 - Solvent Spill Area The report states that the "... four 25-foot vertical borings were drilled adjacent to the two trenches." The sampling strategy for the recommended additional borings should evaluate locating at least some of the borings within trench areas (according to the RFA Report, trenching activities were halted, i.e., the water supply line was not installed). For SWMU/AOC 300 in Figure 50 or Appendix B, please indicate the locations of the two trenches and the area of the solvent spill. Due to its proximity to SWMU/AOC 194 and the presence of similar contaminants, SWMU/AOC 300 could be included within SWMU/AOC 194 in the RI/FS program.	During excavation of each trench (each about 4 feet wide by 4 feet deep), solvent odors were observed from the trench and soil piles. Two of the borings at SWMU/AOC 300 were drilled directly adjacent to the trenches to sample soil that was not aerated from exposure to the elements. It should be noted that there might be no advantage to placement of future borings in one of the trenches. Each had odors, and a distance of about 50 feet separated them. The figure has been revised to indicate the approximate locations of the trenches. The exact location and extent of the "solvent spill" is not known. Based on decisions made at the 26 May 1993 Project Managers Meeting, SWMU/AOC 300 will be included along with SWMU/AOC 194 into the expanded boundaries of RI/FS Site 3.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
4b	SWMUs/AOCs 301 and 302 - Mark 21 Arrest System Describe the construction design of the USTs, including the type of tank material.	The Mark 21 Arrest System is designed to be a mobile arresting system which can be easily transported and erected at temporary aircraft landing facilities during field operations. The system is constructed such that four anchor rods are driven several feet into the ground for support. The hydraulic fluid holding tank rests atop the ground surface. The tank has an approximate 500-gallon capacity. It is constructed with heavy gage steel and measures approximately 6 feet by 6 feet by 2 feet high. The Mark 21 Arrest System was investigated because it was reported during interviews with Station personnel that the tanks may have leaked hydraulic fluid.
4c	SWMU/AOC 303 - UST at Building 359 Please indicate the types of wastes managed in the UST and the type of tank material. Please describe all ancillary equipment for the UST, including piping, vent lines, tanks and sumps associated with the UST, etc. Please indicate the location of ancillary equipment in a figure.	The waste managed in the UST is expected to have been waste TCE. A drain is located above the UST. A vent pipe is located on the side of Building 359. As with all other USTs in the RFA, ancillary equipment such as vent lines will not be shown on figures.
4d	SWMU/AOC 304 - Conduit Trenches Inside Building 359 Please indicate the type of tank (UST) material and the respective capacities of the two trichloroethene (TCE) degreaser tanks and the UST. Please indicate if the concrete (determined to be free of cracks) in the trenches is part of the original design from the late 1940s. Indicate if a sealant has been applied to the concrete and if so, the type of sealant and the date of sealant application. Please describe any secondary containment for the conduit lines outside the west wall of Building 359. Please indicate the location of the two TCE degreaser tanks, metal conduit lines, concrete trenches, the UST, and all ancillary equipment in a figure.	The existing TCE degreaser tank is SWMU/AOC 100. It is constructed of steel and has a capacity of about 100 gallons. There is currently no second degreaser. Its possible existence was mentioned by Station personnel, but no location was identified. The UST is a fiberglass tank of about 500-gallon capacity. The concrete trenches appear to be part of the original design of the building since there are no visible signs (e.g., saw kerfs) on the flooring to indicate that the trenches were later additions. It did not appear from visual observations that a sealant had been applied to the concrete. The trenches provide secondary containment for the pipelines. No liquids were passed directly through the trenches. The degreaser tank and the trenches are located in the southern corner of Building 359 (Figure 33).

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
5	Section 5.1.4.3 (Elimination of Four SWMUs/AOCs from the SV) The Phase II RI work plan should include the original (or proposed alternative) sampling strategy for: o SWMUs/AOCs 67, 217, and 218 (in RI/FS Site 13) o SWMU/AOC 72 (in RI/FS Site 7).	The work originally proposed in the RFA for these SWMUs/AOCs may not be appropriate for the Phase II RI/FS Program. The Navy will evaluate the presence of these units within RI/FS site boundaries and determine an appropriate sampling strategy.
6	Section 5.1.4.5 (Amendments - Analytical Testing) Since the criteria for trip blanks was changed from one per cooler containing VOC samples to one every other cooler containing VOC Samples, please indicate any and all breakage of VOC samples in coolers not represented by a trip blank and indicate all other VOC samples within the same cooler.	No breakage of any sample containers, including VOC samples, occurred during the fieldwork for the RFA sampling visits.
7	Section 5.3.2 (QC Sampling Results) A discussion on the use of the field blanks in future sampling efforts should be scheduled for a Project Managers Meeting.	No response necessary.
8a	Section 6.3.1 (TPH and Volatile Organics) In the description of the results for SWMUs/AOCs 175 and 194 on page 6-18, please include the boring location numbers, sample depths and constituent concentrations for results detected above screening values.	The details requested in the above comment are provided in the summary table in Appendix A of the report. Since both of these SWMUs/AOCs are recommended for further action and the sampling results do not indicate extent of contamination, information on the sample location numbers and depths has been relegated to the Appendices. The Navy does not plan to change this aspect of the report.
8b	List the SWMUs/AOCs with TPH <1,000 mg/kg and all volatile organics below screening values that are eliminated from further consideration (NOTE: originally, this number of SWMUs/AOCs was three using the ETM and PRG values).	It is believed that DTSC's comment refers to TPH < 100 mg/kg, not 1,000 mg/kg. The text will be revised to include this information.
8c	List the SWMUs/AOCs with TPH <1,000 mg/kg, no BTEX above CRDLs, and all other volatile organics less than screening values that are eliminated from further consideration (NOTE: originally, this number of SWMUs/AOCs was thirty-seven using the ETM and PRG values).	The text will be revised to include this information.
8d	Please note that the report lists eight SWMUs/AOCs, not seven, for further action on a case-by-case judgmental basis.	The text will be revised.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
8e	SWMU/AOC 151 - Oil/Water Separator (605-C) The recommended inspection of this unit should include an evaluation of the purpose of several pipes protruding from the asphalt surface at this location.	As part of the inspection, the pipes protruding from the ground will be evaluated. These pipes are believed to be vent pipes.
8f	SWMU/AOC 260 - Aboveground Storage Tank In addition to repairing cracks in the pavement, this tank should be provided with secondary containment and an impervious base, if feasible.	Since the time of the VSI, the aboveground storage tank has been removed from the site.
9	Section 6.3.2 (Semivolatile Organic Compounds) In the second bullet on page 6-28, list the SWMUs/AOCs with sample concentrations above detection limits but below screening values (NOTE: originally, this number of SWMUs/AOCs was six using ETM and PRG values).	The text will be revised to include this information.
10a	Section 6.3.3 (Pesticides/PCBs) In the second bullet on page 6-34, list the SWMUs/AOCs with sample concentrations above detection limits but below screening values (NOTE: originally, this number of SWMUs/AOCs was eleven using ETM and PRG values).	The text will be revised to include this information.
10b	SWMU/AOC 244 - PCB Spill Area Please indicate the lateral extent and depth of the former excavation. Describe the former field screening methods or fixed laboratory analyses used to characterize the site for excavation.	The Station has not been able to locate formal records providing a detailed account of the PCB spill and cleanup. Information regarding this SWMU/AOC has been obtained from discussions with Station personnel. Data such as lateral extent and depth of the excavation are not known. Since PCBs are not very mobile compounds, the excavation was probably shallow. In attempts to obtain information on this spill, the Jacobs Team has contacted the following former employees at the Station: Mike Rehor (formerly the Environmental Coordinator at MCAS El Toro and now a consultant in Chicago, IL) and Nancy Yates (a former environmental worker at El Toro now working at the Naval Weapons Station Seal Beach).
11	Section 6.3.4 (Metals)	
11a	In the second bullet on page 6-40, list the SWMUs/AOCs with sample concentrations above background levels but below screening values (NOTE: originally, this number of SWMUs/AOCs was twenty-five using ETM and PRG values).	The text will be revised to include this information.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
11b	SWMU/AOC 90 - Former Sewage Treatment Plant The PR/VSI Report states that this facility was in operation from the 1940s until it was abandoned/demolished in the 1970s and that wastewater from former metal plating operations was sent to the plant during the 1940s. Did the former sewage treatment plant consist of below ground surface impoundments (lined or unlined)? If so, the impoundments may have been filled in and thus the 5-foot deep borings may not have been deep enough to assess residual contamination. The highest detected arsenic concentration (103 mg/kg) was at the 5-foot depth, but the sampling strategy does not provide information as to whether or not the arsenic concentrations continue to increase with depth below 5-feet. The Department does not necessarily concur with the conclusion that the single, isolated detected occurrence does not represent significant sources of metals contamination at the site nor does the Department necessarily concur with the recommendation of no further action. A discussion of this site with additional historical information could be scheduled for a Project Managers Meeting.	Historic aerial photographs of the plant show the presence of impoundments that appear to be lined. All but two impoundments appear to be aboveground. (This information resulted from a review of the photographs taken by Williams, Hoffman, and Anderson; Imagery Analysts, for Environmental Monitoring Systems Laboratory of Las Vegas in August of 1991). The Navy is in the process of evaluating whether to include the former sewage treatment plant into the RI/FS Program through an expansion of the Site 12 (Sludge Drying Beds) boundaries.
11c	SWMU/AOC 265 - Abandoned Metal Plating Sewer Lines The abandoned sewer lines were apparently used for transporting metal wastes to the former sewage plant. The sampling strategy of ten 25-foot intervals could potentially miss areas impacted by the release of metal plating wastes. The Department recommends consideration of one or more of the following leak test procedures: 1. *Smoke Testing* In unpaved areas, this procedure can identify and pinpoint gross defects by forcing non-toxic smoke into the underground piping system. 2. *Dyed Water Infiltration Testing* Fluorescent dye is mixed with water and is flooded around or injected into the surface surrounding piping. Dyed water can infiltrate the defects. Leaks are detected visually or by remote video camera inspection. 3. *Cleaning/Flushing of Pipelines and Remote Video Inspection* If piping is deemed capable of withstanding cleaning/flushing procedures, the piping is cleaned/flushed and followed with remote video inspection of the interior of the piping system. The need for additional sampling could be evaluated based on the results of the leak test procedure(s).	The Navy does not plan to test the abandoned metal plating sewer lines. These lines were used for a period of one year in 1945 when metal plating operations were active. During this short 1-year period of operation, it would seem unlikely that the pipes had leaked. More importantly, however, a leak test procedure conducted today would not represent the condition of the lines in 1945 when they were in operation. Earthquakes and normal aging could have impacted the lines since that time.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
	OTHER COMMENTS/RECOMMENDATIONS	
1	SWMU/AOC 4 - Bee Canyon Wash For SWMU/AOC 4 in Figure 2 of Appendix B, indicate concrete lined and unlined sections of the wash.	The figure will be revised to indicate the lined and unlined portions of the wash. RFA samples were collected from beneath an unlined portion of the wash.
2	SWMU/AOC 5 - Borrego Canyon Wash In Figure 3 of Appendix B, indicate if Borrego Canyon Wash is concrete lined or unlined in the area of the two boring locations.	The figure will be revised to indicate the lined and unlined portions of the wash. Borrego Canyon Wash is unlined at the locations where the borings were drilled.
3	SWMU/AOC 7 - Transformer Storage Site The PR/VSI Report states that one transformer, located near the center of the storage area, leaked oil from a valve onto the unpaved soil. The boring location as indicated in Figure 5 of Appendix B, while located near or within a stain area, is apparently not near the center of the storage area. Was the release from the transformer valve investigated? What is the origin of the stain indicated in Figure 5? Please indicate the extent of the stain in Figure 5 and the location and extent of the leaked oil near the center of the storage area.	At the time of the VSI, the storage yard consisted of one large area used for storing used electrical transformers. Prior to the sampling visit at this SWMU/AOC, the transformers were removed and the storage yard was divided into two separate storage areas. Thus, as a result of the subdivision, the location of the stain in Figure 5 of Appendix B appears to be more toward one side. The sampling locations for the stain were based on measurements taken from landmarks during the VSI. These landmarks did not change prior to the sampling visit.
4	SWMU/AOC 8 - Abandoned Well 50-3285 and SWMU/AOC 10 - Abandoned Well 24-4247 Were the 3,285-foot depth well (SWMU/AOC 8) and well 24-4247 (SWMU/AOC 10) properly decommissioned? Are there any other such oil, gas, irrigation, etc. wells located at the Station?	Records available from the California Department of Conservation, Division of Oil and Gas were reviewed. The abandonment of these wells is described on page 3-70 of the Draft PR/VSI Report. Well 24-4247 (SWMU/AOC 10) was apparently filled with drilling mud when abandoned in 1927. Well 50-3285 (SWMU/AOC 8) was filled with heavy drilling mud with concrete plugs at depths of 2, 100, 320, and 500 feet. Other than these two abandoned oil wells and numerous groundwater monitoring wells, no other wells are known to exist within the Station boundaries.
5	SWMU/AOC 9 - Fuel Bladder (Petroleum Fuel) Were borings located within the two excavated pits? The PR/VSI Report indicates that the excavated pits are probable evidence of spill areas where contaminated soil was removed. Please indicate the excavated pit areas and the engine testing concrete surface in Figure 7 of Appendix B.	Two of the three borings drilled at this site were drilled within the confines of the bermed area where the fuel bladder had been located. The third boring was drilled in an area adjacent to the bermed area where the fuel hoses and equipment were stored.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
5 (cont'd)	The PR/VSI Report states that the bladder was used to store fuel for engine testing. The 5-foot depth sample of boring H2 had a TFH (diesel fuel) result of 414 mg/kg. The sampling strategy does not provide information as to whether or not the TFH concentrations continue to increase with depth below 5-feet. A discussion of the potential for petroleum hydrocarbon contamination below 5-feet should be scheduled for a Project Managers Meeting.	The excavated pit inside the earthen berm was used to house the fuel bladder which would change shape as it was filled and emptied. The pit was not the result of excavating a fuel spill. Some time between the VSI and the sampling visit, the fuel bladder area was graded. The location of the bladder area was reconstructed according to field measurements taken during the VSI. Two borings were drilled within the former bermed area; boring H2 was placed where the fuel bladder had been housed. Boring H3 was drilled outside the northwest corner of the bermed area where the drums and abandoned hoses were located at the time of the VSI. The concrete surface for engine testing is located to the south of the fuel bladder area beyond the boundaries of the figure. Since this was not a part of SWMU/AOC 9, the figure is not planned to be revised.
6	SWMU/AOC 11 - Agua Chinon Wash For SWMU/AOC 11 in Figures 7, 8, and 9 of Appendix B, indicate if the wash is lined or unlined in the area of the four boring locations.	Agua Chinon Wash is unlined at the location where borings were drilled. The figures will be revised to indicate that the wash is unlined at these locations.
7	SWMU/AOC 13 - Drop Tank Storage Area The PR/VSI Report states that several times excess fuel was drained onto the ground or into a storm drain. Describe the storm drain and indicate its location in Figure 10 of Appendix B. Please also indicate the asphalt surface in Figure 10 of Appendix B.	Figure 10 will be revised to indicate the approximate locations of the storm drain and asphalt surface at SWMU/AOC 13.
8	SWMU/AOC 14 - Drop Tank Fuel Storage Area The PR/VSI Report states that several times excess fuel was drained onto the ground or into a storm drain. Describe the storm drain and indicate its location in Figure 11 of Appendix B. Indicate the unpaved area (on the eastern side) in Figure 11. The photograph of this site on page 6-31 in the PR/VSI Report apparently indicates a grassy area near the storage area. Was fuel drained in this grassy area? Were any borings located in the grassy area? Please indicate the grassy area in Figure 11.	The nearest storm drain identified during the VSI is located approximately 500 feet northwest of the boring locations. Because of the large distance, it is not feasible to show the location of this storm drain in Figure 11. There are no known reports of the fuel being drained onto the grassy area near the storage area. No stressed vegetation or soil stains were observed in the grassy area during the VSI; no borings were located in this area. Figure 11 will be revised to identify the unpaved, grassy area and the general drainage direction.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
9	SWMU/AOC 15 - Wash Water Runoff Site (Fuel Station 576) Indicate the drainage path, stain areas (in the unpaved area) and storm drain in Figure 12 of Appendix B.	The general drainage path is shown in Figure 12. The three borings drilled in the runoff area were positioned within the general drainage path between the end of the drainage channel and the storm drain. The figure will be revised to identify the location of the storm drain.
10	SWMU/AOC 15 - Wash Water Runoff Site (Fuel Station 576) In Figure 13 of Appendix B, indicate the drainage path, stain areas (in the unpaved area), storm drain and the unlined ditch that runs the length of the unpaved area.	The general drainage path is shown in Figure 13. The three borings drilled in the runoff area were positioned within the general drainage path between the end of the drainage channel and the storm drain. The figure will be revised to identify the location of the storm drain.
11	SWMUs/AOCs 17, 18, 19, 21, 22, 23, 24, and 58 - USTs T-05 (Waste Oil, Waste JP-5), T-02 (JP-5), T-03 (Waste Diesel), T-06 (JP-5), T-08 (Waste JP-5), T-01 (Waste JP-5), T-07 (Motor Fuel) and T-04 (Waste Oil), respectively The spill containment design for these units requires a positive action by an attendant to place the metal barrier across the runoff opening allowing a spill to flow into the tank (see photographs on pages 6-39, 6-45, 6-50 and 6-112 of the PR/VSI Report). Moreover, if the metal barrier is placed across the runoff opening during a spill, the seal may not be leakproof. Please indicate if soils adjacent to the runoff openings were inspected for stains or field sampled for the presence of petroleum hydrocarbons/organics.	During the VSI, the spill containment areas at these SWMUs/AOCs were visually inspected. No soil staining was observed. Therefore, no soil samples were collected from these specific areas.
12	SWMU/AOC 20 - UST T-C (Waste JP-5) In Figure 14 of Appendix B, please indicate the concrete pad, unpaved areas and the significant oil stains present around the concrete pad. Please also indicate the location of the fuel release from a supply valve near Monitor 4. Was this release confined to the concrete pad or does it extend to unpaved areas? Were borings located within potential release areas? The 5-foot depth sample of boring H2 had a TFH (diesel) result of 463 mg/kg. The sampling strategy does not provide information as to whether or not the TFH concentrations continue to increase with depth below 5-feet. A discussion of the potential for petroleum hydrocarbon contamination below 5-feet should be scheduled for a Project Managers Meeting.	The fuel release from the supply valve near Monitor 4 appeared to be confined to the concrete; sampling was not done at this part of the SWMU/AOC. This staining is not shown in Figure 14. The borings were drilled within what appeared to be a formerly excavated area. Apparently, a release to the soil occurred and the affected soil was excavated and placed in drums. Figure 14 will be revised to show the approximate extent of the area that had been excavated. The TFH (diesel) concentration is less than the criteria of 1,000 mg/kg used for diesel in the RFA Report. The Navy does not plan to do further work at this SWMU/AOC.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
13	SWMU/AOC 26 - HWSA (Note: the Draft RFA Report recommends excavation of shallow, stained soil at this SWMU/AOC). Please identity the HWSA and sump in Figure 15 of Appendix B. Was Boring H1 located within the stain area about 10-feet northeast of the HWSA? Figure 15 indicates that Boring H1 is located about 15-feet northeast of the HWSA. Please indicate the extent of the stain in Figure 15. Are there cracks in the HWSA sump? The PR/VSI Report indicates the storage surface and berm are free of significant cracks. The 5-foot depth sample of Boring H1 had a TPH result of 520 mg/kg yet nondetectable levels of TFH as gasoline or diesel fuel; this may indicate the presence of longer-chained hydrocarbons (e.g., oil/waste oil). The results do not provide information as to whether or not significant TPH concentrations exist below the 5-foot depth. A discussion of the potential for petroleum hydrocarbon contamination below 5-feet and the actual need for an excavation should be discussed at a Project Managers Meeting.	The stain begins about 10 feet northeast of the HWSA. Boring 30H1 is located in approximately the center of the stain, about 15 feet northeast of the HWSA. The stain observed on the surface is small and is approximated by the boring location marker on Figure 15. The sump in the HWSA was visually inspected in May 1993 and no cracks were observed. Although the TPH concentration is less than the 1,000 mg/kg criteria used in the RFA for evaluating diesel and heavier hydrocarbons, the Navy has decided to excavate this stained soil as a BMP. The presence of stained soil could encourage improper storage of drums outside of the HWSA.
14	SWMU/AOC 27 - HWSA Please identify the HWSA (and sump) and extent of the stain in Figure 16 of Appendix B. Are there cracks in the HWSA sump? The PR/VSI Report indicates the storage surface and berm are free of significant cracks.	Figure 16 will be revised to indicate the location of the sump. The spill observed on the surface soil next to the HWSA is small and is approximated by the boring location marker. The sump in the HWSA was visually inspected in May 1993 and no cracks were observed.
15	SWMU/AOC 30 - DSA Why was an angle boring used at this site? The PR/VSI Report describes the inactive DSA as being located within an unpaved area. However, the photograph on page 6-67 of the PR/VSI Report shows an asphalt paved parking lot; please explain. Please identity the DSA in Figure 17 of Appendix B.	An angle boring was drilled at this site because heavy equipment stored in the yard at the time of the sampling visit prevented drilling within the boundaries of the former DSA. The photograph on page 6-67 was selected for inclusion into the PR/VSI report because the photograph taken during the VSI approximates the 1980 DOHS photograph which originally identified the drum storage area. The drum storage area is located just beyond the fence depicted in the photograph. The figure will be revised in order to indicate the approximate boundaries of the DSA.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
16	SWMU/AOC 33 - HWSA (NOTE: the Draft RFA Report recommends excavation of shallow, stained soil at this SWMU/AOC) The PR/VSI Report states that stains observed at this site extended to a nearby unpaved soil area. Please indicate the extent of the stain in Figure 18 of Appendix B. Please describe the collection of the 2-foot sample and the 2-foot duplicate; results indicate varied TPH concentrations of 75 and 1,730 mg/kg, respectively. The TPH results, with the absence of a TFH gasoline fraction and the detection of a relatively insignificant TFH diesel fraction (390 mg/kg), may indicate the presence of longer-chained hydrocarbons (e.g., oil/waste oil).	The stain observed on the surface is small and is approximated by the boring location marker. The duplicate sample was collected in accordance with the RFA Sampling Visit Work Plan. The duplicate sample at the 2-foot depth for TPH analysis was collected in a 6-inch drive sample directly beneath the 6-inch drive sample collected for the original sample at this depth. Thus, the original and duplicate samples were collected at 2 to 2.5 feet and 2.5 to 3 feet, respectively.
17	SWMU/AOC 39 - HWSA Please identify the two HWSAs (and sump[s]) in Figure 19 of Appendix B; designate each HWSA with a numbering or lettering scheme to distinguish the two units. Are there cracks in the HWSA sump(s)? The PR/VSI Report states that several dark stains were observed on the soil in the vicinity of one of the HWSAs. One of the stains, 3-foot in diameter, was observed approximately 10 feet west of one of the HWSAs; it appears from Figure 19 that this area was not investigated. Another dark stain was observed about 20-feet south of one of the HWSAs, measuring approximately 4-feet in diameter. The PR/VSI Report adds that this stained area is void of vegetation and that vegetation directly around the stain appeared stressed. Were borings H1 and H2 located within this dark stain area? Please indicate the extent of the stains in Figure 19.	Figure 19 will be revised to distinguish the two HWSAs at SWMU/AOC 39. The HWSA closest to Building 641 is identified as HWSA 1 and the HWSA closest to 8th Street is identified as HWSA 2. Only HWSA 1 has a sump associated with its construction. The sump was visually inspected in June 1993 and found to be free of cracks. Both borings (HA1 and HA2) were drilled within the stains mentioned in the PR/VSI. HA1 was drilled within the 3-foot diameter stain and HA2 was drilled within the 4-foot diameter stain. The description of the locations of the stains in the PR/VSI is incorrect and will be revised.
18	SWMU/AOC 41 - Vehicle Wash Rack Please indicate the actual boundaries of the vehicle wash rack in Figure 20 of Appendix B. Also, indicate the locations of the 5-inch concrete berm and the 2-inch diameter hole drilled through the southern corner of the berm to allow runoff to flow toward T Street (please also indicate T Street). The PR/VSI Report states that: 1) the lawn, near the northwestern end of the berm, appears badly stressed from runoff that has flowed past the end of the berm, and 2) the portion of lawn near the southern corner of the berm, where the 2-inch drainage hole exists, is badly stressed. Were borings H1 and H2 located within the stressed areas? Please indicate the stressed areas in Figure 20.	The boundaries of the washrack are delineated by the fenceline. The entire concrete pad south of Building 127 is used as a washrack. The 5-inch berm lies adjacent to the fenceline depicted in Figure 20. The 2-inch diameter drainage hole is located at the corner of the fence near boring H2. Figure 20 will be revised to show the berm and drainage hole locations. Boring H1 was drilled within the stressed area of the lawn and boring H2 was drilled within the drainage path of the flow from the drainage hole.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
19	SWMU/AOC 46 - Equipment Storage Yard (Vehicle Maintenance and Parking) (NOTE: the Draft RFA Report recommends additional borings for this SWMU/AOC) Please indicate the extent of the four stain areas in Figure 22 of Appendix B. The 2- and 5-foot depth samples of boring H2 had TPH results of 6,660 and 6,100 mg/kg, respectively, yet non-detectable levels of TFH as gasoline or diesel fuel; this may indicate the presence of longer-chained hydrocarbons (e.g., oil/waste oil).	The borings were positioned such that each was drilled in the approximate center of each stain. The extent of the stains are approximated by the boring location identifiers in Figure 22.
20	SWMU/AOC 48 - UST 178 (Waste Oil) The 10-foot depth sample (top sample) of angle boring A1 with a TPH result of 822 mg/kg indicates possible surficial soil petroleum hydrocarbon contamination. The PR/VSI Report indicates the likelihood of releases. One of the stains apparently is located near the southwestern corner of the concrete housing unit and extends onto the unpaved soil; please indicate the housing unit and the extent of this stain in Figure 23 of Appendix B. A discussion of the potential for surficial soil petroleum hydrocarbon contamination should be scheduled for a Project Managers Meeting.	The housing unit is located above the top of the tank. The stain mentioned in the PR/VSI report near the housing unit is located about in the center of the tank, not at the location of Boring A1. The stain mentioned in the PR/VSI was small (about 1 to 2 feet in diameter) and located near the center of the tank. Because of its small size and its location above a large tank, migration of contaminants would be limited, and sampling was not recommended. The TPH level in the 10-foot sample in an angle boring is below the criteria of 1,000 mg/kg used in the RFA. The Navy does not plan to do further action at this SWMU/AOC.
21	SWMU/AOC 49 - UST 179 (Waste Oil) Please indicate the extent of the stain area due to a minor release (see the PR/VSI Report) in Figure 23 of Appendix B.	The minor release discussed in the PR/VSI is the result of a one-time minor release from a discarded hose. The affected area is extremely small; its extent cannot be shown in the figure.
22	SWMU/AOC 70 - HWSA Please indicate the extent of the stains observed on the unpaved soil/grassy area as described in the PR/VSI Report.	The stains were very small in size. The "most significant" stain is located within the boring location identifier shown in Figure 25.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
23	SWMU/AOC 83 - HWSA In Figure 28 of Appendix B, please indicate the boundaries of the HWSA and the drain (located in the northwestern corner that leads to oil/water separator 298-C). Please indicate the locations of the crack in the berm and the storm drain located about 2-feet from the southern side of the HWSA (see the PR/VSI Report).	The boundaries of the HWSA and the location of the drain are indicated by the shaded area shown in Figure 28. The crack in the berm will not be added to the figure. (The Navy believes that the main objective of the figures is to show the location of the SWMU/AOC and the borings/sampling points. Since it is very difficult to provide detailed SWMU features on a plot plan, the Navy feels that such details can best be found in SWMU descriptions and the PR/VSI photographs).
24	SWMU/AOC 88 - DSA Identify Building 306 in Figure 29 of Appendix B. The PR/VSI Report describes a small DSA located near the northwestern corner of Storage Shed 1601 that is unpaved with paint stains on the ground; please indicate this area in Figure 29. The PR/VSI Report also describes an unpaved western storage yard used for the storage of transformers and electrical insulation oil; please indicate this area in Figure 29. Apparently this area was not investigated because both of the borings at SWMU/AOC 88 are angle borings or is boring A2 located in this area? The 10-foot depth sample (top sample) of angle boring A2 indicates the presence of PCBs (11 μg/kg). If boring A2 is located in the unpaved western storage yard used for the storage of transformers and electrical insulation oil, it may be possible that, considering the subsurface mobility properties of PCBs, higher PCB concentrations exist near the surface. A discussion of the potential for surficial soil PCB contamination should be scheduled for a Project Managers Meeting.	Building 306 is located several hundred feet northwest of the storage yard. It is not feasible to show this building in the figure. Building 306 was mentioned in the text since the yard is used to store equipment from the shops located in this building. The small DSA and the transformer storage area will be shown in Figure 29. Boring 88A2 was drilled through the center of the small DSA. The boring was angled such that the boring extended across the transformer storage area mentioned in the PR/VSI. Thus, the transformer area was investigated by the sampling visit. For the following reasons, the Navy agrees that surface soil should be investigated at this area: o Although at a low concentration, PCBs are present at moderate depth (10 feet) in 88A2. o The boring is located near a transformer storage area where PCBs may have been present. o PCBs are not very mobile in the subsurface. Their presence at depth may indicate surficial contamination .

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
25	SWMUs/AOCs 91 and 92 - USTs 314-A and 314-B, respectively (Waste Oil) For SWMU/AOC 91, Table 5-2 (Amended Sample Locations) states that due to refusal at angle boring 2, the angle boring was replaced with a 25-foot boring drilled approximately 5 feet from the south edge of the tank; however, the 25-foot boring is located at the east edge of the tank in Figure 31 of Appendix B. The Sampling Visit Results in Appendix A indicate that the refusal was at angle boring 1. Please make all necessary corrections. The PR/VSI Report indicates the presence of liquid in both tanks; have the contents been removed from these inactive units?	Table 5-2 will be revised to indicate that refusal was encountered in angle Boring 091A1. Also, the table has been revised to indicate that Boring 091B1 is located approximately 5 feet east of the tank. At the time of the sampling visit (NOV 1992), the liquid in the tanks had not been removed.
26	SWMU/AOC 95 - Engine Test Cell The PR/VSI Report recommends a sampling visit for a possible former HWSA on unpaved soil, apparently near the southeastern corner of Building 324. The three borings in Figure 32 of Appendix B are located near the northeastern corner of Building 324; please explain. Indicate the boundaries of the HWSA in Figure 32.	Building 324 is a long building which extends approximately 150 to 200 feet in a northwesterly direction beyond the boundaries of Figure 32. Thus, the location of the HWSA as described in the PR/VSI report is accurate.
27	SWMU/AOC 99 - DSA The PR/VSI Report states that a large dark stain can be found on the ground near the center of the DSA. Were Borings B1 and B2 located within the large dark stain area? Note that in Figure 33 of Appendix B, the borings appear to be located near the ends of the DSA. Please indicate the location and the extent of the large dark stain in Figure 33.	Boring 099B2 was drilled through the large dark stain. The northwest side of the DSA extends approximately 5 to 10 feet further in the northwest direction than is shown in Figure 33. The figure will be revised to reflect this change.
28	SWMU/AOC 100 - TCE Degreaser Please indicate the location of the TCE degreaser in Figure 33 of Appendix B. Also, indicate the location of the storm drain to which spent solvents were reportedly discharged as recently as 1978 (see the PR/VSI Report).	The location of the storm drain where the spent solvent was disposed was not able to be determined from interviews with Station personnel. The only storm drain observed during the VSI was located between the southwest corner of Building 359 and the railroad tracks. This storm drain is shown in Figure 33. It is also possible that the spent solvent was disposed of into the drain of the washrack adjacent to the southeast corner of the building (i.e., SWMU/AOC 98). The drain for this washrack leads to an oil/water separator (SWMU/AOC 101) and eventually into the storm sewer system.
29	SWMUs/AOCs 101 and 102 - Oil/Water Separator 359-B and UST 359-C (Spent Stoddard Solvent), respectively Please indicate the location of these units in Figure 33 of Appendix B. Please indicate the location of ancillary equipment for the spent stoddard solvent tank, including piping, vent lines, etc.	Figure 33 will be revised to show the location of SWMUs/AOCs 101 and 102. The Navy does not plan to show ancillary equipment such as piping and vent lines on plot plan figures.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
30	SWMU/AOC 110 - Vehicle Wash Rack Was Boring H4 located within the stains observed near the southeastern corner of the berm (see the PR/VSI Report)?	Yes. Boring 110H4 was drilled within one of the large stains near the washrack. Since the time of the VSI, the area southeast of the washrack has been asphalt paved. Figure 35 will be revised to indicate the asphalt pavement.
31	SWMUs/AOCs 112 and 113 - Oil/Water Separator 386-B and UST 386-C (Waste Oil), respectively Why, according to Figure 35 of Appendix B, was the angle boring located approximately 30-feet *from the unit? Please indicate* the location of both the oil/water separator and the UST in Figure 35.	The boring was located at this distance from the OWS system because numerous underground and overhead utilities prevented drilling at a location closer to the unit. The angle boring was substituted for a 25-foot vertical boring for this reason. Both the OWS and UST are situated within the area indicated by the unshaded box located north of the washrack.
32	SWMU/AOC 116 - DSA Indicate the location of this DSA and SWMU/AOC 251 in Figure 26 of Appendix B. The PR/VSI Report states that a trail of water with an oily sheen was observed flowing southwest from the DSA toward a storm drain located between the southwestern corner of Building 388 and Building 760; please indicate the location of the storm drain and Building 760, if feasible, in Figure 26. Also in Figure 26, please indicate the location of stains on the asphalt bordering the DSA.	SWMU/AOC 251, as well as the storm drain, are located at a distance that is beyond the boundaries of Figure 26, and will not be shown in the figure. The PR/VSI reported that staining was observed on the top of the berm; it does not mention stains observed on the asphalt.
33	SWMU/AOC 129 - UST 445-C (Waste Oil) Why was the boring located away from an observed stain on unpaved soil approximately 4-feet in diameter and about 25-feet west of the wall of Building 445 and 12-feet south of the concrete pad surrounding the pump units (see the PR/VSI Report)?	The stain is not believed to be a result of operations associated with SWMU/AOC 129. It appears to be a one-time release which may have originated from a vehicle. The stain will not appear in the final figure.
34	SWMU/AOC 130 - DSA Were the borings located within the several dark soil patches observed near the east side of the metal sheets? Please indicate the dark soil patch areas in Figure 40 of Appendix B.	It was very difficult to collect samples at this location because of numerous rocks encountered during drilling. Originally, the boring locations were situated in the center of the stains. However, when refusal at a boring was encountered, the sampling crews moved the boring 1 to 2 feet. While not being located at the center of stains, the borings were drilled within the confines of the stains. Numerous small stains were present within the DSA. It is not feasible to show these in the figure. The figure will be revised to indicate the DSA boundaries which also delineate the approximate extent of stained soil observed.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
35	SWMU/AOC 131 - *Engine Test Cell* (NOTE: *the Draft RFA Report recommends* additional shallow soil borings for this SWMU/AOC) The PR/VSI Report describes two UST pump units located on a concrete surface on the north side of Building 447 and an aboveground storage tank for JP-5. Indicate the location of the two USTs and aboveground tank in Figure 41 of Appendix B. The PR/VSI Report also adds that several soil areas were darkly stained from releases from the aboveground tank. Were any of the borings located within the stain areas? *Please indicate the extent of the stain areas in Figure 41.* Please indicate the location of the exhaust chimney in Figure 41. The PR/VSI Report indicates that dark stains were also observed on unpaved soil at the base of the chimney walls (on east side of building). Were any of the borings located within these stain areas? Please indicate the extent of the stain areas in Figure 41. The Department does not necessarily concur with the recommendation that this SWMU/AOC be evaluated in a State or local program based on the hypothesis that the site is contaminated with *petroleum hydrocarbons only. For all borings,* both the TPH and TFH results for this SWMU/AOC were relatively insignificant or at non-detectable levels without the presence of gasoline or diesel fuel fractions. Based on PAH contamination (PAHs may pose a potential carcinogenic risk to humans) apparently at shallow depths, this SWMU/AOC should be included into the RI/FS program.	All of the borings drilled at this SWMU/AOC were drilled within stained soil areas. The aboveground tank is used to store water for cooling engines being tested. Figure 41 will be revised to show the location of the stained areas and the aboveground tank. The two USTs are located beneath the northwest corner of the concrete pad shown in Figure 41 of Appendix B. These USTs are product tanks *and are not SWMUs/AOCs within the RFA. These USTs will not be* added to the figure. Figure 41 will be revised to indicate the location of the chimney at Building 446. Hand auger borings 3 and 4 were located on the east side of the building in the stained areas described in the PR/VSI. The extent of the stain is small and is confined to the boundaries of the boring identifier in Figure 41. *Therefore, the extent of the stain will not* be shown in the final figure. SWMU/AOC 131 is not planned to be included in the RI/FS Program. The Navy does not think that the presence of PAHs in one sample only, at 2-foot depth, is sufficient reason to add this SWMU/AOC into the RI/FS Program. The Navy does plan to conduct additional subsurface investigation at this location.
36	SWMU/AOC 132 - Oil/Water Separator In Figure 42 of Appendix B, indicate the locations of the concrete pad (with three manhole covers) and *the oil/water separator; please identify Building 447.* Figure 42 indicates that the oil/water separator is located near an unidentified building or should the building actually be the concrete pad depicted in the figure?	Figure 42 will be revised to show the location of Building 442. The *unidentified building shown in Figure 42* is actually a concrete pad which will be reflected in the revised figure.
37	SWMU/AOC 1138 - DSA In Figure 44 of Appendix B, indicate the location of the DSA (and sump) and identify Building 461. Is the DSA sump free of cracks?	A sump is located in the southwest corner of the storage pad. The sump was visually inspected in May 1993 and no cracks were observed. Figure 44 will be revised to show the location of Building 442. *The building will be labeled as the DSA.*

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
38	SWMU/AOC 145 - UST 529 (Waste Oil) (NOTE: the Draft RFA Report recommends additional boring(s) for this SWMU/AOC) If this UST is still in service, the Department recommends that it be taken out of service as soon as possible and leak tested and/or removed/investigated. Sampling visit results indicate significant petroleum hydrocarbon contamination (up to 27,526 mg/kg at 30-feet in angle boring A1) and BTEX contamination.	The Navy agrees with this comment.
39	SWMU/AOC 146 - DSA This DSA was not recommended for a sampling visit, however, the PR/VSI Report states that this corrosive material DSA is equipped with a drain in the center of the building leading to an unknown destination. The Department recommends that the drain terminus should be identified.	Base utility maps indicate that the drain is connected to the sanitary sewer system.
40	SWMU/AOC 162 - UST 643-A (Waste Oil) In Figure 50 of Appendix B, please indicate the locations of both the UST and oil/water separator 643-B.	The oil/water separator and UST are located adjacent to each other. *Their location is identified in Figure 50 of Appendix B by the unshaded* square between Buildings 696 and 640.
41	SWMU/AOC 164 - Vehicle Wash Rack The PR/VSI Report states that this former wash rack is located west of Building 651, yet Figure 51 of Appendix B indicates that it is located west of Building 652; please correct, if necessary. In Figure 51, please indicate the locations of oil/water separator 651-8 (SWMU/AOC 169) and the two drains.	The PR/VSI will be revised to show that the washrack is located west of Building 652. Also, Figure 51 will be revised to show the locations of the drain and oil/water separator.
42	SWMU/AOC 171 - HWSA Was the boring located within the area of stained soil observed near the northeastern corner of the HWSA (see the PR/VSI Report)? Please indicate the location and the extent of the stain in Figure 52 of Appendix B. The presence of PAHs (e.g., benzo(a)pyrene at 72 µg/kg) at the 10-foot angle boring depth could possibly indicate surficial soil contamination. Surficial vertical samples for organic analyses should be considered in the same lateral area as the 10-foot angle boring sample. A discussion of the potential for surficial soil PAH contamination *should be scheduled for a Project Managers Meeting.* Is the HWSA sump free of cracks?	Since the time of the VSI, the area surrounding the HSWA has been asphalt paved, thus covering the stained area. In order to prevent damage to the newly paved area surrounding the HSWA, this boring was drilled immediately off the asphalt. Thus, the boring was drilled approximately 3 to 4 feet beyond the boundary of the stained area. The boring was positioned such that it angled under the stained area. This allowed samples to be collected from beneath the stained area. *Figure 52 will be revised to show the newly paved area.* The sump in the HWSA was visually inspected in May 1993 and found to be free of cracks.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
42 (cont'd)		Because of the presence of PAHs (relatively immobile compounds) in the 10-foot sample, the Navy plans to revise the report to recommend that shallow soil be investigated at this SWMU/AOC.
43	SWMU/AOC 172 - HWSA Is the HWSA sump free of cracks?	The sump in the HWSA was visually inspected in June 1993 and no cracks were observed.
44	SWMU/AOC 173 - Oil/Water Separator 671 (NOTE: the Draft RFA Report recommends additional boring(s) for this SWMU/AOC). If this oil/water separator is still in service, the Department recommends that it be taken out of service as soon as possible and leak tested and/or removed/investigated. Sampling results indicate significant petroleum hydrocarbon contamination as well as BTEX contamination. Contamination at this site likely extends below the 2-foot sample depth (maximum detected TPH contamination was 11,008 mg/kg at the 25-foot depth). In Figure 54 of Appendix B, please indicate the drain(s) for this unit and ancillary piping.	The Navy agrees that measures should be taken to minimize future releases from this OWS System. The two washracks located adjacent to Building 672 both drain to SWMU/AOC 173. The washracks are not shown in Figure 52 because they are located at a distance beyond the boundaries of the figure. Building 672 and the two washracks will be shown in Figure 53.
45	SWMUs/AOCs 175 and 176 - Oil/Water Separator 672-A and UST 672-B (Waste Oil), respectively (NOTE: the Draft RFA Report recommends additional boring(s) for these SWMUs/AOCs). Since these units are apparently inactive (based on the PR/VSI Report) and since MCAS El Toro is tentatively scheduled for closure, the Department recommends, if feasible, that the units be removed and soils around and beneath the units be further investigated. Sampling results indicate significant petroleum hydrocarbon and BTEX contamination. Contamination at this site likely extends below the 25-foot sample depth. In Figure 53 of Appendix B, please indicate the drain(s) for these units and ancillary piping.	Additional borings are recommended for these SWMUs/AOCs. Since it is known that contamination exists to a depth of 25 feet, soil at depths greater than 25 feet is of more immediate concern than soil directly below the units. It should be noted that the soil below the units will be evaluated when the tanks are removed.
46	SWMU/AOC 181 - Landfarming Area In Figure 56 of Appendix B, indicate the boundaries of this SWMU/AOC. Were borings located along the perimeter only?	Figure 56 will be revised to show the boundaries of the landfarming area. All the borings for this SWMU/AOC were drilled within the boundaries of the landfarming area.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
47	SWMU/AOC 187 - UST 674 The SWMU/AOC Reference List in Appendix B and the Sampling Visit Results in Appendix A list Figure 4 for this SWMU/AOC; the correct figure is Figure 2. In Figure 2 of Appendix B, indicate the locations of both the UST and oil/water separator 676.	The SWMU/AOC Reference List in Appendix B and the sampling visit results in Appendix A will be corrected. The oil/water separator and UST are located within the shaded square shown in Figure 2.
48	SWMU/AOC 193 - Oil/Water Separator 716-B In Figure 58 of Appendix B, indicate the locations of both the oil/water separator and UST 716-A.	The location of the oil/water separator and UST are depicted by the unshaded rectangle shown in Figure 58 of Appendix B.
49	SWMUs/AOCs 196 and 197 - Oil/Water Separator 758-A and UST 758-B, respectively In Figure 60 of Appendix B, indicate the locations of both the oil/water separator and the UST.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 60 by the unshaded rectangle.
50	SWMUs/AOCs 199 and 200 - Oil/Water Separator 759-A and UST 759-B, respectively In Figure 61 of Appendix B, indicate the locations of both the oil/water separator and the UST.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 61 by the unshaded rectangle.
51	SWMUs/AOCs 202 and 203 - UST 760-A and Oil/Water Separator 760-B In Figure 62 of Appendix B, indicate the locations of both the UST and the oil/water separator.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 62 by the unshaded rectangle.
52	SWMU/AOC 204 - Vehicle Wash Rack In Figure 63 of Appendix B, indicate the unpaved soil areas on the north and west sides of the washrack. The PR/VSI Report states that a small patch of asphalt that is darkly stained is located between the washrack and Building 761. Were any of the borings located in this stained asphalt area?	Borehole 204H4 was drilled in an area of dark staining within the concrete surface of the washrack. Figure 63 will be revised to show the approximate boundaries of the stain. The unpaved soil areas will also be shown in the revised figure. No borings were located on the stained asphalt area, which was free of cracks.
53	SWMUs/AOCs 205 and 206 - Oil/Water Separator 761-A and UST 761-B, respectively In Figure 63 of Appendix B, indicate the locations of both the oil/water separator and the UST. The PR/VSI indicates that the UST is located approximately 20-feet south of the oil/water separator. The UST (not tank tested according to the PR/VSI Report) was recommended for a sampling visit, however, due to its distance from the oil/water separator and the location of boring B1 near the northwest corner of the oil/water separator, the UST was apparently not characterized by the sampling strategy.	See detailed response to DTSC General Comment 1(b).

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
54	SWMUs/AOCs 208 and 209 - Oil/Water Separator 762-A and UST 762-B, respectively In Figure 36 of Appendix B, indicate the locations of both the oil/water separator and the UST.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 36 by the unshaded rectangle.
55	SWMUs/AOCs 211 and 212 - Oil/Water Separator 763-A and UST, respectively In Figure 64 of Appendix B, indicate the locations of both the oil/water separator and the UST.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 64 by the unshaded rectangle.
56	SWMUs/AOCs 214 and 215 - UST 764-A and Oil/Water Separator 764-B, respectively In Figure 65 of Appendix B, indicate the locations of both the UST and the oil/water separator.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 65 by the unshaded rectangle.
57	SWMUs/AOCs 220 and 221 - Oil/Water Separator 766-A and UST 766-B, respectively In Figure 16 of Appendix B, indicate the locations of both the oil/water separator and the UST.	The oil/water separator and UST are located immediately adjacent to each other. Their location is depicted in Figure 16 by the unshaded rectangle.
58	SWMU/AOC 231 - UST 899-E (Waste Oil) Additional evaluation is recommended for this UST which failed a tank test conducted in 1990.	Samples collected during the RFA sampling visit at this UST do not indicate contamination at this UST. Because the Station is scheduled for closure, it is likely that this UST will be removed in the near future. The soil below the tank and associated piping can be evaluated at that time.
59	SWMU/AOC 243 - Washrack Additional evaluation is recommended for the two 18-inch diameter pipes protruding from the concrete surface of the washrack. The PR/VSI Report indicates that a liquid surface was visually observed approximately 10-feet down the pipes. Please indicate the location of the pipes in Figure 72 of Appendix B.	The liquid in the pipes is apparently water. The bottom of the pipes appears to be concrete or metal (i.e., it is not open to the ground below). See the Navy's response to DTSC General Comment 1s.
60	SWMU 253 - Vehicle Washrack In Figure 75 of Appendix B, indicate the boundaries of the concrete washrack.	The wash area is located at the base of the concrete loading ramp depicted by the darkly shaded area of Figure 75. Asphalt surrounds the area to the north and west of the loading ramp, while the area to the east is unpaved. Figure 75 will be revised to delineate the washrack.
61	SWMU/AOC 256 - HWSA In Figure 76 of Appendix B, indicate the location and extent of the darkened soil observed west of this former HWSA (see the PR/VSI Report).	Figure 76 will be revised to show the approximate location and extent of the darkened soil at this SWMU/AOC.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
62	SWMU/AOC 257 - Wash Water Runoff Site (Fuel Station 575) In Figure 77 of Appendix B, indicate the locations of the drainage path, stain areas (in the unpaved area), storm drain, drain outlet, and the unlined ditch that runs the length of the unpaved area.	The general drainage path is shown in Figure 77. The three borings drilled in the runoff area were positioned within the general drainage path between the end of the drainage channel and the storm drain. The figure will be revised to identify the location of the storm drain.
63	SWMU/AOC 258 - Wash Water Runoff Site (Fuel Station 577) In Figure 78 of Appendix B, indicate the locations of the drainage path and storm drain.	The general drainage path is shown in Figure 78. The three borings drilled in the runoff area were positioned within the general drainage path between the end of the drainage channel and the storm drain. The figure will be revised to identify the location of the storm drain.
64	SWMU/AOC 261 - Waste Oil Collection Drum In Figure 79 of Appendix B, indicate the location of the collection drum. Also in the figure, indicate that the collection drum is (was) located on asphalt pavement. An overfill prevention device should be considered for this unit.	Figure 79 will be revised to show the location of the collection drum. Since the Sampling Visit, the drum has been placed in an overflow containment drum.
65	SWMU/AOC 262 - *Fuel Storage Area* *In Figure 79 of Appendix B, indicate the location of the fuel storage locker and the extent of the stain areas (according to the PR/VSI Report, the most significant stains are located on the east and west ends of the locker). Also in the figure, indicate that the locker is (was) located on asphalt pavement.*	Figure 79 will be revised to show these features.
66	SWMU/AOC 264 - Equipment Storage Area Were any of the borings located within the significant stain in the central portion of the storage yard near the jeep storage area (see the PR/VSI Report)? If possible, indicate the extent of the stain areas in *Figures 80 and 81 of Appendix B.*	Each of the borings for this SWMU/AOC was drilled within a stained area. Figures 80 and 81 will be revised to show the approximate *boundaries of the stains.*
67	SWMU/AOC 267 - Drop Tank Fuel Storage Area This SWMU/AOC was recommended for a sampling visit in the PR/VSI Report, but apparently was not sampled for the RFA investigation; please explain.	The Navy reconsidered the recommendation for a sampling visit made in the Draft PR/VSI Report and changed to a recommendation for not sampling this SWMU/AOC in the Sampling Visit Work Plan. The tanks are stored on the tarmac (approximately 18 inches thick, with no cracks) and a release from this area would not be able to impact soil. Any release would flow to the storm drain and eventually the Station washes. The recommendation in the PR/VSI will be revised.

Comments By: Department of Toxic Substances Control (DTSC)

Response By: U.S. Navy

Comment No.	Comment	Response
68	SWMU/AOC 269 - Fuel Storage Locker or UST? The PR/VSI Report indicates that this SWMU/AOC consists of 3 USTs containing waste petroleum (possibly oil and/or JP-5), yet it is described as both a fuel storage locker and a 100-gallon UST in the RFA Report; please explain.	Based on an incorrect map in the EG&G UST report for the Station, USTs 314 A & B (SWMUs/AOCs 91 and 92) were incorrectly identified as being on the south side of Building 314. During the VSI, USTs were found on the east side of the Building and were added to the RFA as SWMU/AOC 269 (unknown USTs). Additional research indicated that USTs 314 A & B were really located on the east side of Building 314 where the Jacobs Team identified SWMU/AOC 269. At the "old" location of SWMU/AOC 91 and 92, a 100-gallon UST and storage locker were indicated by the research. Therefore, the locations of the SWMUs were switched so that SWMUs/AOCs 91 and 92 would remain as USTs 314 A & B. SWMU 269 then became the 100-gallon UST and fuel storage locker. In the sampling visits, USTs 314 A & B were each investigated with two angle borings. The 100-gallon UST and fuel storage locker area were investigated with a 25-foot boring. Table 5-2 in the Draft RFA Report mentions this switch. The PR/VSI Report will be revised to clarify this change.

RESPONSE TO COMMENTS
DRAFT RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)
FACILITY ASSESSMENT REPORT
MARINE CORPS AIR STATION (MCAS) El TORO
EL TORO, CALIFORNIA

Comments By: Regional Water Quality Control Board

Response By: U.S. Navy

Comment No.	Comment	Response
	GENERAL COMMENTS	
RWQCB Comment, paragraph 1	We have completed our review of the Draft RCRA Facility Assessment Report dated March 18, 1993, which we received March 18, 1993. Overall, we believe that this report representing the screening of numerous sites uses a reasonable and competent methodology considering the sheer number of sites and investigative cost.	No response necessary.
RWQCB Comment, paragraph 2	Basically we agree with the majority of the findings and recommendations contained within the report. However, we have some reservations and concerns which are discussed below: For underground storage tanks (USTs), integrity testing has not proven to be a universal indicator that a UST (or oil-water separator) has not leaked. It does not always test associated piping, nor can [it] detect spills resulting from overfilling and poor operation practices. Often these sorts of leaks and spills reside or gravitate to the ground disturbed or replaced during excavation during tank emplacement and then leak in a discrete flow pathway from the fill. Because of this phenomenon, one or a few shallow borings (even up to 45 feet) can have a very low probability of intersecting discrete contaminant flow pathways (usually under the UST). Additionally, if you do get one sample indicating contamination within a boring, it may represent crosscutting a significant flow pathway. We do recognize the objective of your investigation is to eliminate non-sites. However, if structures are removed or repaired or construction/demolition activities occur, they are likely to uncover sites which have significant contamination. Therefore, we accept your recommendations for no further investigation realizing that status could change. Also, because of the complex nature of a military air station containing such a vast potential for sites of concern, we will be very sensitive to any detectable quantities of contaminants in groundwater which could indicate soil contamination from sites unrecognizable at the surface.	MCAS El Toro is now scheduled for base closure. As part of closure, it is likely that USTs and oil/water separators will be removed. The Navy agrees that tank removals and other activities associated with the closure of the Station may result in the identification of additional areas of contamination beyond those already known. Tank removals will be performed according to current requirements under the direction of the appropriate regulatory agency. Accordingly, site characterization and/or remediation may be required.
RWQCB Comment, paragraph 3	We do not agree with aspects of the model for the evaluation selection criteria used for assessing potential groundwater impact. However, only six out of 304 Solid Waste Management Units (SWMUs)/Areas of Concern (AOCs) investigated are delineated by criteria in a manner that we might question. Since these sites are believed to be surface or near surface contamination and considering the depth to groundwater with a groundwater monitoring system in place, our disagreement with selection criteria assumptions does not change the outcome that these six sites are probably not significant threats to groundwater quality. However, we are uncomfortable agreeing with recommendations for no further action for these sites (further action is recommended for some of the six sites).	The six SWMUs/AOCs were not identified in the RWQCB's comments. At the May 26 Managers Meeting in Riverside, the RWQCB said that their interest in "six SWMUs/AOCs" would be satisfied if the Navy dealt with the specific comments and SWMUs of concern described by DTSC. The Navy will address DTSC's comments and the SWMUs/AOCs where DTSC suggested additional clarification and/or further action.

Comments By: Regional Water Quality Control Board

Response By: U.S. Navy

Comment No.	Comment	Response
RWQCB Comment, paragraph 4 6.2.3 Leaching Pathway Evaluation Model	We do not consider the modified model as consistent with our mandate to protect water quality. The Model as presented has some basic assumptions, for which we do not agree and consider contrary to our basic approach to management of water quality. We can not approve of the application of the model. Although we disagree with some of the basic assumptions of this model, we are not opposed to appropriate screening criteria modeling for site identification.	The ETM is a relatively simple vadose zone model that has been used by the Navy to provide a screening mechanism for evaluating potential groundwater impact of soil concentrations observed in RFA samples at El Toro. Because of the large number of sites in the RFA and a lack of detailed vadose zone data at RFA sites (some of which did not sample deeper than 5 feet), use of a more complex model does not seem warranted. While the Navy understands the reluctance of agency acceptance of a simplified model for all of its sites and programs, the Navy believes that the ETM is a reasonable tool for the El Toro RFA and that reasonable recommendations for further action have resulted from the evaluation of the RFA Sampling Visit data. It should also be noted that ETM values represent only one of the screening criteria used in the RFA. Other screening criteria are PRGs, background values for metals, and CA LUFT for petroleum hydrocarbons. Some comparisons of the ETM values to a more sophisticated vadose zone model (VLEACH) were done for a few compounds. The comparisons indicate a reasonably good correlation which the Navy feels supports the use of the simpler ETM in the RFA evaluations. An addendum will be placed at the front of the Final RFA Report describing this evaluation.