MARINE CORPS AIR STATION EL TORO
EL TORO, CALIFORNIA
INSTALLATION RESTORATION PROGRAM
FINAL RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) FACILITY ASSESSMENT REPORT

VOLUME I

16 July 1993

PREPARED BY:
Southwest Division, Naval Facilities
Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

THROUGH:
CONTRACT #N68711-89-D-9296
CTO #193
DOCUMENT CONTROL NO:
CLE-C01-01F193-S2-0001

WITH:
Jacobs Engineering Group Inc.
3655 Nobel Drive, Suite 200
San Diego, California 92122

In association with:
International Technology Corporation
CH2M HILL

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M. W. Arends 7/16/93

Mike Arends, P.E. Date
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15 July 1993

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Jacobs Engineering Group Inc.

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MCAS EL TORO
SSIC # 5090.3

FINAL RESOURCE CONSERVATION AND RECOVERY ACT (RCRA), FACILITY ASSESSMENT REPORT (VOLUME II) DATED JULY 16, 1993 ENTERED IN DATABASE AND FILED AS ADMINISTRATIVE RECORD NO. M60050.000088

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 <u>140</u> 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.

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."

RESPONSE TO COMMENTS
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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."

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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.

<table>
<tr><th>Comment No.</th><th>Comment</th><th>Response</th></tr>
<tr><td>B1c</td><td>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.</td><td>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:

<table>
<tr><th>Unit No.</th><th>Bldg No.</th><th>SWMU/AOC</th></tr>
<tr><td>Washracks</td><td>655</td><td>198</td></tr>
<tr><td>298</td><td>83</td><td></td></tr>
<tr><td>295/296/297</td><td>74</td><td></td></tr>
<tr><td>463</td><td>141</td><td></td></tr>
<tr><td>294</td><td>25</td><td></td></tr>
<tr><td>10</td><td>219</td><td></td></tr>
<tr><td>Oil/Water Separators</td><td>655</td><td>199</td></tr>
<tr><td>295/296/297</td><td>76</td><td></td></tr>
<tr><td>672</td><td>175</td><td></td></tr>
<tr><td>294</td><td>Could not be found. Station personnel said it does not exist.</td><td></td></tr>
<tr><td>10</td><td>220</td><td></td></tr>
<tr><td>Surge Tank</td><td>672</td><td>174</td></tr>
<tr><td>Catch Basin</td><td>605</td><td>151</td></tr>
</table></td></tr>
</table>

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).

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

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.

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
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^{O}F; JP-5 has a higher boiling range of 355 to 490^{O}F. These jet fuels overlap typical boiling ranges of gasoline (100 to 400^{O}F) and diesel (310 to 600+^{O}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.

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.

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
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.

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
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.

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.

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
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.

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ACRONYMS

AOC	area of concern
ASTM	American Society of Testing Materials
B&C	Brown & Caldwell Engineers
bgs	below ground surface
BMP	Best Management Practice
CAO	Cleanup and Abatement Order
CARB	California Air Resources Board
CDC	California Department of Conservation, Division of Oil and Gas
C_s	concentration of contaminant in soils
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (commonly known as Superfund)
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-term Environmental Action Navy
CLP	Contract Laboratory Program
COC	Chemicals of Concern
CRDL	Contract Required Detection Limit
CRWQCB	California Regional Water Quality Control Board, Santa Ana Region
DOD	Department of Defense
DPDO	Defense Property Disposal Office
DRMO	Defense Reutilization and Marketing Office
DTSC	California Department of Toxic Substances Control
EO	Environmental Office

EPA	U.S. Environmental Protection Agency
ETM	El Toro Model
FFA	Federal Facilities Agreement
FFCA	Federal Facilities Compliance Agreement
FMD	Facilities Management Department
GAC	granular activated carbon
gpm	gallons per minute
GPR	ground penetrating radar
HPLC	High Performance Liquid Chromatography
HSP	Health and Safety Plan
HSWA	Hazardous and Solid Waste Amendments
HWCF	Hazardous Waste Collection Facility
HWSA	Hazardous Waste Storage Area
IAS	Initial Assessment Study
IRP	Installation Restoration Program
IRWD	Irvine Ranch Water District
JEG	Jacobs Engineering Group Inc.
JMM	James M. Montgomery Engineers, Inc.
LUFT	Leaking Underground Fuel Tank
MCAS	Marine Corps Air Station
MeCl	methylene chloride
mg/kg	milligrams per kilogram
MS/MSD	matrix spike/matrix spike duplicate
msl	mean sea level

NACIP	Navy Assessment and Control of Installation Pollutants
NAVFACENGCOM	Naval Facilities Engineering Command
NDDB	Natural Diversity Database
NEESA	Naval Energy and Environmental Support Activity
NPL	National Priorities List
OCWD	Orange County Water District
OU	Operable Unit
OVA	Organic Vapor Analyzer
PCB	polychlorinated biphenyl
PCE	perchloroethylene
PID	Photoionization Detector
ppb	parts per billion
PPE	Personal Protective Equipment
PR	Preliminary Review
PRG	Preliminary Remedial Goals
PSI	Perimeter Study Investigation
QA	Quality Assurance
QC	Quality Control
RAS	Routine Analytical Services
RCRA	Resource Conservation and Recovery Act of 1976
RFA	RCRA Facility Assessment
RFI	RCRA Facility Investigation
RI/FS	Remedial Investigation/Feasibility Study
SAS	Special Analytical Services

SCAQMD	South Coast Air Quality Management District
SIPOA	Site Inspection Plan of Action
SWDIV	Naval Facilities Engineering Command, Southwest Division
SPCC	Spill Prevention, Control, and Countermeasure
SV	Sampling Visit
SVOC	Semivolatile Organic Compound
SVWP	Sampling Visit Work Plan
SWAT	Solid Waste Assessment Test
SWMU	Solid Waste Management Unit
TAFDS	Tactical Airfield Fuel Dispensing System
TAL	Target Analyte List
TCA	trichloroethane
TCE	trichloroethylene
TCL	Target Compound List
TDS	Total Dissolved Solids
TFH	Total Fuel Hydrocarbons
TIC	Tentatively Identified Compound
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
TSDF	Treatment, Storage, and Disposal Facility
ug/kg	micrograms per kilogram
ug/l	micrograms per liter
USC	United States Code
USMC	United States Marine Corps

UST	Underground Storage Tank
VOC	Volatile Organic Compound
VSI	Visual Site Inspection
WAA	Waste Accumulation Area
WESTDIV	Naval Facilities Engineering Command, Western Division

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ADDENDUM
RESOURCE CONSERVATION AND RECOVERY ACT
FACILITY ASSESSMENT

MCAS EL TORO
EL TORO, CALIFORNIA

SUMMARY

The El Toro Model (ETM) is a simplified vadose zone model used in the El Toro RFA to evaluate the potential for soil contamination to impact groundwater. The ETM provides soil concentration values for various compounds that would impact groundwater at that compound's Maximum Contaminant Level (MCL). These soil concentration values were used as a screening tool for assessing whether a contaminant at a Solid Waste Management Unit/Area of Concern (SWMU/AOC) would impact groundwater. The ETM was used, along with other screening criteria (e.g., EPA's preliminary remedial goals [PRGs] and California Leaking Underground Fuel Tank [LUFT]) Manual to evaluate SWMUs/AOCs for possible further action.

A comparison of ETM values for selected Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), and pesticides with values derived from a more sophisticated, site-specific vadose zone model (VLEACH) was performed. The comparison indicates that the ETM values are reasonably close to values obtained from VLEACH, or in most cases, yields lower (or more conservative) values than VLEACH.

Therefore, the Final RFA Report continues to use ETM values as one of the screening criteria for evaluating SWMUs/AOCs. A description of the ETM is presented in Appendix E of the Final RFA Report.

INTRODUCTION

The Draft RFA Report was submitted to the agencies on 18 March 1993. Although the recommendations for individual SWMUs/AOCs in this report were generally accepted by the agencies, there was a concern with the use of the simplified ETM as a screening tool for evaluating sites. Evaluation of a different vadose zone model for use in the RFA was recommended.

This memorandum presents the results of an evaluation of VLEACH, a vadose zone model with more site-specific capabilities than the ETM.

DESCRIPTION OF VLEACH

VLEACH is a one-dimensional finite difference model designed to simulate the movement of VOCs through the vadose zone to the groundwater and to aid in the selection of soil cleanup levels for VOCs. It models the movement of VOCs through the vadose zone in three phases: liquid-phase advection, vapor-phase diffusion, and adsorption to the soil organic carbon fraction. VLEACH estimates mass transport through the vadose zone by two transport mechanisms: the diffusion of vapor phase contamination and the liquid transport of vadose zone water downward to the water table. The model can simulate leaching in a number of distinct "polygons" during each run. These polygons may differ in soil properties, recharge rate, depth to groundwater, or initial conditions. Each polygon is treated separately, and at the end of the run, an overall area-weighted groundwater impact is presented.

Input data for VLEACH include:

o **Chemical parameters.** Chemical parameters are used to describe the behavior of the contaminant in question. The parameters include the organic carbon distribution coefficient, Henry's constant, the aqueous solubility, and the free air diffusion coefficient.

o **Soil properties.** Soil properties are used to describe the physical characteristics of the vadose zone soil. The soil properties may differ in each polygon of the VLEACH model. Soil properties include dry bulk density, total porosity, volumetric water content, and organic carbon fraction.

o **Site properties.** Site properties include recharge rate, depth to groundwater, and area of the polygon in question.

o **Model parameters.** Modeling parameters affect the way the calculations are performed. These parameters include the time step length, cell dimensions, and output intervals.

LIMITATIONS IN APPLYING VLEACH TO THE EL TORO RFA

Some limitations in applying VLEACH to the El Toro RFA include the following:

o RFA sites have limited vadose zone data. Since no RFA borings went down to groundwater, which is relatively deep (i.e., about 90 to 200+ feet below ground surface [bgs] across the Station), limited data are available for the vadose zone at SWMUs/AOCs. Many SWMUs/AOCs included only hand auger borings that went no deeper than 5 feet.

o VLEACH was developed to simulate the movement of VOCs in the vadose zone. Since the model's mechanisms apply to organics, it is adaptable for modeling of SVOCs and pesticides/PCBs. For inorganics such as metals, VLEACH may not provide advantages over a simpler vadose zone model.

o Because VLEACH requires site-specific, compound-specific data, a very large number of VLEACH runs would be required to evaluate the 140 SWMUs/AOCs sampled in the RFA. For example, a set of VLEACH runs (typically three) would need to be performed for <u>each</u> compound at <u>each</u> site to obtain the soil concentration yielding that compound's MCL in groundwater for that site.

COMPARISON OF VLEACH TO ETM VALUES

To provide a basis for comparison of VLEACH model values to ETM values, a number of VLEACH runs have been made for selected compounds, with an attempt to include compounds in a given chemical category (e.g., VOCs, SVOCs, or pesticides) with a relatively high and relatively low solubility in water. Eight VOCs (benzene, toluene, carbon tetrachloride, chloroform, methylene chloride, 1,1,1-PCA, PCE, and TCA), two SVOCs (naphthalene and phenol), and three pesticides (4,4'-DDD, dieldrin, and methoxychlor) were evaluated.

For simplification of the VLEACH runs, site-specific information was input for a single, hypothetical site with parameters reasonably representative of a typical SWMU/AOC. The vadose zone for the VLEACH runs was assumed to be 90 feet thick, corresponding to groundwater depth of 90 feet bgs, approximately the shallowest groundwater at the Station and a conservative depth to use in VLEACH. Initial conditions assumed for the vadose zone were a constant contaminant concentration in the soil from 0 to 10 feet bgs, and no contamination from 11 to 90 feet bgs. Other parameters used in the runs to approximate a typical RFA site were the following:

Dry bulk density	1.5 g/ml	RI/FS data/estimate
Total porosity, vadose zone	40%	RI/FS data/estimate
Volumetric water content	0.1	RI/FS data/estimate
Fractional organic carbon	0.001	Value suggested by EPA
Groundwater recharge rate	0.1 ft/yr	Estimated for El Toro
Area of site	64 ft^2	8 ft x 8 ft (groundwater mixing cell uses area = 64 ft^2)

Table 1 presents a potential range for the parameters of water content, fractional organic content, and recharge rate that could be present in the vadose zone. Some VLEACH runs were conducted to evaluate the sensitivity of the model to these parameters, and to show where the selected values presented above fall within the range. The selected values are generally conservative. The information from the sensitivity study is presented in Table 1.

Since VLEACH results provide an overall area-weighted groundwater impact in grams, a groundwater mixing cell must be assumed to convert the mass of contaminant into a concentration. A 10-foot depth (corresponding to a conservatively short 10-foot well screen) was assumed for the cell, and a porosity of 40 percent was assumed for the saturated zone. In addition, the cross-sectional area of the groundwater mixing cell has been assumed equal to the area of the corresponding site.

Table 2 presents the maximum allowable soil concentrations values from the VLEACH runs for the 13 compounds. Table 3 presents a comparison of the VLEACH values for these compounds to the values determined for each compound using the simpler, less site-specific ETM.

VLEACH predicts higher values than the ETM for 11 of the 13 compounds. The two compounds below ETM values (PCE and toluene) differ from ETM values by about 20 and 40 percent, respectively. The VLEACH values are reasonably close to ETM values for VOCs and tend to differ most for SVOCs and pesticides. The high values for pesticides indicate that these compounds are not very mobile in the vadose zone.

CONCLUSIONS

The Navy plans to continue to use the ETM values as a screening criteria in the El Toro RFA for evaluating potential impacts to groundwater for the following reasons:

- In an evaluation of selected compounds, ETM values are reasonably comparable to VLEACH values, or in most cases, are lower (or more conservative) than VLEACH values.

- The RFA has numerous sites (140) with various compounds and limited vadose zone data. For this project, the use of a complex model requiring site-specific data and numerous runs does not seem warranted.

- The ETM is one of various screening criteria used for evaluation of SWMUs/AOCs for further action. Other criteria include EPA's PRGs and California LUFT Manual values. The Navy believes that reasonable recommendations for further action have been made for SWMUs/AOCs based on multiple screening criteria and professional judgment. Variations in ETM values would not result in changes to the recommendations presented by the Navy in the RFA Report.

Table 1
Sensitivity Analyses for Vadose Zone Parameters
VLEACH Vadose Zone Model

Parameter	Value	Relative Impact of Contaminant (Benzene) on Groundwater (1)
Volumetric Water Content		
High Value	0.25	1
Low Value	0.05	36
Selected Value	0.10	30
Fractional Organic Content		
High Value	0.05	1
Low Value	0.0001	199
Selected Value	0.001	106
Groundwater Recharge Rate (ft/yr)		
High Value	0.20	12
Low Value	0.02	1
Selected Value	0.10	5

Note:
(1) Benzene (a common VOC) was selected as the contaminant for the VLEACH sensitivity analyses. The relative impact value corresponds to the relative mass of contaminant reaching groundwater for a given vadose zone parameter.

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Table 2
Maximum Allowable Concentrations in Soil
VLEACH Vadose Zone Model

Chemical	Year of Impact	Maximum Concentration in Soil (ug/kg)	Maximum Concentration in Groundwater (ug/l)	MCL (ug/l)
VOCs				
1,1,1-PCA	1	87,000	200	200
Benzene	18	560	0.999	1
Carbon Tetrachloride	10	680	0.500	0.5
Chloroform	23	37,400	100	100
Methylene Chloride	25	1,190	4.96	5
PCE	14	12,100	4.93	5
TCE	21	4,000	4.99	5
Toluene	22	139,000	100	100
SVOCs				
Naphthalene	40	2,300,000	19.9	20
Phenol	40	1,000,000,000	<<5	5
PESTICIDES				
4,4'-DDD	40	1,000,000,000	<<1	1
Dieldrin	40	1,000,000,000	<<0.02	0.02
Methoxychlor	40	1,000,000,000	<<40	40

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Table 3
VLEACH Values vs. ETM Values

Chemical	VLEACH (ug/kg)	ETM (ug/kg)
VOCs		
1,1,1-PCA	87,000	11,670
Benzene	560	50.8
Carbon Tetrachloride	680	86.1
Chloroform	37,400	3,680
Methylene Chloride	1,190	9.4
PCE	12,100	1,500
TCE	4,000	380
Toluene	139,000	193,280
SVOCs		
Naphthalene	2,300,000	18,500
Phenol	1,000,000,000	56.9
PESTICIDES		
4,4'-DDD	1,000,000,000	21,800
Dieldrin	1,000,000,000	91.1
Methoxychlor	1,000,000,000	43,140

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EXECUTIVE SUMMARY

The United States Navy has conducted a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) for the Marine Corps Air Station (MCAS) El Toro (or Station). A Preliminary Review (PR), a Visual Site Inspection (VSI), and a Sampling Visit (SV) for the RFA have been completed.

As part of a Federal Facilities Agreement (FFA) for MCAS El Toro, the Draft RFA Report was submitted to the agencies on 18 March 1993. To accommodate this deadline, a fast-track schedule was implemented by the Navy to complete the field work and prepare the draft report. At the time of submittal, data validation results were not available for inclusion into the draft report. Agency comments on the draft report were received by the Navy by 18 May 1993 and incorporated, as appropriate, into the final report.

The Final RFA Report is a stand-alone document following the format given in U.S. Environmental Protection Agency's (EPA) RFA Guidance. It incorporates the detailed information from the PR and PR/VSI Reports, as well as the results of the data validation effort and revisions required by agency comments on the draft version.

Three hundred seven (307) SWMUs/AOCs were identified in the RFA at MCAS El Toro. Of these, one hundred forty (140) SWMUs/AOCs were sampled during the SV to determine if a release has occurred. One of the objectives of the RFA at MCAS El Toro was to identify SWMUs/AOCs for possible inclusion into a fourth operable unit (OU-4) in the Remedial Investigation/Feasibility Study (RI/FS) at the Station which is investigating groundwater contaminated with chlorinated volatile organic compounds (VOCs). When evaluating SWMUs/AOCs sampled in the SV for further action, SWMUs/AOCs with petroleum hydrocarbon contamination only are not considered for inclusion into a Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) program (i.e., the RI/FS at the Station).

Based on an evaluation of the SV results, twenty-five (25) SWMUs/AOCs are recommended for further action. (Further action includes additional subsurface investigation or other activities such as inspections of underground storage tanks, repair of cracks in concrete-paved areas, and excavation of contaminated soil.) Of these 25 SWMUs/AOCs, two SWMUs/AOCs are recommended for further action under the RI/FS Program being conducted at the Station:

- SWMU/AOC 194 - Former Incinerator Site

  This SWMU/AOC had PCE concentrations exceeding EPA's Preliminary Remedial Goals (PRGs). The Navy plans to include this SWMU/AOC into OU-2 by expansion of the boundaries of RI/FS Site 3 (Original Landfill).

- SWMU/AOC 300 - Spill Area

  This SWMU/AOC is recommended for further action based on an unknown extent of petroleum contamination. Because the expansion of Site 3 boundaries to include SWMU/AOC 194 will also encompass this SWMU/AOC, SWMU/AOC 300 will also be included in the RI/FS Program.

These SWMUs/AOCs are recommended for inclusion into OU-2. No SWMUs/AOCs are recommended for OU-4.

Other than SWMU/AOC 194, the RFA encountered very few samples with chlorinated VOCs and, in the few cases where chlorinated VOCs were identified, the concentrations were low (i.e., near contract required detection limits). Contamination, when present at a SWMU/AOC, has primarily consisted of petroleum hydrocarbons.

SWMU/AOC 90 is the former sewage treatment plant at the Station. Although it is not recommended for further action in this report, the RI/FS Program is considering the possibility of including it into RI/FS Site 12 (Sludge Drying Beds) because of its relationship to that site (i.e., the sludge came from the sewage treatment plant). At the time of submittal of this report, a decision had not yet been made.

Five basic types of further action are recommended for SWMUs/AOCs in the RFA:

1. **Include SWMU/AOC into a CERCLA program.** Two (2) SWMUs/AOCs are recommended for further action in a CERCLA program: SWMU/AOC 194 and SWMU/AOC 300.

2. **Evaluate SWMU/AOC in a State or local program with additional borings.** SWMUs/AOCs with petroleum hydrocarbon contamination only and unknown extent of contamination are recommended for further action (i.e., additional soil sampling) in a State or local program. Seven (7) SWMUs/AOCs fall into this category of further action: SWMU/AOC Numbers 46, 131, 145, 173, 175, 176, and

280. SWMUs/AOCs with potential shallow contamination (i.e., SWMUs/AOCs with an immobile contaminant such as PCBs or SVOCs present in a 10-foot sample) are recommended for further action in a State or local program. Three (3) SWMUs/AOCs fall into this category: SWMU/AOC Numbers 39, 88, and 171.

3. **Repair cracks in paved area and leave soil in place.** Seven (7) SWMUs/AOCs are recommended for further action in a Navy program to repair cracked concrete to prevent future migration of moderate petroleum hydrocarbons as a Best Management Practice (BMP) for the Station. These seven (7) SWMUs/AOCs include: Numbers 14, 110, 198, 201, 204, 213, and 260.

4. **Evaluate UST or oil/water separator in a State or local program.** Four (4) SWMUs/AOCs with moderate petroleum hydrocarbons adjacent to a tank bottom are recommended for further action (such as a leak test or inspection or removal) to assess whether the tank is releasing petroleum hydrocarbons into the soil. These four (4) SWMUs/AOCs are: Numbers 84, 151, 199, and 298.

5. **Excavate shallow, stained soil.** Two (2) SWMUs/AOCs (i.e., Numbers 26 and 33) that are hazardous waste storage areas (HWSAs) have stains on an adjacent unpaved area. It is recommended that the shallow, stained soil at these SWMUs/AOCs be excavated and properly disposed. In addition, as a BMP, it is recommended that the Station no longer store drums outside of the HWSAs.

1.0 INTRODUCTION

This report presents the results of the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) for Marine Corps Air Station (MCAS) El Toro (or Station) up to and including the implementation of the Sampling Visit Work Plan (SVWP) (JEG, 1992).

This report has been prepared in accordance with U.S. Environmental Protection Agency (EPA) RFA Guidance. It incorporates agency comments received on the Draft RFA Report submitted on 18 March 1993 and includes the results of data validation for the analytical information. Previously submitted documents (i.e., Draft PR/VSI Report [JEG, 1991a] and Sampling Visit Work Plan [JEG, 1992]) are also included in this Final RFA Report.

The objectives of the RFA are to identify and gather information on releases or potential releases at the Station, to evaluate solid waste management units (SWMUs) and other areas of concern (AOCs) with respect to releases of hazardous wastes or hazardous waste constituents to the environment, and to assess the need for further action at the SWMUs/AOCs.

An additional objective of the RFA at MCAS El Toro is to identify potential sites for a fourth operable unit (OU-4) for the Remedial Investigation/Feasibility Study (RI/FS) Program at the Station, which is investigating chlorinated volatile organic compound (VOC) contaminated groundwater migrating from the Station.

The definition of a SWMU currently used by EPA is the following:

> "Any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released."

A total of 307 SWMUs/AOCs were identified in the following activities during the RFA:

- o A Preliminary Review (PR) was performed during the period of January 1991 through April 1991. The PR included a review of records regarding past waste storage, handling, and disposal practices in order to identify SWMUs/AOCs at the Station. The PR identified 239 SWMUs/AOCs at the Station.

- o A Visual Site Inspection (VSI) was conducted at the Station between April 1991 and July 1991. Onsite inspections of the SWMUs/AOCs identified in the PR were performed to verify the information obtained from the PR, to visually observe evidence of past and present releases, and to identify potential migration pathways and receptors. Also, an objective of the VSI was to identify additional SWMUs/AOCs not identified in the PR. During the VSI, 60 additional SWMUs/AOCs were identified, bringing the total to 299 SWMUs/AOCs identified from both the PR and VSI.

- o A Sampling Visit (SV) was conducted for the RFA according to a SVWP (JEG, 1992) at selected SWMUs/AOCs during September 1992 and November 1992.

Soil sampling was conducted to verify whether a release had occurred at a SWMU/AOC, and to provide a basis to evaluate whether further action is required. During implementation of the SVWP, five additional SWMUs/AOCs were identified for the RFA, resulting in a total of 304 SWMUs/AOCs. A records review and VSI were conducted for the five additional SWMVs/AOCs during this time period. (Subsequent to submittal of the Draft RFA Report, three additional SWMUs/AOCs were identified for the RFA, resulting in a total of 307 SWMUs/AOCs, which is the current number identified for the Station. A records review and VSI were conducted for these three SWMUs/AOCs; a sampling visit for these SWMUs/AOCs was not recommended. The information on these three sites is provided in Volume III of this report).

One hundred forty SWMUs/AOCs were sampled during implementation of the SVWP. The objective of the sampling for the RFA was to determine whether a release had occurred at a SWMU/AOC. An assessment of the extent of potential contamination (if present) at a SWMU/AOC was not an objective of the sampling visits.

As described in the SVWP, subsurface soil was the only medium proposed for sampling in the RFA for the following reasons:

- Groundwater is located at a depth of about 100 feet or greater at the Station and is, therefore, not the appropriate medium to initially assess whether a release has occurred at a SWMU/AOC.

- o Air was not identified during the VSI as a medium requiring sampling at any of the SWMUs/AOCs. In instances where there was evidence of release to air (e.g., odors at a hazardous waste storage area), it was a temporary, nonroutine release caused by an open container or a small spill within the storage area.

- o Surface water in the major drainage channels was not proposed for sampling in the RFA because it was scheduled to be sampled in the RI/FS Program.

- o Subsurface gas was not recommended for sampling in the RFA because subsurface gas releases are not expected at any of the SWMUs/AOCs.

This report presents the analytical results for the SV, an evaluation of the SV data, and recommendations for each of the 140 SWMUs/AOCs sampled. At this time, only SWMU/AOC 194 (former incinerator site) and SWMU/AOC 300 (spill area adjacent to the former incinerator site) are recommended for further action in a Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) program. SWMU/AOC 90 (former sewage treatment plant) is currently under consideration for possible inclusion into the RI/FS Program at the Station. SWMUs/AOCs with petroleum hydrocarbon contamination only are recommended for further action in a program other than CERCLA.

This report consists of five volumes. Volumes I and II present the results of the RFA up to and including the implementation of the SVWP. Volumes I and II have been organized into seven sections and seven appendices. Section 1.0 presents an introduction for the report. Section 2.0 presents site background information for MCAS

El Toro and describes hazardous waste management practices, previous site investigations, regulatory history, and environmental setting. Section 3.0 presents a brief summary of the PR. Section 4.0 presents a brief summary of the VSI. Section 5.0 describes, in detail, the work performed in implementing the SVWP. Section 6.0 presents an evaluation of the SV data and recommendations for each of the SWMUs/AOCs sampled in the RFA. Section 7.0 is a bibliography. Appendix A presents a summary table of the analytical results for the RFA. Appendix B presents plot plans for the SWMUs/AOCs showing the type and location of soil borings drilled in the RFA. Appendix C presents the soil boring logs for the drilling effort. Appendix D presents information on the statistical development of background metals concentrations for the Station. Appendix E presents the leaching pathway evaluation model for MCAS El Toro. Appendix F presents EPA's list of preliminary remedial goals (PRGs). Appendix G presents an evaluation of tentatively identified compounds (TICs).

Volumes III through V present previously-submitted reports for the RFA, including amendments to reflect updates since their submittal. Volumes III and IV present the Draft PR/VSI Report (JEG, 1991a). This document has been revised to address agency comments and includes information on additional SWMUs/AOCs identified since its submittal. Volume V presents the SVWP (JEG, 1992) implemented for the RFA.

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2.0 BACKGROUND INFORMATION

The following sections summarize background information for MCAS El Toro, with an emphasis on regulatory history and site investigations related to the Station. Background information, facility descriptions, and environmental setting for the Station are also presented.

2.1 Historical Description of MCAS El Toro

In July 1942, construction of a U.S. Marine Corps (USMC) pilots' fleet operational training facility began on approximately 2,320 acres in Orange County, California. On 17 March 1943, that facility was commissioned as MCAS El Toro. In 1950, MCAS El Toro was selected for development as a master jet air station and permanent center for Marine aviation on the West Coast to support the operations and combat readiness of Fleet Marine Forces, Pacific. Between 1944 and 1988, additional land was acquired to bring MCAS El Toro to its present size of approximately 4,740 acres.

The mission of MCAS El Toro is to maintain and operate facilities and provide services and material to support the operation of aviation activities and units of the operating forces of the USMC and Navy. MCAS El Toro also provides support for other activities designated by the Commandant of the Marine Corps, in coordination with the Chief of Naval Operations.

2.2 Site Location

MCAS El Toro is located in Southern California in the County of Orange, about 8 miles southeast of the City of Santa Ana and 12 miles inland (north-northeast) of the coastal city of Laguna Beach as shown in Figure 2-1. The exact location of MCAS El Toro is 33 degrees 38 minutes to 33 degrees 41 minutes north latitude, 117 degrees 41 minutes to 117 degrees 45 minutes west longitude, T 6S/R 8W (Sections 2-5, 7-11, 16-17, 20-21) and T 5S/R 8W (Sections 32-33, 35).

Historically, the land use around MCAS El Toro has been largely agricultural. To the south, southeast, and southwest, however, the land has recently been developed as commercial, light industrial, and some residential usage. The commercial and light industrial usage is directly adjacent to the southwest and southeast borders of the Station. Nearby off-Station residences are located about 3/4 mile from the Station.

A map showing the Station's boundaries and location with respect to local freeways is presented in Figure 2-2.

2.3 Site Operations and Hazardous Waste Generation, Handling, and Disposal

The primary mission of MCAS El Toro is to maintain and operate facilities and provide services and materials to support the operation of aviation activities. This mission involves operation and lower echelon maintenance of a relatively large number of

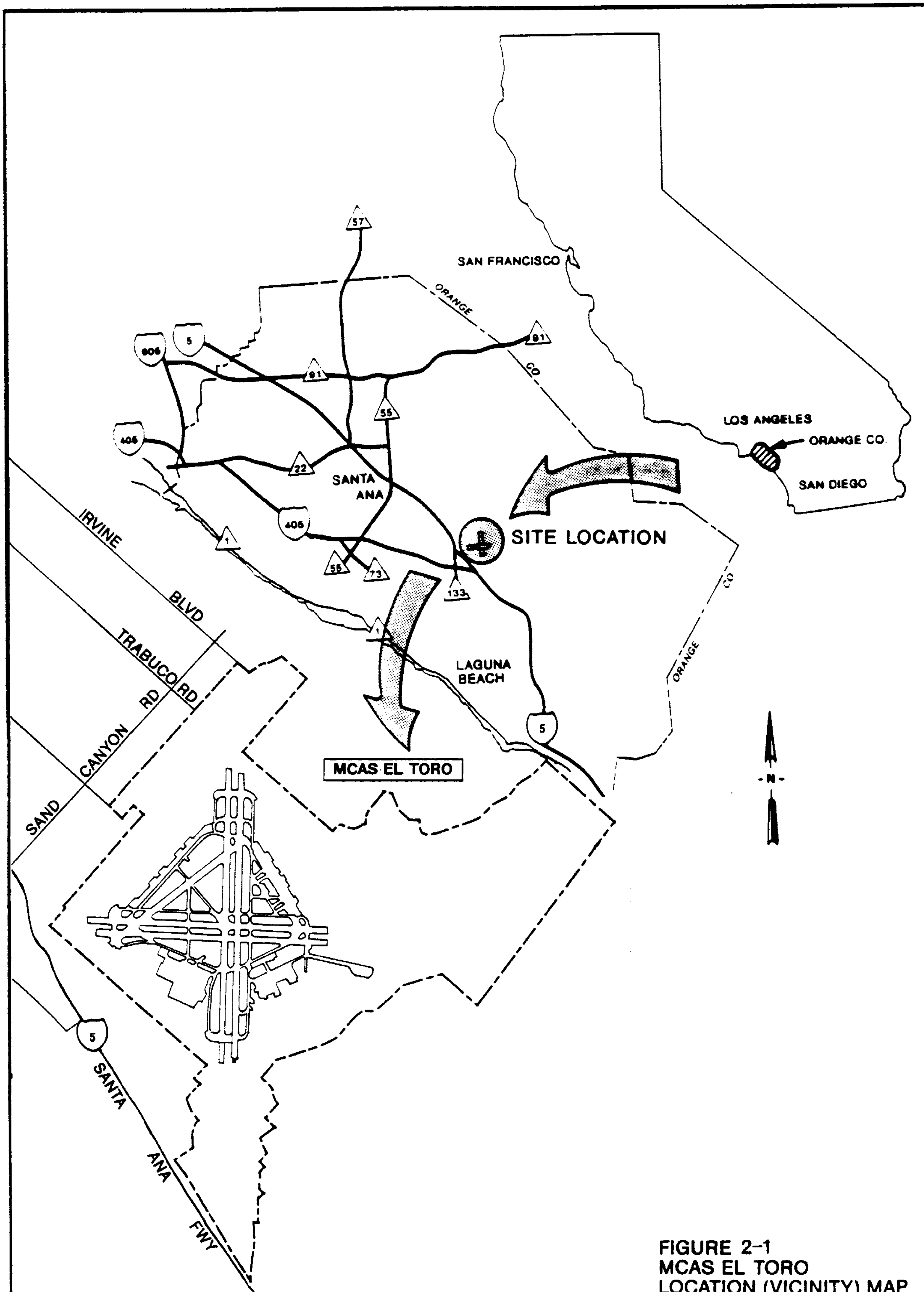

FIGURE 2-1
MCAS EL TORO
LOCATION (VICINITY) MAP

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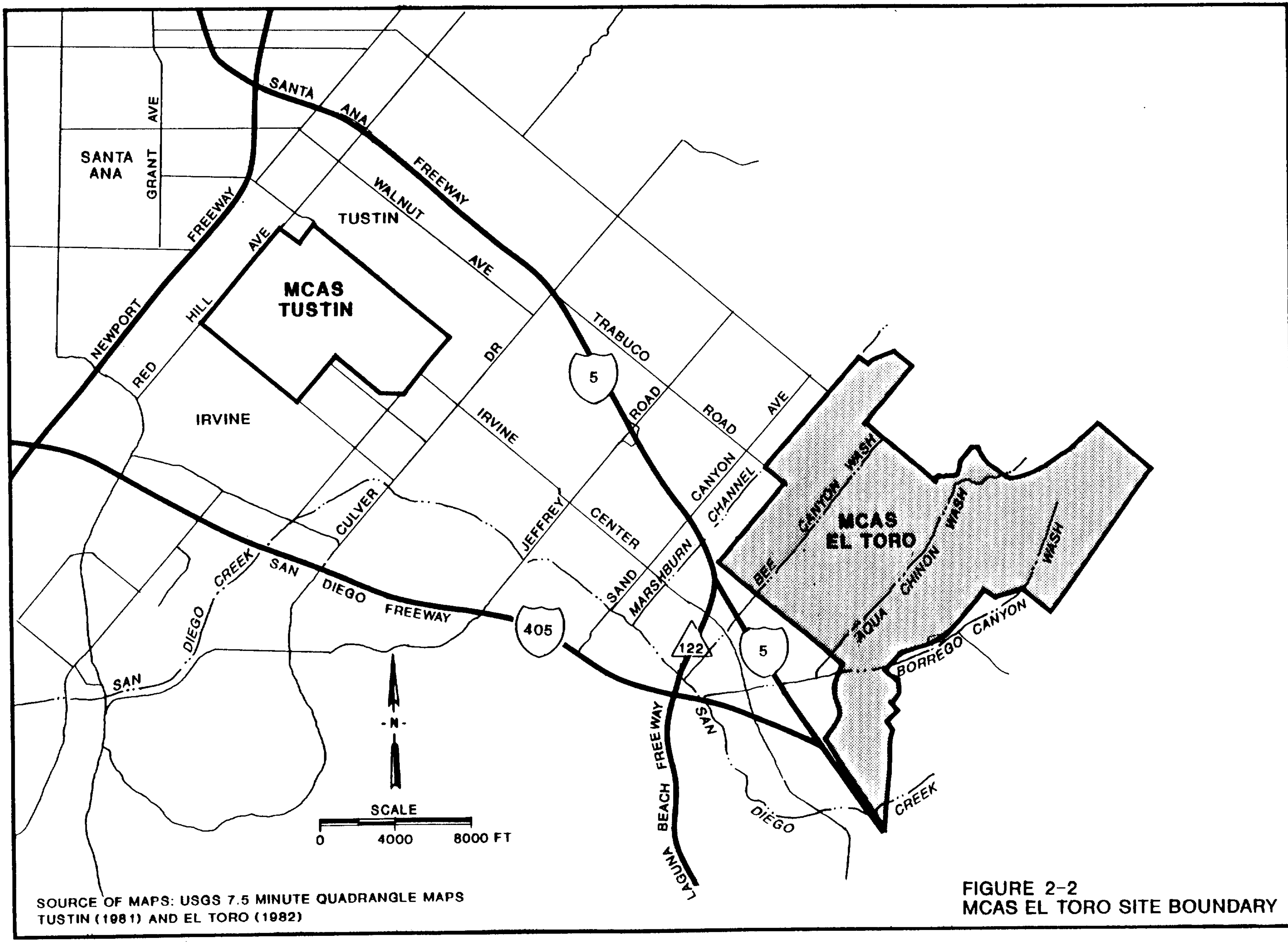

SOURCE OF MAPS: USGS 7.5 MINUTE QUADRANGLE MAPS TUSTIN (1981) AND EL TORO (1982)

FIGURE 2-2
MCAS EL TORO SITE BOUNDARY

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military aircraft and ground support equipment. The generation of hazardous wastes is a result of operations at the following locations:

- o Aircraft maintenance hangars
- o Maintenance shops for auto vehicles, aircraft ground support equipment, vehicle equipment, and construction equipment
- o Auto hobby shop and Marine Corps Exchange auto repair station
- o Washracks and steam cleaning facilities
- o Hazardous, flammable, and unused chemical materials storage
- o Aircraft fueling stations, tactical airfield fuel dispensing systems (TAFDS), and fuel farms

Hazardous wastes typically generated from aircraft and vehicle maintenance, degreasing processes, and painting include: waste oil; fuels; hydraulic fluid; lube oil; antifreeze; cleaning solvents; paints; paint stripper; paint thinner; batteries; and contaminated rags and absorbents.

The unused chemical materials storage areas typically do not generate hazardous waste. Chemical products with an expired shelf life that cannot be recertified are handled as hazardous wastes.

The fuel storage areas generate hazardous waste when fuel storage tanks are cleaned and sludge is pumped out, or when fueling/defueling or loading/unloading operations result in spills.

Wash water from washracks is passed through oil/water separators. The effluent water is discharged to the sanitary sewer or the storm drain, and the waste oil is handled as hazardous waste.

Based on information from an Initial Assessment Study (IAS) by Brown & Caldwell Engineers (B&C) (see Subsection 2.4 for a description of this report), previous operations that are no longer in existence at MCAS El Toro that were significant in past waste generation and disposal include the following:

- Plating operations conducted in the 1940s in Buildings 295, 296, and 297.

- A sewage treatment plant that was constructed in 1943, abandoned in 1972, and demolished in the late 1970s. Although this plant was designed to treat domestic sanitary waste only, wastewater from the metal plating operations in the 1940s was also sent to the plant.

- An incinerator that was operated approximately between 1943 and 1955 to burn trash or municipal-type waste generated by Station housing and other activities. The purpose of the incinerator was to reduce waste volume. Ash from the incinerator was disposed of in the Original Landfill, which is a site in the RI/FS.

Currently, hazardous wastes are accumulated in containers at generator accumulation areas and are held for less than 90 days. Containers are then transferred to the on-Station Interim Status Storage Facility (Building 673T) for ultimate off-Station disposal. Bulk petroleum recyclables such as waste oil and fuel are pumped from generator accumulation containers and transferred to waste storage tanks until pickup by an outside contractor for recycling. Waste oil pumped from oil/water separators is also collected in waste storage tanks. The Facilities Management Department (FMD) pump truck is used to pump the waste oil and fuel. Waste solvents are picked up from the generator accumulation areas or from the storage facility by an outside contractor for recycling.

The MCAS El Toro contracts with transporters and treatment, storage, or disposal facilities (TSDFs) to ship, recycle, treat, or dispose of hazardous wastes. The contracts are established through either the Defense Reutilization and Marketing Office (DRMO) or through the Environmental Office (EO).

The DRMO was set up originally in 1973 as the Defense Property Disposal Office (DPDO). It is currently a civilian operation that is responsible for transferring surplus military waste materials and components from military custody to civilian ownership. In the past, the DRMO has stored surplus hazardous materials in storage yards directly north of Building 360 and to the northeast of this building. These yards are being investigated as Site 8 in the RI/FS Program. Currently, the DRMO and the EO share responsibility for coordinating the hazardous waste handling and disposal at the Station. The EO contains a recycling department, which is primarily involved with the recycling of waste petroleum from the Station. Although the DRMO completes some of the manifests for the Station, the manifest files are maintained by the EO.

2.4 Previous Site Investigations and Regulatory History

The following sections briefly summarize the previous site investigations and regulatory history at MCAS El Toro. Included are discussions of the listing and current activities for programs being conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and RCRA.

2.4.1 General

In 1972, MCAS El Toro received a Cease and Desist Order from the California Regional Water Quality Control Board (CRWQCB), Santa Ana Region, for violations of the discharge requirements established for the Station's former sewage treatment plant. The Order cited two violations: 1) exceeding limits for ether-soluble materials, and 2) discharging sufficient quantities of water to allow surface flows to reach Newport Bay during dry weather conditions. To comply with this Order, the Station shut down its sewage treatment plant and connected its sanitary sewer system to the Irvine Ranch Water District (IRWD).

In 1985, B&C began work on an IAS to locate potentially contaminated sites on MCAS El Toro property. This work was conducted for the Naval Facilities Engineering Command (NAVFACENGCOM) under the Navy Assessment and Control of Installation Pollutants (NACIP) Program, which was the Navy's version of the Department of Defense's (DOD's) Installation Restoration Program (IRP). The IAS report, completed in May 1986, identified 17 potential sources of contamination. No sampling was performed as part of the IAS, and the identification of potentially contaminated sites was based solely on the results of record searches and employee interviews. The IAS report supplied recommended sampling locations and analytical parameters to provide confirmation of suspected contamination at the sites of concern.

In June and July 1985, while the IAS study was underway, the Orange County Water District (OCWD) discovered trichloroethylene (TCE) in agricultural wells TIC[1] 47 and TIC 35 located downgradient of MCAS El Toro. They then launched their own offsite investigation to determine the source and extent of the TCE contamination. After installing a network of monitoring wells and soil-vapor probes and reviewing the results of independent investigations by Cannon, Inc. and Wilma Pacific, Inc., OCWD concluded that MCAS El Toro was the source of the contamination. The OCWD investigations have occurred from the initial discovery of TCE in 1985 to the present. (Herndon and Reilly, 1989; Herndon, 1990).

In 1987, James M. Montgomery Engineers, Inc. (JMM) was contracted by the USMC to review the work done by B&C and to produce a Site Inspection Plan of Action (SIPOA). In July 1987, while the SIPOA study was underway, RWQCB issued a Cleanup and Abatement Order (CAO), requiring the USMC to prepare a supplement to the plan to address off-Station TCE contamination and to submit a draft report on the results. The SIPOA was released in August 1988 and included

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[1] *The Irvine Company*

a recommendation of 19 sites for study and amended sampling plans proposed in the IAS report for each site. One site, designated Site 18, was intended to address the off-Station contaminant plume of VOCs.

In 1988, JMM was again contracted by the USMC to conduct a Perimeter Study Investigation (PSI) to study VOC contamination along the southwestern boundary of the Station. This study was initiated to address RWQCB's concerns that MCAS El Toro was a potential source of a VOC plume that extended 4 miles off Station. The PSI was performed, and the results indicated that VOCs were present in the shallow groundwater (i.e., about 100-feet deep) near the Station boundary. In addition to TCE, the following VOCs were detected: perchloroethylene (PCE), chloroform, and carbon tetrachloride.

As a consequence of the findings of the PSI, an interim groundwater pump and treatment system was installed at the southwestern Station boundary. This system, which began operation on 15 June 1989, is capable of pumping and treating approximately 30 gallons per minute (gpm) of groundwater from three extraction wells. VOC contaminated water is sent to an on-Station granular activated carbon (GAC) unit for treatment, and the effluent is used to irrigate the Station golf course. TCE and PCE composite concentrations in the influent to the treatment system have been in the range of 10-160 and 25-100 parts per billion (ppb), respectively.

In May 1988, the USMC submitted Air Solid Waste Assessment Test (SWAT) Proposals for all four MCAS El Toro landfills to the South Coast Air Quality

Management District (SCAQMD). Following approval by the SCAQMD, Strata Technologies, Inc. conducted the field work and prepared draft reports in October 1990 (Strata, 1990). The field activities consisted of meteorological and geophysical surveys, and sampling of landfill gas, ambient air, and surface gas. The geophysical surveys using ground-penetrating radar (GPR) were somewhat successful at defining the landfill perimeters. The contaminants TCE, PCE, chloroform, and benzene were detected in landfill gas samples in concentrations above the minimum detection limits determined by the California Air Resources Board (CARB). Methylene chloride (MeCl) has also been detected in the landfill gases at MCAS El Toro; due to inadequate decontamination procedures, however, the field system blanks were also contaminated with MeCl. The ambient air samples collected at the MCAS El Toro landfills contained concentrations of MeCl, trichloroethane (TCA), and PCE near the CARB detection limits that, based on upwind and downwind measurements, were not necessarily attributable to emissions from these landfills. The draft Air SWAT reports were submitted in April 1991 to SCAQMD.

2.4.2 NPL Listing

In June 1988, EPA recommended listing MCAS El Toro on the National Priorities List (NPL) of the Superfund Program. The listing was predicated on the presence of VOC contamination at the Station boundary and the detection of VOCs in the agricultural wells to the west of the Station. The MCAS El Toro was listed on the NPL in February 1990. A FFA among EPA, RWQCB, California Department of

Toxic Substance Control (DTSC), and the Navy (on behalf of USMC) was signed in September 1990.

2.4.3 CERCLA Activities

The discovery of TCE and PCE near the downgradient Station boundary prompted the USMC to contract with JMM to prepare an off-Station RI Work Plan. This Plan was completed in March 1990 and included recommendations for monitoring well installations to further delineate the extent of contamination by complementing the OCWD network of monitoring wells. The recommendations of the off-Station RI Work Plan were not implemented by the USMC but served as a starting point for the regional groundwater VOC investigation currently being conducted under the RI/FS program.

In November 1989, the Jacobs Engineering Group, Inc. (JEG) was contracted to prepare an RI/FS Work Plan and associated documents for MCAS El Toro. The project team reviewed the reports mentioned above, as well as other documents pertinent to past disposal practices at the Station. During this process, three sites, in addition to the 19 sites identified earlier in the Site Inspection Plan of Action (SIPOA), were recommended for investigation under the RI/FS process. This brought the total number of sites to be investigated to 22, including the regional VOC investigation (Site 18).

The FFA has grouped the 22 MCAS El Toro RI/FS sites into three OUs. OU-1 consists of the regional VOC Groundwater Investigation (Site 18). At this time, VOCs have been identified in the near surface groundwater under MCAS El Toro and in the deep aquifer downgradient of the Station. Suspect VOC source areas on Station, including four landfills and a petroleum disposal area, have been grouped into OU-2. OU-3 consists of the remaining 16 sites not addressed in OU-1 and OU-2. These OU-3 sites generally address the VOC groundwater contamination as a secondary issue. Primary concerns at these OU-3 sites involve soil and sediment contamination. An OU-4 has also been designated for MCAS El Toro, which may bring sites identified by the RFA into the RI/FS program.

2.4.4 RCRA Activities

The MCAS El Toro is currently an Interim Status Facility under RCRA. Although a previous Part B Permit application was approved by DTSC, the Station was never a permitted facility because EPA did not approve the permit. Six satellite hazardous waste collection facilities (HWCFs) located at Building Nos. 769, 770, 771, 772, 778, and 779 and one central HWCF at Building 673T3 were identified for storage in the permit application. Current plans are to close the six HWCFs and to submit a new Part B Permit application.

Inspections by EPA of hazardous waste management activities at MCAS El Toro in August 1988, July 1989, and June 1990 indicated violations of RCRA and the Hazardous and Solid Waste Amendments (HSWA) of 1984. Based on these violations, EPA issued a Notice of Noncompliance to MCAS El Toro in August 1990 and entered into a Federal Facilities Compliance Agreement (FFCA) with MCAS El Toro on 28 September 1990.

The tasks for compliance with FFCA have been handled by MCAS El Toro and additionally through the Comprehensive Long-term Environmental Action, Navy (CLEAN) Program.

2.5 Environmental Setting

This section summarizes the environmental setting at MCAS El Toro, including topography, surface water, climate, geology, hydrogeology, groundwater chemistry, and ecology.

2.5.1 Setting and Topography

The MCAS El Toro is situated on the edge of the Tustin Plain, a gently sloping surface comprised of alluvial fan deposits derived mainly from the Santa Ana Mountains. The Tustin Plain is the southernmost extension of the Coastal Plain of Los Angeles, a structural basin located in the Peninsular Ranges Geologic Province (Yerkes, et al., 1965). The Tustin Plain is bounded by the Santa Ana Mountains to the north and the San Joaquin Hills to the south.

The MCAS El Toro boundaries extend across the Tustin Plain into the Santa Ana Mountains. Elevations range from about 215 feet above mean sea level (msl) in the southwest corner of the Station on the Tustin Plain to about 800 feet above msl in the northeast corner in the foothills of the Santa Ana Mountains.

2.5.2 Surface Water

Surface drainage in the vicinity of MCAS El Toro flows generally to the southwest, following the slope of the land perpendicular to the trend of the Santa Ana Mountains. Off-Station drainage from the hills to the northeast and from upgradient irrigated farmlands combines with on-Station runoff generated from the extensive paved surfaces at MCAS El Toro and flows into four main drainage channels (see Figure 2-2). Three of these drainage channels (i.e., Borrego Canyon Wash, Agua Chinon Wash, and Bee Canyon Wash) are continuous with natural washes that originate in the Santa Ana Mountains. The southernmost of these washes is Borrego Canyon Wash, which is lined and flows along the southeast boundary of MCAS El Toro. Borrego Canyon Wash crosses the southern corner of the MCAS El Toro and joins Agua Chinon Wash about 1/4 mile from the Station boundary.

Agua Chinon Wash and Bee Canyon Wash transect the central portion of the Station and receive runoff mainly from storm sewers. Their flow is contained within culverts along nearly all their pathway across MCAS El Toro. Agua Chinon Wash flows into San Diego Creek just east of the intersection of the San Diego and Laguna Freeways, about 1 mile downstream of its confluence with Borrego Canyon Wash. Bee Canyon Wash flows into San Diego Creek about 1,500 feet north of Agua Chinon Wash.

Marshburn Channel is a lined drainage channel that runs along the northwestern boundary of MCAS El Toro and receives runoff from the western part of the Station. The wash flows into San Diego Creek about 3/4 mile northwest of Bee Canyon Wash. San Diego Creek flows into Upper Newport Bay about 7 miles downstream from this intersection with Marshburn Channel.

2.5.3 Climate

The climate at MCAS El Toro is typical of what is sometimes referred to as a Mediterranean climate (i.e., cool, moist winters and warm, dry summers). Temperatures in the winter seldom drop below 37°F. Summer temperatures rarely exceed 100°F.

Average annual precipitation is about 12 inches and occurs primarily in the winter. Early morning light fog and low clouds are common in the late spring and early summer. Dry winds, known as *Santa Ana Winds,* with velocities up to 70 miles per hour, occur for short periods during the late fall and early winter (B&C, 1986).

2.5.4 Geology

The MCAS El Toro lies on alluvial fan deposits derived mainly from the Santa Ana Mountains. These Holocene materials consist of isolated coarse-grained stream channel deposits contained within a matrix of fine-grained overbank deposits that range in thickness up to a maximum of 300 feet (Herndon and Reilly, 1989).

The Holocene alluvial materials conformably overlie Pleistocene Age sediments predominantly composed of interlayered fine-grained lagoonal and near-shore marine deposits. These materials become increasingly mixed with beach sands, terrace, and stream channel deposits in the eastern portion of the Tustin Plain and along the basin margins. Thus, the Quaternary deposits form a heterogeneous mixture of silts and clays with interbedded sands and fine gravels that range in thickness up to 500 feet in the western portion of the Tustin Plain (Singer, 1973).

The deeper Quaternary sediments may be equivalent to the lower Pleistocene San Pedro Formation, which consists of semiconsolidated silts, clays, and sands with interbedded limestone. These lagoonal and shallow marine deposits are considered to be a major water-bearing unit in the region, but probably do not extend beneath MCAS El Toro (B&C, 1986).

The Pleistocene deposits nonconformably overlie older semiconsolidated marine sandstones, siltstones, and conglomerates of late Miocene to late Pliocene age. These units comprise the Fernando, Capistrano, and Niguel Formations. The lower Pliocene Fernando Formation, considered to be the major aquifer in the Irvine area, is the base of the water-bearing units (Herndon and Reilly, 1989). This formation probably interfingers with clayey and sandy siltstones of the Capistrano and Niguel Formations west of MCAS El Toro, and together range up to 1,500 feet in thickness (JMM, 1988).

Beneath the semiconsolidated rocks lies a very thick sequence of interbedded marine and nonmarine sedimentary rocks and volcanic rocks of the Monterey, Puente, Vaqueros, and Sespe Formations. These units, which are deposited on a basement of crystalline metamorphic and igneous rocks, have been considered to be nonwater bearing in previous studies (JMM, 1990).

2.5.5 Hydrogeology

Although the aquifers beneath the Tustin Plain are in hydraulic contact with the main Orange County Groundwater Basin, it is difficult to make correlations among specific aquifer zones. In the Irvine area, aquifers are much thinner and separated by thicker sequences of fine-grained materials (Banks, 1984). Aquifers tend to be composed of lenticular clayey and silty sands and fine gravels contained within a complex assemblage of sandy clays and sandy silts. Thus, rather than identifiable aquifers that may be correlated from place to place, the groundwater may be considered to flow in a single, large-scale heterogeneous system (Herndon and Reilly, 1989).

The groundwater system beneath the Tustin Plain has been divided into a forebay area and a pressure area. The forebay area lies along the margin of the basin where sediments are relatively shallow and coarse-grained above consolidated rock. Groundwater generally occurs under unconfined conditions in this area. Recharge to the regional system takes place in the forebay area primarily along washes that exit the Santa Ana Mountains. The pressure area lies in the central portion of the basin, where sediments are thicker and relatively finer grained. Groundwater in this area occurs mainly in deeper zones that become increasingly confined with depth. The groundwater has historically been discharged through irrigation wells or has moved westward to the Main Orange County Basin (Banks, 1984).

The MCAS El Toro lies along the margin of the groundwater system beneath the Tustin Plain. Although the boundary between the forebay and pressure areas varies seasonally and yearly according to the amount of groundwater recharge and withdrawal, MCAS El Toro is situated mainly in the forebay area. Thus, geologic materials are relatively coarser than in the central portion of the basin, and groundwater lies under mainly unconfined conditions. This statement regarding geologic materials will be verified during the Phase I RI. In addition, recharge to the regional system may occur as infiltration of surface water along washes and swales at MCAS El Toro and as subsurface inflow along permeable zones.

When present, groundwater within the foothills lies within 50 feet of the ground surface (JMM, 1988). Along the perimeter of MCAS El Toro, the depth to groundwater varies between 82 and 122 feet (JMM, 1990). The direction of flow along the southwest boundary of MCAS El Toro is to the northwest at a gradient of 0.0066 ft/ft, according to 1989 water levels (JMM, 1990). Regional flow has been to the west and northwest since the 1940s and controlled locally by large pumping depressions. Reduced pumping and water imports in the past 20 years have allowed groundwater levels to recover as much as 100 feet. In 1988, the regional gradient was calculated to be 0.008 ft/ft (Herndon and Reilly, 1989).

Vertical piezometric gradients measured in multiple-completion wells west of the Station revealed a downward gradient of flow in the upper 400 feet, probably in response to pumping in irrigation wells in this area (Herndon and Reilly, 1989). A downward vertical gradient may occur for the same reason at MCAS El Toro.

However, limited investigation has failed to detect a vertical gradient in multiple-depth cluster wells installed at the Station (JMM, 1990).

Aquifer tests performed in monitoring wells installed on and near MCAS El Toro generated hydraulic conductivity estimates that range from 2.2 to 36 feet per day (ft/day), with an average of 30 ft/day determined in a 72-hour aquifer test (JMM, 1990). A 72-hour test performed by OCWD in the basin west of the Station found the hydraulic conductivity to be 21 ft/day. The average linear groundwater velocity was estimated to range from 0.7 to 4 ft/day (Herndon and Reilly, 1989).

2.5.6 Groundwater Chemistry

In addition to the VOC contamination described earlier, historical degradation of groundwater quality associated with other contaminants has occurred in the Irvine area. Increases in the levels of total dissolved solids (TDS), selenium, and nitrates in the groundwater have been related to past agricultural activities and incursions of lower quality water from the margins of the basin under the influence of pumping wells. The deterioration has been taking place at least since 1971. The largest area of groundwater remaining unaffected by this contamination lies in deeper zones in the central pressure area of the basin (Banks, 1984). Unfortunately, this area is being threatened by VOC contamination.

Investigations by OCWD in this area have revealed the presence of three hydrochemical facies in groundwater related to depth in the aquifer. The first facies, characteristic of shallow groundwater lying within 200 feet of the ground surface, contains relatively high levels of TDS and nitrate and is dominated by calcium and sulfate ions. The second facies, characteristic of groundwater lying between 200 and 450 feet in depth, contains lower levels of TDS and nitrate and is dominated by sodium, calcium, and bicarbonate ions. This is the zone in which VOC contamination has occurred. The third facies, lying at depths greater than 450 feet, contains relatively high levels of TDS, relatively low levels of nitrate, and is dominated by sodium and sulfate ions (Herndon and Reilly, 1989). Preliminary work performed by MCAS El Toro has tended to confirm these findings (JMM, 1990).

2.5.7 Ecology

The following information on ecology and land use has been taken from the IAS (B&C, 1986) and from information supplied by the USMC.

About 1,000 acres within MCAS El Toro are leased to local farmers, who grow oranges and other produce. The Station itself has a residential population of about 6,000 and also employs about 10,000 workers. A school and a children's playground are located in the northeast portion of MCAS El Toro near the on-Station residential area. Land adjacent to the Station on the north, south, and east is used for agriculture. Commercial and light industrial land usage is located directly adjacent to the southwest and southeast borders of the Station.

The annual rainfall of about 12 inches per year occurs almost entirely in the winter months and supports a semidesert grassland community. Three types of plants have adapted to this region: annuals, succulents, and desert shrubs. Annuals have adapted by growing only in areas with adequate moisture. Succulents avoid drying out by storing water. Desert shrubs have adapted to lengthy dry periods with many branches and with thick small leaves that are shed during droughts (B&C, 1986).

Nearby surface water bodies that may receive runoff from MCAS El Toro include Sand Canyon Reservoir (about 3 miles southwest of the site) and Laguna Reservoir (about 2 miles south of the site). Other surface water bodies exist from 1 to 6 miles from the site; these may or may not receive runoff from the site.

The IAS estimated that 90 percent of the native flora on the Station has been cleared for agriculture, construction, or paving. The existing natural habitat consists mainly of grassland and sage-scrub communities. The IAS contains lists of predominant local species for these habitat types, as well as results of database searches for endangered and threatened species in the vicinity of the Station, including the Upper Newport Bay Ecological Reserve.

No plants or animals were listed on the Natural Diversity Database (NDDB) in the vicinity of the Station as of March 1985. There were several species of birds and two plants listed for the Upper Newport Bay Ecological Reserve or for duck pond areas associated with the University of California, Irvine. The Reserve and duck pond areas are about 8 to 9 miles southwest of MCAS El Toro.

3.0 PRELIMINARY REVIEW

A PR was conducted at MCAS El Toro in early 1991 as the first phase of the RFA. A draft report on the PR was submitted on 12 April 1991 (JEG, 1991b). The purpose of the PR was to collect and review records regarding past waste storage, handling, and disposal practices at the Station in order to identify SWMUs and AOCs. The PR identified 239 SWMUs/AOCs to be visited during the VSI portion of the RFA. Table 4-1 in Section 4.0 presents a list of all of the SWMUs/AOCs identified during the RFA. The first 239 SWMUs/AOCs in this table are those identified during the PR.

Activities conducted during the PR included records review of Agency and Navy/Marine Corps files, an aerial photograph review, and interviews with Station personnel. This section briefly summarizes the records reviewed, agencies contacted, and persons interviewed during the PR. The Draft PR Report should be consulted for additional details regarding the PR at MCAS El Toro.

3.1 Agency Files Reviewed

The review of agency files began in February of 1991. The following agencies were contacted to obtain records pertaining to the RFA at MCAS El Toro:

- o California Regional Water Quality Control Board (CRWQCB), Santa Ana Region
- o California Department of Health Services (now California Department of Toxic Substances Control)
- o U.S. EPA, Region IX

- o Orange County Health Care Agency
- o Orange County Fire Department
- o County Sanitation Districts of Orange County
- o Irvine Ranch Water District (IRWD)

3.2 Navy/Marine Corps Files

Files pertaining to waste management at the Station were collected and reviewed from information repositories on Station and from the following Navy/Marine Corps sources:

- o Naval Energy and Environmental Support Activity (NEESA), Port Hueneme, California
- o Naval Facilities Engineering Command, Southwest Division (SOUTHWESTDIV), San Diego, California
- o Naval Facilities Engineering Command, Western Division (WESTDIV), San Bruno, California

3.3 Photographs Reviewed

Aerial and other available photographs of MCAS El Toro were reviewed for indications of past storage, handling, and disposal of wastes at the Station. Items such as obvious stained areas, waste piles, drum storage areas, pits, etc., were the focal point of the photograph review. The following is a summary of the sources investigated for photographs of MCAS El Toro:

- NEESA
- California Department of Health Services (now California Department of Toxic Substances Control)
- Aerial Fotobank (Stanton, California)
- Aerial Map Industries (Santa Ana, California)
- Airborne Systems, Inc. (Anaheim, California)
- Coast Surveying, Inc. (Tustin, California)
- Orange County Flood Control
- Pacific Aerographics (Santa Ana, California)
- University of California, Irvine (Irvine, California)
- Whittier College (Whittier, California)

3.4 Interviews With Station Personnel

Interviews with retired and actively employed personnel at the Station were held to discuss areas where possible releases may have occurred on Station. Table 3-1 presents a list of the people interviewed for the RFA.

3.5 Other Information Reviewed

A review of records of abandoned oil wells in the vicinity of the Station was performed at the California Department of Conservation (CDC), Division of Oil and Gas. The records at CDC indicated that two abandoned wells are located within the Station boundaries.

Table 3-1
List of Station Personnel Interviewed

Name	Position	No. of Years at MCAS El Toro	Date(s) Interviewed
Mr. Clint Arnett	Fire Chief	17	05 April 1991
Mr. Matt Kiolbassa	Program Coordinator of HAZMAT	2.5	20 March 1991
Mr. Jacob Kormos	Retired. Aircraft mechanic, then an estimator and inspector in the Facilities Management Department	46[1] (retired 1989)	01 April 1991
LtJG Mike Rehor	Environmental Director	4	21 March 1991
Mr. James Popkens	Superintendent of Maintenance Utilities	10	21 March 1991
Mr. Mark Schnell	General Manager of Aircraft Fuel Supply	4	21 March 1991
Mr. Paul Sherwood	Director of Facilities Management Department	15	21 March 1991
Mr. Eugene Silva	Retired. Superintendent of Heavy Duty Vehicles	39 (retired 1990)	04 April 1991 05 April 1991
Ms. Nancy Yates	Hazardous Waste Manager	7	20 March 1991

[1]Worked At MCAS El Toro from 1943, the year that the station was commissioned.

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4.0 VISUAL SITE INSPECTION

After the PR was completed, a VSI of MCAS El Toro was conducted as the next phase of work for the RFA. In addition to visiting and inspecting SWMUs/AOCs identified during the PR, the VSI also included an overall inspection of the Station to identify additional SWMUs/AOCs that were unidentifiable through the records review.

A total of 307 SWMUs/AOCs received a VSI during the RFA. This number includes 239 SWMUs/AOCs identified during the PR and 60 SWMUs/AOCs identified during the VSI phase of work. Five additional SWMUs/AOCs were identified during the implementation of the SVWP and three more SWMUs/AOCs were identified subsequent to submittal of the Draft RFA Report.

The Draft PR/VSI Report (JEG, 1991a) is included as Volumes III and IV of this report. It has been updated to incorporate agency comments. An addendum providing PR and VSI information for the eight "new" SWMUs/AOCs is included in Volume III.

The following sections summarize the purpose, methodology, and results of the VSI.

4.1 Objectives of the VSI

The objectives of the VSI were as follows:

- o Verify the location of SWMUs and AOCs identified under the PR and collect visual evidence of releases at these sites

- o Visually inspect the entire facility for evidence that releases of hazardous wastes of constituents had occurred and identify additional SWMUs/AOCs
- o Fill data gaps identified in the PR
- o Provide the basis for recommending further action

4.2 Performance of the VSI

The VSI at MCAS El Toro was primarily performed between 18 April 1991 and 16 May 1991. Some additional site visits were conducted on 19 June 1991 to supplement this information. The Draft PR/VSI Report summarizing the RFA information through the VSI phase of work was submitted on 03 July 1991 (JEG, 1991a). In addition, the following site visits were conducted in November 1992 at five "new" SWMUs/AOCs identified during the field work associated with implementing the SVWP at the Station:

SWMU/AOC 300	Spill Area, east of SWMU/AOC 194
SWMU/AOC 301	Mark Arrest System (with UST)
SWMU/AOC 302	Mark Arrest System (with UST)
SWMU/AOC 303	UST (received spills from trenches inside Bldg 359)
SWMU/AOC 304	Trenches inside Bldg 359, near inactive TCE degreaser

Site visits were also conducted in June 1993 at the following three additional SWMUs/AOCs identified subsequent to submittal of the Draft RFA Report:

SWMU/AOC 305	Septic Tank at Bldg. 601
SWMU/AOC 306	Septic Tank at Bldg. 687
SWMU/AOC 307	Septic Tank at Bldg. 819

At each SWMU/AOC, visual evidence was collected for the following categories, as specified in the RFA Guidance: unit characteristics, waste characteristics, pollution migration pathways, evidence of release, and exposure potential.

During the VSI, visual observations were made and recorded in a field logbook. In addition to verifying the location of each SWMU/AOC on the Station map, measurements were taken in the field and a plot plan was developed for the individual site. A VSI checklist was used to ensure completeness of the individual sites visited, and to provide for consistency in the information obtained from the many sites inspected. All SWMUs/AOCs were photographed during the VSI.

The following types of sites were identified through the records review and site visits:

- o USTs that have stored or are currently storing waste materials
- o USTs with unknown storage contents
- o Past and present hazardous waste and/or drum storage areas

- Washracks
- Sites recommended by the CRWQCB, Santa Ana Region
- Active sanitary sewer lines
- The four major on-Station drainage channels
- The former sewage treatment plant site (including abandoned tie-in lines to the existing sanitary sewer system)
- The abandoned sewer lines associated with the former metal plating operation
- The golf course, its irrigation tank, and the pipeline between the former sewer treatment plant and the irrigation system
- The former incinerator site
- Two abandoned oil wells
- Other sites identified from photographs and interviews with Station personnel
- Sites identified during the VSI

- o Sites identified during implementation of the SVWP

- o Three septic tanks

Table 4-1 presents a complete list of the 307 SWMUs/AOCs identified and visited during the RFA. The table also indicates the SWMU/AOC number, type of site, location, source of identification of the site as a SWMU or AOC, and other information for each of the SWMUs/AOCs identified through the records review and VSI.

The Draft PR/VSI Report (Volumes III and IV of this report) should be consulted for details of the PR and VSI portions of the RFA.

4.3 Recommendations for a Sampling Visit

Three hundred seven (307) SWMUs/AOCs were identified during the RFA at the Station. Of these, 140 were recommended for a sampling visit in the SVWP. (It should be noted that the Draft PR/VSI Report recommended 157 SWMUs/AOCs for sampling. When combining oil/water separators and their adjacent oil underground storage tank [UST] as a single SWMU for sampling, the number is reduced to 140). During implementation of the SVWP, four additional SWMUs/AOCs (i.e., Numbers 300, 301, 302, and 303) were recommended for a sampling visit and four other SWMUs/AOCs (i.e., Numbers 67, 72, 217, and 218) were eliminated from a sampling visit, leaving the revised total at 140 SWMUs/AOCs that were sampled during the RFA. Section 5.1.4 describes these revisions to the SVWP in more detail.

The following rationale was used in recommending sampling visits for the various types of SWMUs/AOCs:

- o USTs and oil/water separators were recommended for a sampling visit with the exception of USTs that passed a tank test conducted in 1990 and spill containment tanks that were installed in 1988.

- o Hazardous waste storage areas (HWSAs) were recommended for a sampling visit.

- o Drum storage areas were recommended for a sampling visit if there was evidence of spills/leaks and the area is located on unpaved soil or pavement with cracks.

- o Washracks were recommended for a sampling visit if the pavement in the wash area had cracks.

- o Other SWMUs/AOCs were evaluated for a sampling visit on an individual basis.

Table 4-2 presents a list of the SWMUs/AOCs where a sampling visit was recommended and performed.

TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
1	Former Scrap Metal Yard	Photograph	Near Golf course					
2	Vegetation Piles	Photograph	Near Golf Course					
3	Marshburn Channel	l	See Figure 1-2 of PR/VSI					
4	Bee Canyon Wash	l	See Figure 1-2 of PR/VSI					
5	Borrego Canyon Wash	l	See Figure 1-2 of PR/VSI					
6	Landfarming site	e	NW Bee Canyon Wash	For remediating petroleum-contaminated soil				
7	Transformer storage area	e	E of Bee Canyon Wash					
8	Abandoned Well 50-3285	i	E. of Magazine Rd, W. of Bldg. 809	Drilled in 1950, depth 3285 feet				
9	Fuel bladder	e	East of Aqua Chinon Wash	2,000-gallon fuel bladder				
10	Abandoned Well 24-4274	i	E of bldg 385	RI/FS Site				
11	Agua Chinon Wash	l	See Figure 1-2 of PR/VSI					
12	Active Sanitary Sewer Lines	l	See Figure 3-2 of PR/VSI					
13	Drop Tank Storage Area	e	SW of bldgs 114 & 115	Tanks drained onto adjacent soil or storm drain				
14	Drop Tank Storage Area	e	NW of bldgs 605	Tanks drained onto adjacent soil or storm drain				
15	Wash water runoff site	e	SW of direct fueling stations 576	Wash water runoff onto unprotected soil				
16	Wash water runoff site	e	NW of fueling stations 574	Wash water runoff onto unprotected soil				
17	Underground Storage Tank	f	Tank Farm 2	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
18	Underground Storage Tank	f	Tank Farm 4	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
19	Underground Storage Tank	f	Tank Farm 4	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
20	Underground Storage Tank	f	414	Located near 414; piped to Farm 5, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
21	Underground Storage Tank	f	Tank Farm 5	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
22	Underground Storage Tank	f	Tank Farm 5,6	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
23	Underground Storage Tank	f	Tank Farm 555	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
24	Underground Storage Tank	f	Tank Farm 6	Spill Containment Tank, Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste JP-5
25	Drum Storage Area	b	5					
26	Hazardous Waste Storage Area	Active	5					
27	Hazardous Waste Storage Area	Active, b	AERO CLUB 10					
28	Fuel Spill Site	e	AERO CLUB 10	Routine fuel spills in the past				
29	Drum Storage Area	c	AERO CLUB 10			240 sq ft		
30	Drum Storage Area	b,c	29			360 sq ft		

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TABLE 4-1 COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION MCAS EL TORO RFA								
SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
31	Drum Storage Area	c	29	RI/FS Site				
32	Drum Storage Area (2)	b	36					
33	Hazardous Waste Storage Area	Active	51					
34	Drum Storage Area	c	71	Identified as MCAS Tustin		45,000 sq ft		
35	Drum Storage Area	b	96					
36	Drum Storage Area	a	103	Duplicate of SWMU/AOC 27				
37	Aircraft Wash Area	a	114	Duplicate of SWMU/AOC 210				
38	Drum Storage Area	a	114					
39	Hazardous Waste Storage Area	Active	115					
40	Drum Storage Area (2)	a	127					
41	Vehicle Wash Rack	a	127					
42	Drum Storage Area	a,b	130					
43	Drum Storage Area (2)	c	137			450 sq ft		
44	Drum Storage Area (2)	a	143					
45	Drum Storage Area	c	155			150 sq ft		
46	Vehicle maintenance and parking	e	163	DRMO Lot 2				
47	Drum Storage Area (2)	c	172					
48	Underground Storage Tank	f	178	Active	1943	50,000 gal	Steel-Lined Concrete	Waste Oil
49	Underground Storage Tank	f	179	Active	1943	25,000 gal	Steel-Lined Concrete	Waste Oil
50	Drum Storage Area	c	179			56 sq ft		
51	Underground Storage Tank	f	180	Active	1943	50,000 gal	Steel-Lined Concrete	Waste JP-5
52	Underground Storage Tank	f	182	Active	1943	25,000 gal	Steel-Lined Concrete	Waste Oil
53	Underground Storage Tank	f	185	Identified as MCAS Tustin	Unknown	750 gal	Steel	Waste Oil
54	Underground Storage Tank	f	185	Identified as MCAS Tustin	Unknown	750 gal	Steel	Waste Oil
55	Drum Storage Area (2)	c	186			20 sq ft		
56	Drum Storage Area (2)	c	187			172 sq ft		
57	Underground Storage Tank	f	189	Active	1943	50,000 gal	Steel-Lined Concrete	Waste Oil
58	Underground Storage Tank	f	189	Active	1988	2,000 gal	Fiberglass-Coated Steel	Waste Oil
59	Underground Storage Tank	f	191	Active	1943	25,000 gal	Steel-Lined Concrete	Waste Oil
60	Underground Storage Tank	f	204	Release detection 1989, Active	1943	50,000 gal	Steel-Lined Concrete	Waste JP-5

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
61	Underground Storage Tank	f	205	Release detection 1989, Active	1943	25,000 gal	Steel-Lined Concrete	Waste JP-5
62	Underground Storage Tank	f	206	Release detection 1989, Active	1943	50,000 gal	Steel-Lined Concrete	Waste JP-5
63	Underground Storage Tank	f	207	Release detection 1989, Active	1943	50,000 gal	Steel-Lined Concrete	Waste JP-5
64	Hazardous Waste Storage Area	Active	240					
65	Underground Storage Tank	f	240	Active	1982	185 gal	Steel	Waste Oil
66	Oil/Water Separator	f	240	Active	1982	100 gal	Steel	
67	Drum Storage Area	b	242					
68	Oil/Water Separator (2)	f	244	Active	1944	100 gal	Concrete	
69	Drum Storage Area (2)	a	262					
70	Hazardous Waste Storage Area	Active	289					
71	Hazardous Waste Storage Area	Active, b	295	RI/FS Site				
72	Hazardous Waste Storage Area	Active	296					
73	Hazardous Waste Storage Area	Active, a	297					
74	Aircraft Wash Area	a	297					
75	Underground Storage Tank	f	297	Active	1988	1,000 gal	Fiberglass-Coated Steel	Fuel Slop
76	Oil/Water Separator	f	297	Active	1982	100 gal	Steel	
77	Underground Storage Tank	f	297	Active	1982	185 gal	Steel	Waste Oil
78	Drum Storage Area (2)	c	297			720 sq ft		
79	Drum Storage Area (2)	c	297			50 sq ft		
80	Drum Storage Area (2)	c	297			16 sq ft		
81	Drum Storage Area (2)	c	297			352 sq ft		
82	Drum Storage Area (2)	c	297			450 sq ft		
83	Hazardous Waste Storage Area	Active, a,b	298					
84	Oil/Water Separator	f	298	Active	1982	100 gal	Steel	
85	Underground Storage Tank	f	298	Active	1982	185 gal	Steel	Waste Oil
86	Drum Storage Area	c	298	Possible duplicate of SWMU/AOC 83		25 sq ft		
87	Drum Storage Area	c	298	Possible duplicate of SWMU/AOC 83		120 sq ft		
88	Drum Storage Area	e	306					
89	Drum Storage Area (2)	c	306			60 sq ft		
90	Former Sewage Treatment Plant	e	307					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
91	Underground Storage Tank	f	314	Active	1945	50,000 gal	Concrete	Waste Oil
92	Underground Storage Tank	f	314	Active	1945	50,000 gal	Concrete	Waste Oil
93	Drum Storage Area	a,b	317					
94	Drum Storage Area	a,b	320	RI/FS Site				
95	Engine Test Cell	a	324					
96	Drum Storage Area	a	343	Possible Duplicate of SWMU/AOC 107 or 242				
97	Drum Storage Area	a	357					
98	Vehicle Wash Rack	a	359					
99	Drum Storage Area	a	359					
100	TCE Degreasers	a	359					
101	Oil/Water Separator	f	359	Active	1952	100 gal	Concrete	
102	Underground Storage Tank	f	359	Active	1982	500 gal	Steel	Waste Stoddard Solvent
103	Drum Storage Area (2)	c	359			120 sq ft		
104	Drum Storage Area	b	360	RI/FS Site				
105	Drum Storage Area	c	360	RI/FS Site				
106	Drum Storage Area	c	360	RI/FS Site		5,076 sq ft		
107	Hazardous Waste Storage Area	Active	371					
108	Underground Storage Tank	f	T-10	Spill Containment Tank, Active	1988	1,000 gal	Fiberglass-Coated Steel	Fuel Slop
109	Drum Storage Area (2)	b	379					
110	Vehicle Wash Rack	a	386					
111	Hazardous Waste Storage Area	Active, a	386	Duplicate of SWMU/AOC 223				
112	Oil/Water Separator	f	386		1982	100 gal	Steel	
113	Underground Storage Tank	f	386	Active	1982	185 gal	Steel	Waste Oil
114	Drum Storage Area	c	386	Active		50 sq ft		
115	Vehicle Wash Rack	a	388	Duplicate of SWMU/AOC 201				
116	Drum Storage Area	a,b	388					
117	Underground Storage Tank	f	388	Active, Identified as gasoline tank in VSI	1955	2,000 gal	Steel	Waste Oil
118	Oil/Water Separator (2)	f	388	Active	1955	100 gal	Steel	
119	Drum Storage Area	b	389					
120	Vehicle Wash Rack	a	390					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
121	Drum Storage Area (2)	a	390					
122	Drum Storage Area	c	390			480 sq ft		
123	Vehicle Wash Rack	a	390	Duplicate of SWMU/AOC 213				
124	Hazardous Waste Storage Area	Active, a	392					
125	Hazardous Waste Storage Area	Active	415					
126	Hazardous Waste Storage Area	Active	442					
127	Drum Storage Area	d	445					
128	Storage Area	e	445	Waste stored inside the building. Inactive				
129	Underground Storage Tank	f	445		1959	100 gal	Steel	Waste Oil & Water
130	Drum Storage Area	a	447					
131	Engine Test Cell	a	447					
132	Oil/Water Separator	f	447	Active	1959	100 gal	Steel	
133	Drum Storage Area (2)	b	453					
134	Drum Storage Area (2)	a	454					
135	Drum Storage Area	a	456					
136	Aircraft Wash Area	a	461					
137	Oil/Water Separator	f	461		1960	1,500 gal	Steel	Sand, and waste #2 fuel oil
138	Drum Storage Area	a	461					
139	Oil/Water Separator	f	462		1960	1,500 gal	Steel	Sand, and waste #2 fuel oil
140	Hazardous Waste Storage Area	Active	462					
141	Aircraft Wash Area	a	463					
142	Drum Storage Area (2)	a	463					
143	Underground Storage Tank (2)	f	493	Inactive	1944	Unknown	Concrete	Waste Oil
144	Drum Storage Area	b	529					
145	Underground Storage Tank	f	529	Inactive	1944	25,000 gal	Concrete	Unk., Waste Oil
146	Drum Storage Area	a,b	534					
147	Drum Storage Area	a,b	602					
148	Oil/Water Separator	f	602	Inactive, Possible Duplicate of SWMU/AOC 215	1964		Concrete	
149	Drum Storage Area	a	605					
150	Aircraft Wash Area	a	605					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
151	Oil/Water Separator	f	605	Active	1984	100 gal	Steel	
152	Aircraft Wash Area	a	606					
153	Drum Storage Area	a	606	Possible Duplicate of SWMU/AOC 255				
154	Oil/Water Separator	f	606	Duplicate of SWMU/AOC 163	1965	100 gal	Concrete	
155	Vehicle Wash Rack	a	616	Duplicate of SWMU/AOC 195				
156	Underground Storage Tank	f	625	Active, RI/FS Site	1967	500 gal	Cath. Prot. Steel	Waste Oil
157	Vehicle Wash Rack	a	626	RI/FS Site				
158	Drum Storage Area	a,b	626	RI/FS Site				
159	Oil/Water Separator	f	626	Active, RI/FS Site	1967		Concrete	
160	Hazardous Waste Storage Area	Active	636					
161	Hazardous Waste Storage Area	Active	641	Duplicate of SWMU/AOC 39				
162	Underground Storage Tank	f	643	Active	1982	185 gal	Cath. Prot. Steel	Waste Oil
163	Oil/Water Separator	f	643	Active	1982	100 gal	Concrete	
164	Vehicle Wash Rack	a	651					
165	Drum Storage Area	a	651	Located within SWMU/AOC 164				
166	Underground Storage Tank	f	651	Active	1971	500 gal	Steel	Product Oil
167	Underground Storage Tank	f	651	Active	1971	500 gal	Steel	Product Oil
168	Underground Storage Tank	f	651	Active	1971	500 gal	Steel	Waste Oil
169	Underground Storage Tank	f	651		1971	500 gal	Concrete	
170	Drum Storage Area (2)	a,b	655					
171	Hazardous Waste Storage Area	Active, a	658					
172	Hazardous Waste Storage Area	Active	671					
173	Oil/Water Separator	f	671					
174	Underground Storage Tank (2)	f	672	Active	Unknown	500 gal	Steel	Waste JP-5
175	Underground Storage Tank	f	672	Active	1982	100 gal	Steel	
176	Underground Storage Tank	f	672	Active	1982	1,000 gal	Steel	Waste Oil
177	Drum Storage Area	c	672			360 gal		
178	Vehicle Wash Rack	a	673					
179	Oil/Water Separator	f	673	Active	1982	100 gal	Steel	
180	Underground Storage Tank	f	673	Active	1982	300 gal	Steel	Waste Oil

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
181	Landfarming site	e	673	For remediating petroleum-contaminated soil				
182	Drum Storage Area (2)	c	673			500 sq ft		
183	Drum Storage Area (2)	c	673			400 sq ft		
184	Drum Storage Area (2)	c	673			240 sq ft		
185	Drum Storage Area (2)	c	673			600 sq ft		
186	Hazardous Waste Storage Area	Active	673					
187	Underground Storage Tank	f	674	Active	1982	500 gal	Concrete	Waste Oil
188	Underground Storage Tank	f	675	Active	1982	500 gal	Concrete	Waste Oil
189	Oil/Water Separator	f	676					
190	Oil/Water Separator	f	696	Duplicate of SWMU/AOC 163				
191	Underground Storage Tank (2)	f	706	Demolished 1987	1984	100 gal	Steel	Unk., Waste Oil
192	Underground Storage Tank	f	716	Active	1976	3,000 gal	Fiberglass	Waste Oil
193	Oil/Water Separator	f	716	Active	1976	100 gal	Concrete	
194	Former Incinerator Site	I	746					
195	Vehicle Wash Rack	a	758					
196	Oil/Water Separator	f	758	Active	1982	100 gal	Steel	
197	Underground Storage Tank	f	758	Active	1982	185 gal	Steel	Waste Oil
198	Vehicle Wash Rack	a	759					
199	Oil/Water Separator	f	759	Active	1982	100 gal	Steel	
200	Underground Storage Tank	f	759	Active	1982	185 gal	Steel	Waste Oil
201	Vehicle Wash Rack	a	760					
202	Underground Storage Tank	f	760	Active	1982	185 gal	Steel	Waste Oil
203	Oil/Water Separator	f	760	Active	1982	100 gal	Steel	
204	Vehicle Wash Rack	a	761					
205	Oil/Water Separator	f	761	Active	1982	100 gal	Steel	
206	Underground Storage Tank	f	761	Active	1982	185 gal	Steel	Waste Oil
207	Vehicle Wash Rack	a	762	Duplicate of SWMU/AOC 120				
208	Oil/Water Separator	f	762	Active	1982	100 gal	Steel	
209	Underground Storage Tank	f	762	Active	1982	185 gal	Steel	Waste Oil
210	Vehicle Wash Rack	a	763					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
211	Oil/Water Separator	f	763	Active	1982	100 gal	Steel	
212	Underground Storage Tank	f	763	Active	1982	185 gal	Steel	Waste Oil
213	Vehicle Wash Rack	a	764					
214	Underground Storage Tank	f	764	Active	1982	185 gal	Steel	
215	Oil/Water Separator	f	764	Active	1982	100 gal	Steel	Waste Oil
216	Vehicle Wash Rack	a	765					
217	Underground Storage Tank	f	765	Active	1982	185 gal	Steel	
218	Oil/Water Separator	f	765	Active	1982	100 gal	Steel	Waste Oil
219	Vehicle Wash Rack	a	766					
220	Oil/Water Separator	f	766	Active	1982	100 gal	Steel	
221	Underground Storage Tank	f	766	Active	1982	185 gal	Steel	Waste Oil
222	Hazardous Waste Storage Area	d	769	Former permitted Haz Waste collection facility				
223	Hazardous Waste Storage Area	d	770	Former permitted Haz Waste collection facility				
224	Hazardous Waste Storage Area	d	771	Former permitted Haz Waste collection facility				
225	Hazardous Waste Storage Area	d	772	Former permitted Haz Waste collection facility				
226	Hazardous Waste Storage Area	d	778	Former permitted Haz Waste collection facility				
227	Hazardous Waste Storage Area	d	779	Former permitted Haz Waste collection facility				
228	Underground Storage Tank	f	779	Active	1988	1,000 gal	Fiberglass-Coated Steel	Fuel Slop
229	Hazardous Waste Storage Area	Active	800					
230	Underground Storage Tank	f	800	Active	1984	1,000 gal	Fiberglass	Waste Oil
231	Underground Storage Tank	f	800	Active	1984	1,000 gal	Fiberglass	Waste Oil
232	Underground Storage Tank	Active	800	Active	1984	1,500 gal	Concrete	
233	Oil/Water Separator	f	817					
234	Hazardous Waste Storage Area	Active	856					
235	Drum Storage Area	c	1519	Possible Duplicate of SWMU/AOC 27		300 sq ft		
236	Drum Storage Area	b	1663	RI/FS Site				
237	Drum Storage Area (2)	b	1700					
238	Drum Storage Area (2)	b	1727					
239	Drum Storage Area (2)	a	1798					
240	Drum Storage Area (2)	k	155					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
241	Drum Storage Area	k	155					
242	Hazardous Waste Storage Area	k	371					
243	Washrack	k	96					
244	PCB Spill Area	l	457					
245	Golf Course	l	464					
246	Golf Course Irrigation Tank	l	459					
247	Pipe Line	l	See Figure 1-2 of PR/VSI	From Sewage treatment plant to irrigation tank				
248	Oil/Water Separator	k	463					
249	Underground Storage Tank	k	463					
250	Underground Storage Tank	k	655					
251	Drum Storage Area	k	388					
252	Hazardous Waste Storage Area	k	398					
253	Vehicle Washrack	k	317					
254	Drum Storage Area	k	359					
255	Hazardous Waste Storage Area	k	606					
256	Hazardous Waste Storage Area	k	441					
257	Wash Water Runoff Site	k	575					
258	Wash Water Runoff Site	k	577					
259	Drum Storage Area	k	389					
260	Aboveground Storage Tank	k	389					
261	Drum Storage Area	k	390					
262	Fuel Storage Area	k	390					
263	Underground Storage Tank	k	374					
264	Equipment Storage Area	k	DRMO LOT #3					
265	Metal Plating Sewer Lines	l	See Figure 1-2 of PR/VSI					
266	Drum Storage Area	k	765					
267	Drop Tank Fuel Storage Area	k	605					
268	Vehicle Wash Rack	k	240					
269	Flammable Storage Locker	k	314					
270	Washrack	k	817					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
271	Hazardous Waste Storage Area	k	392					
272	Hazardous Waste Storage Area	k	31					
273	Washrack	k	31					
274	Stock Pile Soil	k	31					
275	Underground Storage Tank	f	Tank Farm #1	Inactive, Decomissioned Tank 1965	1943	25,000 gal	Concrete	Unknown
276	Underground Storage Tank	f	Tank Farm #1	Inactive, Decomissioned Tank 1965	1943	50,000 gal	Concrete	Unknown
277	Underground Storage Tank	f	Tank Farm #3	Removed 1970, Inactive	1943	25,000 gal	Concrete	Unknown
278	Underground Storage Tank	f	Tank Farm #3	Removed 1967, 67-C-3184, Inactive	1943	50,000 gal	Concrete	Unknown
279	Underground Storage Tank	f	Tank Farm #3	Removed 1970, Inactive	1943	50,000 gal	Concrete	Unknown
280	Underground Storage Tank	f	Tank Farm #3	Removed 1970, Inactive	1943	25,000 gal	Concrete	Unknown
281	Underground Storage Tank (2)	f	252	Inactive				Unknown
282	Underground Storage Tank	f	322B	Inactive, Converted to natural gas 73-C-5290			Carbon Steel	Unknown
283	Underground Storage Tank	f	326B	Inactive	1945		Carbon Steel	Unknown
284	Underground Storage Tank (2)	f	347D	Inactive, Tank filled with sank	1948			Unknown
285	Underground Storage Tank (2)	f	399	Inactive	1955	500 gal	Carbon Steel	Unknown
286	Underground Storage Tank	f	733B	Inactive	1980	10,000 gal	Fiberglass	Unknown
287	Underground Storage Tank	f	733C	Inactive	1980	10,000 gal	Fiberglass	Unknown
288	Underground Storage Tank	f	850A	Temporarily closed for repairs - 1990 RI/FS Site	1988	5,000 gal	Fiberglass	Unknown
289	Underground Storage Tank	f	850B	Temporarily closed for repairs - 1990 RI/FS Site	1988	5,000 gal	Fiberglass	Unknown
290	Underground Storage Tank	f	850C	Temporarily closed for repairs - 1990 RI/FS Site	1988	500 gal	Fiberglass	Unknown
291	Oil/Water Separator	f	96					
292	Oil/Water Separator	f	675B					
293	Cleaning Tank	k	130					
294	Drum Storage Area	k	130					
295	Drum Storage Area	k	130					
296	Oil/Water Separator	f	357					
297	Former Asphalt Pavement Plant	e	Northeast of Golf Course					
298	Underground Storage Tank	k	392	Active				Waste Oil
299	Washrack	k	800					
300	Spill Area, East of SWMU/AOC 1	m	746					

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TABLE 4-1
COMPREHENSIVE LIST OF SWMUs AND AREAS OF CONCERN
IDENTIFIED DURING THE PRELIMINARY REVIEW/VISUAL SITE INSPECTION
MCAS EL TORO RFA

SWMU	SMWU TYPE	SOURCE (1)	LOCATION/BUILDING	COMMENTS	DATE	SIZE	MATERIAL	CONTENTS
301	Mark Arrest System	m	East side of Runway 34R					
302	Mark Arrest System	m	West side of Runway 34R					
303	Underground Storage Tank	m	359					
304	Trenches inside Building 359	m	359					
305	Septic Tank	l	601			2,000 gal	Concrete	Sanitary Waste
306	Septic Tank	l	687			2,000 gal	Concrete	Sanitary Waste
307	Septic Tank	l	819		1986	2,200 gal	Concrete	Sanitary Waste

NOTES:
(1) SOURCE:
Current - Based on site visits Jan-Feb 1991
Past - Based on agency records review and miscellaneous records for MCAS El Toro as identified below:
a - Regional Water Quality Control Board, letter to Lt. Rehor (June 23, 1989)
b - SPCC map (no date)
c - Department of Health Services, 1980 Photographs
d - EPA, Region IX, Compliance Inspection Report, May 1987
e - interview
f - UST list EG & G Idaho, Inc., November 1990
i - Department of Conservation, California Division of Oil and Gas, Long Beach
j - Per MCAS El Toro List of Oil/Water Separators
k - Observed during VSI
l - Other
m - Per Navy direction (added during SV)
(2) SWMU/AOC was not able to be accurately located and/or identified from the records review information and the site visits.

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TABLE 4-2
SWMUs AND AREAS OF CONCERN
RECOMMENDED FOR SAMPLING VISIT
MCAS EL TORO RFA

SWMU/ AOC NO.	TYPE	LOCATION/BUILDING
3	Marshburn Channel	See Figure 1-2 of the PR/VSI
4	Bee Canyon Wash	See Figure 1-2 of the PR/VSI
5	Borrego Canyon Wash	See Figure 1-2 of the PR/VSI
6	Landfarming site	NW Bee Canyon Wash
7	Transformer storage area	E of Bee Canyon Wash
8	Abandoned Well 50-3285	West of Bldg. 809
9	Fuel bladder	East of Agua Chinon Wash
11	Agua Chinon Wash	See Figure 1-2 of the PR/VSI
13	Drop Tank Fuel Storage Area	SW of bldgs 114 & 115
14	Drop Tank Storage Area	NW of bldgs 605
15	Wash water runoff site	SW of fueling stations 576
16	Wash water runoff site	NW of fueling stations 574
20	Underground Storage Tank	Bldg 414
26	Hazardous Waste Storage Area	5
27	Hazardous Waste Storage Area	10
30	Drum Storage Area	29
33	Hazardous Waste Storage Area	51
39	Hazardous Waste Storage Area	115
41	Vehicle Wash Rack	127
45	Drum Storage Area	155
46	Vehicle maintenance and parking	163
48	Underground Storage Tank	178
49	Underground Storage Tank	179
57	Underground Storage Tank	189
59	Underground Storage Tank	191
65	Underground Storage Tank	240
66	Oil/Water Separator	240
67 (1)	Drum Storage Area	242
70	Hazardous Waste Storage Area	289
72 (1)	Hazardous Waste Storage Area	296
73	Hazardous Waste Storage Area	297

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TABLE 4-2
SWMUs AND AREAS OF CONCERN
RECOMMENDED FOR SAMPLING VISIT
MCAS EL TORO RFA

SWMU/ AOC NO.	TYPE	LOCATION/BUILDING
76	Oil/Water Separator	297
77	Underground Storage Tank	297
83	Hazardous Waste Storage Area	298
84	Oil/Water Separator	298
85	Underground Storage Tank	298
88	Drum Storage Area	306
90	Former Sewage Treatment Plant	307
91	Underground Storage Tank	314
92	Underground Storage Tank	314
95	Engine Test Cell	324
98	Vehicle Wash Rack	359
99	Drum Storage Area	359
100	TCE Degreasers	359
101	Oil/Water Separator	359
102	Underground Storage Tank	359
107	Hazardous Waste Storage Area	371
110	Vehicle Wash Rack	386
112	Oil/Water Separator	386
113	Underground Storage Tank	386
116	Drum Storage Area	388
120	Vehicle Wash Rack	390
124	Hazardous Waste Storage Area	392
125	Hazardous Waste Storage Area	415
129	Underground Storage Tank	445
130	Drum Storage Area	447
131	Engine Test Cell	447
132	Oil/Water Separator	447
137	Oil/Water Separator	461
138	Drum Storage Area	461
139	Oil/Water Separator	462
144	Drum Storage Area	529

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TABLE 4-2
SWMUs AND AREAS OF CONCERN
RECOMMENDED FOR SAMPLING VISIT
MCAS EL TORO RFA

SWMU/ AOC NO.	TYPE	LOCATION/BUILDING
145	Underground Storage Tank	529
147	Drum Storage Area	602
149	Drum Storage Area	605
151	Oil/Water Separator	605
160	Hazardous Waste Storage Area	636
162	Underground Storage Tank	643
163	Oil/Water Separator	643
164	Vehicle Wash Rack	651
169	Underground Storage Tank	651
171	Hazardous Waste Storage Area	658
172	Hazardous Waste Storage Area	671
173	Oil/Water Separator	671
175	Underground Storage Tank	672
176	Underground Storage Tank	672
179	Oil/Water Separator	673
180	Underground Storage Tank	673
181	Landfarming site	673
186	Hazardous Waste Storage Area	673
187	Underground Storage Tank	674
188	Underground Storage Tank	675
189	Oil/Water Separator	676
193	Oil/Water Separator	716
194	Former Incinerator Site	746
195	Vehicle Wash Rack	758
196	Oil/Water Separator	758
197	Underground Storage Tank	758
198	Vehicle Wash Rack	759
199	Oil/Water Separator	759
200	Underground Storage Tank	759
201	Vehicle Wash Rack	760
202	Underground Storage Tank	760

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TABLE 4-2 SWMUs AND AREAS OF CONCERN RECOMMENDED FOR SAMPLING VISIT MCAS EL TORO RFA		
SWMU/ AOC NO.	TYPE	LOCATION/BUILDING
203	Oil/Water Separator	760
204	Vehicle Wash Rack	761
205	Oil/Water Separator	761
206	Underground Storage Tank	761
208	Oil/Water Separator	762
209	Underground Storage Tank	762
211	Oil/Water Separator	763
212	Underground Storage Tank	763
213	Vehicle Wash Rack	764
214	Underground Storage Tank	764
215	Oil/Water Separator	764
217 (1)	Underground Storage Tank	765
218 (1)	Oil/Water Separator	765
220	Oil/Water Separator	766
221	Underground Storage Tank	766
222	Hazardous Waste Storage Area	769
223	Hazardous Waste Storage Area	770
224	Hazardous Waste Storage Area	771
225	Hazardous Waste Storage Area	772
226	Hazardous Waste Storage Area	778
227	Hazardous Waste Storage Area	779
229	Hazardous Waste Storage Area	800
231	Underground Storage Tank	800
232	Underground Storage Tank	800
233	Oil/Water Separator	817
234	Hazardous Waste Storage Area	856
241	Drum Storage Area	155
242	Hazardous Waste Storage Area	371
243	Washrack	96
244	PCB Spill Area	457
248	Oil/Water Separator	463

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TABLE 4-2
SWMUs AND AREAS OF CONCERN
RECOMMENDED FOR SAMPLING VISIT
MCAS EL TORO RFA

SWMU/ AOC NO.	TYPE	LOCATION/BUILDING
249	Underground Storage Tank	463
250	Underground Storage Tank	655
252	Hazardous Waste Storage Area	398
253	Vehicle Washrack	317
255	Hazardous Waste Storage Area	606
256	Hazardous Waste Storage Area	441
257	Wash Water Runoff Site	575
258	Wash Water Runoff Site	577
260	Aboveground Storage Tank	389
261	Drum Storage Area	390
262	Fuel Storage Area	390
263	Underground Storage Tank	374
264	Equipment Storage Area	DRMO Lot #3
265	Metal Plating Sewer Lines	See figure 1-2 of the PR/VSI
269	Flammable Storage Locker	314
270	Washrack	817
271	Hazardous Waste Storage Area	392
272	Hazardous Waste Storage Area	31
273	Washrack	31
275	Underground Storage Tank	Tank Farm #1
276	Underground Storage Tank	Tank Farm #1
277	Underground Storage Tank	Tank Farm #3
278	Underground Storage Tank	Tank Farm #3
279	Underground Storage Tank	Tank Farm #3
280	Underground Storage Tank	Tank Farm #3
282	Underground Storage Tank	322
283	Underground Storage Tank	326
286	Underground Storage Tank	733
287	Underground Storage Tank	733
291	Oil/Water Separator	96
292	Oil/Water Separator	675

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TABLE 4-2
SWMUs AND AREAS OF CONCERN
RECOMMENDED FOR SAMPLING VISIT
MCAS EL TORO RFA

SWMU/ AOC NO.	TYPE	LOCATION/BUILDING
296	Oil/Water Separator	357
298	Underground Storage Tank	392
300	Spill Area, East of SWMU/AOC 194	746
301	Mark Arrest System (with UST)	East side of Runway 34R
302	Mark Arrest System (with UST)	West side of Runway 34R
303	Underground Storage Tank	359

NOTES:

(1) SWMUs/AOCs 67, 72, 217, and 218 were determined to be located within the boundaries of the RI/FS sites at the Station and were eliminated from sampling visits.

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5.0 SAMPLING VISIT

This section provides a summary of the activities and results of the SV conducted for the RFA at MCAS El Toro. Included in this section is a discussion of the SVWP and the amendments generated to incorporate additional SWMUs/AOCs into the SV and to document field and other conditions and events that resulted in changes to the SVMP. Also presented in this section is a discussion of the field effort required to implement the SVWP, followed by a discussion of the analytical results. (Section 6.0 provides an evaluation of the analytical data, along with recommendations for SWMUs/AOCs included in the SV).

5.1 Sampling Visit Work Plan

A SVWP (JEG, 1992) was prepared for the MCAS El Toro RFA and submitted to the agencies after the PR and VSI were conducted at the Station. The SVWP describes, in detail, the recommended sampling scheme and rationale for the SWMUs/AOCs identified for a sampling visit. This section provides a brief overview of the SVWP. The SVWP is included as Volume V of this report. For further details on the sampling procedures for the RFA, the SVWP should be consulted.

One hundred forty (140) SWMUs/AOCs were recommended for sampling in the SVWP. During the implementation of the SVWP, four SWMUs/AOCs were added to the RFA for sampling, and four SWMUs/AOCs were removed from consideration for sampling. The four SWMUs/AOCs added for a sampling visit (i.e., Numbers 300, 301, 302, and 303) were identified during the field effort and incorporated into the RFA on a fast-track basis so that the results could be presented in this report. The four SWMUs/AOCs deleted from a sampling visit (i.e., Numbers 67, 72, 217, and 218) were determined to be located within the boundaries of RI/FS sites at the Station after a review of additional aerial photographs resulted in the expansion of some of the RI/FS site boundaries. Since these SWMUs/AOCs fall within the revised RI/FS boundaries, they are no longer considered for investigation in the RFA. After adding and deleting four SWMUs/AOCs, the total number of SWMUs/AOCs sampled for the RFA remained at 140.

The locations of the 140 SWMUs/AOCs identified for the RFA sampling visit are shown in Figure 5-1.

5.1.1 Sampling Visit Objectives

The purpose of the RFA SV was to verify whether a release has occurred at a SWMU or AOC. An assessment of the vertical and/or lateral extent of potential contamination, if present at a site, was not an objective of the SV.

Sample collection was limited to subsurface soil in the vadose zone for the following reasons:

- Groundwater is located at a depth of about 100 feet or greater at the Station.

- Air is not identified as a medium requiring sampling at any of the SWMUs/AOCs.

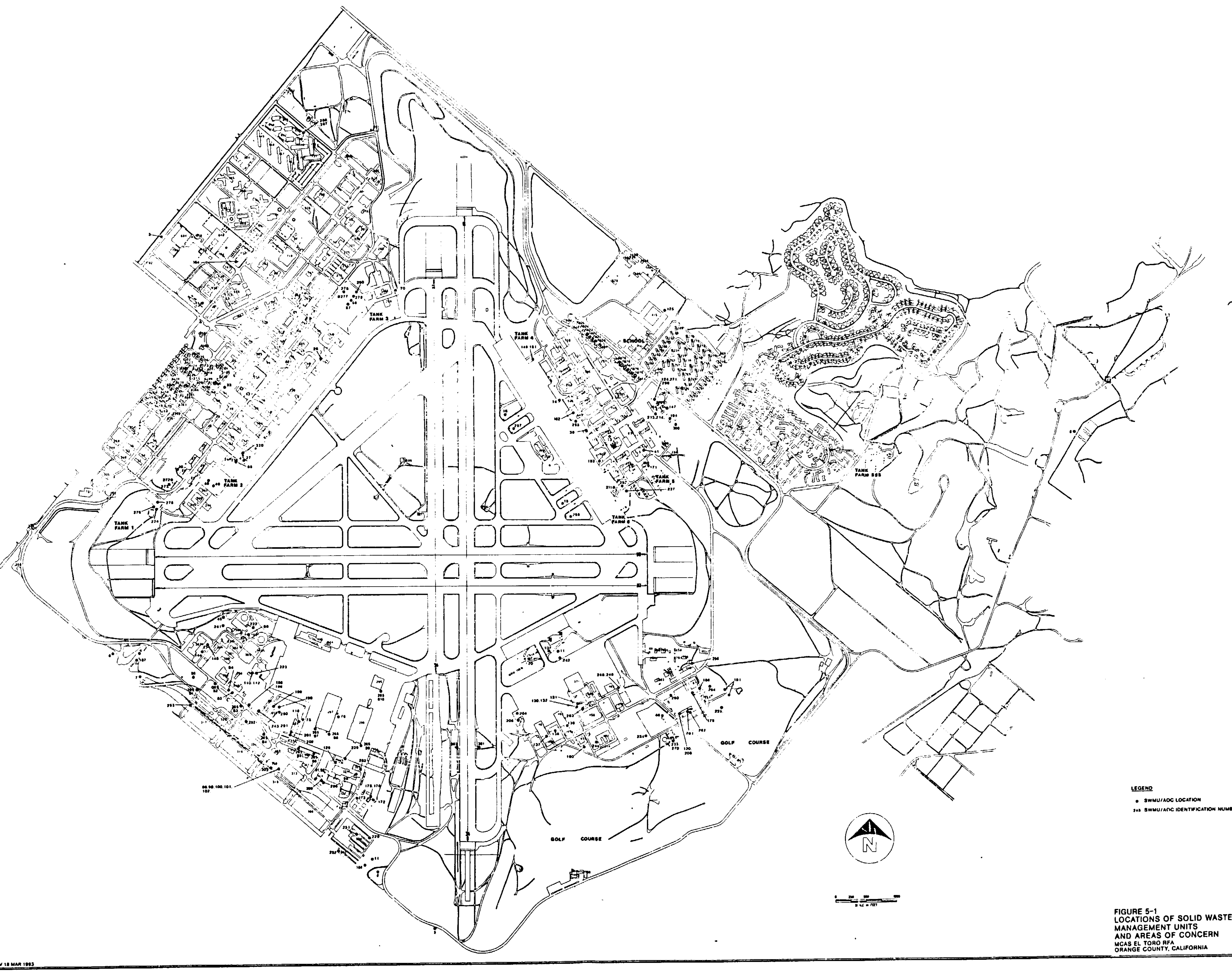

FIGURE 5-1
LOCATIONS OF SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN
MCAS EL TORO RFA
ORANGE COUNTY, CALIFORNIA

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- Surface water in the major drainage channels was not sampled in the RFA, but was scheduled to be sampled in the RI/FS Program.

- Subsurface gas was not sampled in the RFA because subsurface gas releases are not expected at any of the SWMUs/AOCs.

5.1.2 Sampling Rationale

Three basic types of borings were used for sampling at SWMUs/AOCs in the RFA. These included shallow borings 4 to 5 feet in depth, 25-foot deep borings, and 60-foot long angle borings. Typically, one of these types of borings was used at a SWMU/AOC, although in some cases, a combination of the types was used. The sampling strategy was based on judgmental sampling in which sample locations were selected based on where a release from a SWMU/AOC was likely to be detected.

Shallow soil borings (4- to 5-feet in depth) were drilled at SWMUs/AOCs that were unpaved and had a relatively well-defined release area, and at paved SWMUs/AOCs with cracked or defective pavement. Typical SWMUs/AOCs where shallow 5-foot borings were drilled are washracks with cracks, unpaved drum storage areas, and unpaved spill areas. Two soil samples were collected from each shallow boring: one at a depth of 24 inches and another at the bottom of the boring at a depth of 4 to 5 feet.

Soil borings were drilled to a depth of 25 feet at SWMUs/AOCs where shallow borings would not have been adequate for assessing whether a release has occurred. USTs and oil/water separators with a capacity of 2,000 gallons or less were evaluated with a 25-foot deep boring. Soil samples were collected at depths of 5, 10, 15, 20, and 25 feet in these borings.

Angle borings were drilled at SWMUs/AOCs where it was difficult or impossible to drill directly above the potential release area. Angle borings were typically used to evaluate HWSAs, major drainage channels, and USTs with a greater than 2,000 gallon capacity. Angle borings were drilled at a 30 degree angle from the vertical. Each angle boring was 60 feet in length, corresponding to a depth of about 52 feet below ground surface. Soil samples were collected at intervals of 10 feet along the length of the borehole for a total of six samples per angle boring.

5.1.3 Analytical Parameters

Samples collected during the SV were analyzed at the U.S. EPA Level IV and Level V quality standards. Analyses were performed at Contract Laboratory Program (CLP) analytical laboratories. For SWMUs/AOCs where a wide range of wastes may have been managed, the soil samples were analyzed for the following wide range of parameters:

- The entire CLP Routine Analytical Services (RAS) Target Compound List (TCL) for organics and Target Analyte List (TAL) for metals, including volatile and semivolatile organic compounds, metals, pesticides, and polychlorinated biphenyls (PCBs).

- Special Analytical Services (SAS) analyses for Total Petroleum Hydrocarbons (TPH), Total Fuel Hydrocarbons (TFH), and pH. Standards for gasoline and diesel were used for TFH-gasoline and TFH-diesel, respectively.

In addition to these analyses, two SWMUs/AOCs (i.e., Number 194 - former incinerator site, and Number 300 - spill area adjacent to the former incinerator site) were also analyzed for dioxins based on the potential for dioxin formation from the burning of waste material.

For SWMUs/AOCs where petroleum hydrocarbon wastes are the primary chemical of concern, samples were analyzed for TPH (or TFH) and volatile organics only. SWMUs/AOCs such as washracks and USTs fall into this category.

Two SWMUs/AOCs (i.e., Numbers 7 and 244) are areas where a spill of transformer fluid has occurred. For these, soil samples were analyzed for PCBs, TPH, and volatile organics.

A summary of the analyses performed at each SWMC/AOC is provided in Table 5-1.

5.1.4 SVWP Amendments

While the field work for the RFA SV was in progress, several revisions to the SVWP were made. These revisions included:

- o Modifications to the boring locations and/or types of borings at individual SWMUs/AOCs to accommodate field conditions (i.e., presence of underground utilities, change in site access, etc.)
- o Incorporation of four additional SWMUs/AOCs into the RFA SV. These SWMUs/AOCs were identified during the SV.
- o Deletion of four SWMUs/AOCs from sampling. Based on the relocation of some RI/FS site boundaries, four SWMUs/AOCs are now located within RI/FS site boundaries and no longer need to be investigated by the RFA.
- o Miscellaneous modifications to the sampling and analysis procedures as originally described in the SVWP.

5.1.4.1 Amended Sample Locations and/or Boring Types at Individual SWMUs

Prior to drilling, additional review of as-built drawings and geophysical testing were performed at each boring location to assess underground utilities. Each

TABLE 5-1
CHEMICAL ANALYSES AT SWMUs AND AREAS OF CONCERN
MCAS EL TORO RFA

SWMU/ AOC Number	Volatile Organics	Semi-Volatile Organics	TPH	TFH	Pesticides/ PCBs	Metals	Cyanide	Dioxins/ Furans
3	X	X	X	X	X	X		
4	X	X	X	X	X	X	X	
5	X	X	X	X	X	X		
6	X			X				
7	X		X		X			
8	X	X	X	X	X	X		
9	X			X				
11	X	X	X	X	X	X		
13	X			X				
14	X			X				
15	X			X				
16	X			X				
20	X			X				
26	X	X	X	X	X	X		
27	X	X	X	X	X	X		
30	X	X	X	X	X	X		
33	X	X	X	X	X	X		
39	X	X	X	X	X	X		
41	X		X					
45	X	X	X	X	X	X	X	
46	X		X					
48	X		X					
49	X		X					
57	X		X					
59	X		X					
65	X		X					
70	X	X	X	X	X	X		
73	X	X	X	X	X	X		
76	X		X					
83	X	X	X	X	X	X		
84	X		X					
88	X	X	X	X	X	X		
90	X	X	X	X	X	X	X	
91	X		X					
92	X		X					
95	X	X	X	X	X	X		
98	X		X					
99	X	X	X	X	X	X		
100	X		X					

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TABLE 5-1
CHEMICAL ANALYSES AT SWMUs AND AREAS OF CONCERN
MCAS EL TORO RFA

SWMU/ AOC Number	Volatile Organics	Semi-Volatile Organics	TPH	TFH	Pesticides/ PCBs	Metals	Cyanide	Dioxins/ Furans
101	X		X					
102	X			X				
107	X	X	X	X	X	X	X	
110	X		X					
112	X		X					
116	X	X	X	X	X	X		
120	X		X					
124	X	X	X	X	X	X		
125	X	X	X	X	X	X		
129	X		X					
130	X	X	X	X	X	X		
131	X	X	X	X	X	X	X	
132	X		X					
137	X		X					
138	X	X	X	X	X	X		
139	X		X					
144	X	X	X	X	X	X		
145	X		X					
147	X	X	X	X	X	X		
149	X	X	X	X	X	X		
151	X		X					
160	X	X	X	X	X	X		
162	X		X					
164	X		X					
171	X	X	X	X	X	X		
172	X	X	X	X	X	X		
173	X		X					
175	X		X	X				
176	X		X	X				
179	X		X					
181	X			X				
186	X	X	X	X	X	X		
187	X		X					
188	X		X					
193	X		X					
194	X	X	X	X	X	X		X
195	X		X					
196	X		X					
198	X		X					
199	X		X					

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TABLE 5-1
CHEMICAL ANALYSES AT SWMUs AND AREAS OF CONCERN
MCAS EL TORO RFA

SWMU/ AOC Number	Volatile Organics	Semi-Volatile Organics	TPH	TFH	Pesticides/ PCBs	Metals	Cyanide	Dioxins/ Furans
201	X		X					
202	X		X					
204	X		X					
205	X		X					
208	X		X					
211	X		X					
213	X		X					
214	X		X					
220	X		X					
222	X	X	X	X	X	X		
223	X	X	X	X	X	X		
224	X	X	X	X	X	X		
225	X	X	X	X	X	X		
226	X	X	X	X	X	X		
227	X	X	X	X	X	X		
229	X	X	X	X	X	X		
231	X		X					
232	X		X					
233	X		X					
234	X	X	X	X	X	X		
241	X	X	X	X	X	X		
242	X	X	X	X	X	X	X	
243	X		X					
244	X		X		X			
248	X		X					
249	X		X					
250	X		X					
252	X	X	X	X	X	X		
253	X		X					
255	X	X	X	X	X	X		
256	X	X	X	X	X	X		
257	X			X				
258	X			X				
260	X			X				
261	X	X	X	X	X	X	X	
262	X			X				
263	X			X				
264	X		X					
265	X	X	X	X	X	X	X	
269	X		X					

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TABLE 5-1
CHEMICAL ANALYSES AT SWMUs AND AREAS OF CONCERN
MCAS EL TORO RFA

SWMU/ AOC Number	Volatile Organics	Semi-Volatile Organics	TPH	TFH	Pesticides/ PCBs	Metals	Cyanide	Dioxins/ Furans
270	X		X					
271	X	X	X	X	X	X		
272	X	X	X	X	X	X		
273	X		X					
275	X		X	X				
276	X		X	X				
277	X		X	X				
278	X		X	X				
279	X		X	X				
280	X		X	X				
282	X		X	X				
283	X		X	X				
286	X		X	X				
287	X		X	X				
291	X		X					
296	X		X					
298	X		X					
300	X	X	X	X	X	X		X (1)
301	X		X					
302	X		X					
303	X	X	X	X	X	X		

Notes:
(1) Dioxins analyzed only at the 10-foot sample at Boring 1.
VOCs, SVOCs, Pesticides/PCBs, metals, and cyanide analyses done per CLP methodology
TPH analyses done per EPA Method 418.1
TFH analyses done per California Leaking Underground Fuel Tank (LUFT) Manual methodology
Dioxins/Furans analyses done per EPA Method 8280

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SWMU/AOC was also visited to assess the current site conditions and to mark the boring locations. Based on these steps, some boring locations and types were modified to provide a safe drilling environment and to accommodate various changes in field conditions.

Table 5-2 describes revisions made to the sample locations at individual SWMUs/AOCs.

5.1.4.2 New SWMUs and AOCs

Five SWMUs/AOCs were added to the RFA Program during the field investigation activities of the SV. A records review and VSI were performed for each additional site and recommendations for a sampling visit were evaluated. Since these SWMUs/AOCs are not described in previous reports, this subsection discusses available information on the five SWMUs/AOCs; the recommendation for sampling or no further consideration in the RFA; and the sampling strategy implemented at the SWMUs/AOCs recommended for sampling.

SWMU/AOC 300 - Solvent Spill Area

SWMU/AOC 300 is located within the compound of the Marine Calibration Complex 3 (MCC3) compound. This area consists of a large asphalt and concrete parking lot with several mobile vans used to house the unit. MCC3 is responsible for cleaning and calibrating electronic equipment.

SWMU/AOC 300 is located approximately 30 feet south of SWMU/AOC 194, the former incinerator site, and approximately 70 feet northwest of the border of RI/FS Site 3, the Original Landfill. The location of this SWMU/AOC is shown in Figure 5-1.

A potential for subsurface contamination was identified during construction activities in this area during October 1992. An excavation crew reported a strong petroleum odor while digging trenches for a water supply line. The crew also encountered trash in the eastern portion of the trenches. In response to the report of odors, Jacobs Team field personnel visited the construction area to monitor for organic vapors. A photoionization detector (PID) (Hnu meter) indicated elevated levels of organic vapors measured from soil piles removed from the trench. The trenching activities were subsequently halted.

Review of Station records and historical aerial photographs and interviews with Station personnel indicate that the location was formerly a motorpool area. Additionally, it was reported that a solvent (type unspecified) spill had occurred as a result of MCC3 operations.

SWMU/AOC 300 was recommended for a sampling visit. To investigate the subsurface soil at this area, four 25-foot vertical borings were drilled adjacent to the two trenches (see Appendix B for a plot plan showing the location of borings). Samples were analyzed for VOCs, TPH, TFH, SVOCs, pesticides/PCBs, and metals. In addition, the sample from the 10-foot depth at boring 1 was analyzed

TABLE 5-2
AMENDED SAMPLE LOCATIONS

Page 1 of 2

SWMU/AOC	AMENDMENT
91, 92	Figure 34 in the SVWP shows the location of these SWMUs/AOCs incorrectly. They should be located where SWMU/AOC Number 269 is shown. These USTs appear to be approximately 12,000 gallons. The proposed drilling and sampling effort of two 60-foot angle borings for each SWMU/AOC will remain the same.
91	Refusal was encountered at the 20-foot depth at SWMU/AOC 91, angle boring 1. Due to nearby underground utilities and overhead obstructions, the angle boring could not be safely relocated. Therefore, the angle boring was replaced with a 25-foot boring drilled approximately 5 feet from the east edge of the tank.
99	A 60-foot angle boring was originally proposed at SWMU 99 because the SWMU was actively being used as drum storage areas during the time of the VSI. Before the field effort began, the drum storage area became inactive, thus allowing the proposed borings to be replaced with two 25-foot borings.
100	Because of nearby obstructions, the originally-planned 25-foot boring could not be placed close enough to the TCE degreaser inside Building 359 to adequately assess the possibility of a release from this SWMU/AOC. A 60-foot angle boring was substituted for the 25-foot boring to assess the soil beneath the TCE degreaser.
102	During the VSI, several drums were being stored at SWMU/AOC 102. Therefore, a 60-foot angle boring was proposed to collect soil samples from beneath the drum storage area. At the time of the SV, the drums had been removed. Thus, the 60-foot angle boring was replaced with two 25-foot borings.
107	Figure 11 of the SVWP identifies two 25-foot vertical borings at this SWMU/AOC. The type of boring shown in the SVWP was incorrectly identified and should be replaced with two 5-foot borings. The purpose of these borings was to investigate the stained area adjacent to the HWSA.
112, 113	Numerous underground utilities are located adjacent to the oil/water separator and UST at this location. A 60-foot angle boring was substituted for the 25-foot boring originally proposed to enable the drillers to safely drill under the utilities and collect samples from beneath the oil/water separator and UST.
125	This SWMU/AOC is no longer an active HWSA. The HWSA has been dismantled and the stored waste removed since the VSI was conducted in 1991. Since the area is now unpaved, the 60-foot angle boring was replaced with a 25-foot boring placed approximately in the center of the former HWSA.
164, 169	SWMU/AOC 164 is a vehicle washrack and SWMU/AOC 169 is an oil/water separator. SWMU/AOC 169 is partially located beneath SWMU/AOC 164, which is an inactive washrack. Currently, an air compressor unit and a small materials storage shed occupy approximately 80 percent of the wash pad area. Because the oil/water separator and the area occupied by the compressor unit and storage shed are in close proximity, SWMU/AOC 169 was combined with SWMU/AOC 164. The proposed 25-foot borings at each SWMU/AOC were replaced with two 60-foot angle borings slanted beneath the washrack and the oil/water separator.

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TABLE 5-2
AMENDED SAMPLE LOCATIONS

Page 2 of 2

SWMU/AOC	AMENDMENT
263	During the geophysical survey for the SV conducted in August 1992, the capacity of this UST was determined to be approximately 50,000 gallons. The center of the tank was identified by a 4-inch pipe extending approximately 2 feet above the ground surface. The pipe was open to the atmosphere and a liquid surface was visible through the pipe. A petroleum odor was observed near the open pipe and the tank appears to be abandoned in place. Because of the new information regarding the tank size, the proposed sampling effort at this SWMU/AOC was changed from three 5-foot borings to two 60-foot angle borings slanted beneath the UST.
264	Three 5-foot borings were originally proposed at this location. During the boring placement activities for the SV, a large surface stain was identified within the storage yard. Therefore, one additional 5-foot boring was specified at the stain location.
265	Figure 1-1 of the SVWP identifies the abandoned metal plating sewer lines on the north side of South Marine Way. During the geophysical survey, it was determined that the sewer lines are located on the south side of the street. Accordingly, the three 25-foot borings (SWMU/AOC 265 has a total of ten 25-foot borings) were drilled on the south side of South Marine Way, approximately across the street from the locations specified in SVWP Figure 1-1.
269	Figure 34 in the SVWP shows the location of this SWMU/AOC incorrectly. It should be located where SWMUs/AOCs 91 and 92 are shown. Additional investigation has indicated that this SWMU/AOC consists of a 100-gallon UST. Accordingly, the proposed sampling for SWMU 269 included just one 25-foot boring.

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for dioxins to evaluate the presence of dioxin formation and release to soil associated with the former incinerator site (SWMU/AOC 194) located nearby.

SWMUs/AOCs 301 and 302 - Mark 21 Arrest System

The Mark 21 Arrest System, installed during the mid 1970s, is used to capture aircraft in the event of an emergency landing. SWMUs/AOCs 301 and 302 comprise the arrest system, consisting of hydraulic pulley systems (arrest units) located on each side of runway 34R. The SWMU/AOC 301 arrest unit is located on the east side of runway 34R and SWMU/AOC 302 arrest unit is located on the west side. The locations of these SWMUs/AOCs are shown in Figure 5-1.

A steel cable stretches across the runway and the ends are fastened to the arrest units. The arrest system is used in emergency landing situations or to practice aircraft carrier landings. An aircraft using the arrest system will lower its tailhook to snatch the cable in order to bring the aircraft to a stop.

Each arresting unit includes a UST filled with hydraulic fluid, which serves to dissipate the energy of a landing aircraft. The USTs are approximately 500 gallons in size.

SWMUs/AOCs 301 and 302 were recommended for a sampling visit. Two 60-foot angle borings were drilled at each SWMU/AOC and the samples were analyzed for VOCs and TPH.

SWMU/AOC 303 - Underground Storage Tank at Building 359

SWMU/AOC 303 consists of a UST located adjacent to the west side of Building 359. The tank is a waste recovery tank placed beneath the loading dock at Building 359. The tank was installed in 1952 and has a 1,000-gallon capacity. The integrity of the tank could not be observed during the VSI.

SWMU/AOC 303 was recommended for a sampling visit. A 60-foot angle boring was drilled and samples were collected from beneath the tank. Samples were analyzed for VOCs, TPH, TFH, SVOCs, pesticides/PCBs, and metals.

SWMU/AOC 304 - Conduit Trenches Inside Building 359

Building 359 served as an engine preservation facility from the late 1940s through the early 1960s. As part of the operation, two TCE degreaser tanks were located inside the southwest portion of the building. Metal conduit lines connected the degreaser tanks to a UST (SWMU/AOC 303) located just outside the west wall of the building. Since the closure of the degreaser tanks, the conduit lines have been removed. The lines were housed within four concrete trenches that are recessed into the flooring of the building. The trenches cover approximately 200 linear feet, are approximately 2 feet wide, and range in depth from 1 to 3 feet. Square steel plates cover the trenches at the floor surface. During the VSI, the steel plates were removed and the condition of the concrete in the trenches was inspected. The concrete appeared to be free of cracks or defects that would allow liquid to leak beneath the trenches. No stains were observed.

Because the concrete in these trenches is in very good condition (i.e., free of cracks), it is unlikely that a release has or could occur at this SWMU/AOC. A sampling visit was not recommended for SWMU/AOC 304.

5.1.4.3 Elimination of Four SWMUs/AOCs from the SV

After submittal of the SVWP, but prior to implementation of the field work, the RI/FS Program at the Station conducted some additional reviews of aerial photographs. These reviews resulted in the expansion of some of the RI/FS site boundaries. As a result of the revisions to RI/FS site boundaries, some of the SWMUs/AOCs in the RFA now fall within the boundaries of sites being investigated in the RI/FS Program. Accordingly, where this situation occurs, the SWMU/AOC is no longer considered for investigation in the RFA Program at the Station.

The following SWMUs/AOCs were eliminated from a sampling visit:

- SWMUs/AOCs 67, 217, 218. Based on additional aerial photograph review, RI/FS Site 13 boundaries were expanded and currently encompass SWMUs/AOCs 67, 217, and 218. Evaluation of these SWMUs/AOCs in the RFA is no longer required.

- SWMU/AOC 72. This SWMU/AOC now falls within the expanded boundaries of RI/FS Site 7 and will, therefore, not be sampled in the RFA.

5.1.4.4 Amendments to Sampling Procedures

The following changes to sampling procedures were implemented during the sampling program. Most of the changes were made for consistency with modifications that were made under the RI/FS Program (with agency agreement).

1. Soil headspace measurements were taken from samples placed in baggies (or glass jars) or from the area between the adjacent liners in the sampler as the liners were separated.

2. Methanol was used for decontamination purposes rather than hexane.

3. The shallow 5-foot hand auger borings were backfilled with the soil removed from the boring except at sites that required concrete coring. When a shallow 5-foot boring required concrete coring (i.e., washracks), the entire hole was backfilled with concrete.

4. After an underground natural gas line was encountered during drilling at one of the SWMUs/AOCs, the remaining 25-foot and 60-foot angle borings were checked for underground utilities by hand augering the first 5 feet before proceeding with hollow-stem augering.

5. The following sample numbering scheme was used to identify the RFA samples:

AAAxBy-C

where:

AAA	=	SWMU/AOC Number (as many as 3 digits required)	
x	=	Boring type:	H = Hand auger boring A = 60-foot angle boring B = 25-foot boring
B	=	Boring number:	1, 2, 3, etc.
y	=	Sample type:	0 = original 1 = duplicate 2 = rinsate 3 = trip blank
C	=	Sample depth:	1 = shallowest sample 2 = next deeper sample 3 = next deeper sample etc.

As an example, sample number 217H21-2 would be a sample collected at SWMU/AOC Number 217 from hand auger boring number 2. It is a duplicate sample collected at the second depth within the boring.

Note: the following are maximum sample depth numbers by boring type:

Boring Type (x)	Maximum Sample Depth Number (C)
H	2
A	5
B	6

5.1.4.5 Amendments - Analytical Testing

The following modifications were made to the analytical testing described in the original SVWP:

- o The SVWP stated that one trip blank per cooler containing samples for VOCs analysis will be submitted, corresponding to a target of 10 percent frequency for trip blanks. Because of laboratory capacity limitations, three analytical laboratories (rather than one, as planned) were required to perform the organics analyses on the RFA soil samples. With the use of multiple laboratories, the number of trip blanks for the project at one per cooler was higher than planned, and would have resulted in the target frequency for trip blanks for the project being significantly higher than 10 percent. To provide a more reasonable number of trip blank Quality Assurance (QA) samples for the project (i.e., near the 10 percent target), the criteria was changed to one trip blank being submitted for every other cooler containing samples for VOCs analysis shipped to the laboratories.

- o In the SVWP, the TAL compounds (including cyanide) were proposed for analysis at SWMUs/AOCs where a full suite of parameters was planned. This was recommended in the RFA to provide consistency with the RI/FS Program at the Station. After meetings with the agencies, the analysis for cyanide was eliminated from the RI/FS Program for samples planned for TAL compounds, except for those sites where cyanide was specifically thought to be a chemical of concern (COC). For example, an RI/FS site such as the sludge drying beds, which may have received metal plating wastes (and cyanides) in the past, was included for cyanides analysis. Accordingly, the RFA SVWP was amended to limit cyanides analysis at the SWMUs/AOCs listed in Table 5-3.

TABLE 5-3
SWMUs/AOCs WITH CYANIDE ANALYSIS

SWMU/AOC NUMBER	DESCRIPTION	REASON
4	Bee Canyon Wash (at Station exit)	Received metal plating wastes either directly or from discharge from the former sewage treatment plant
90	Former Sewage Treatment Plant	Received metal plating wastes
265	Metal Plating Sewer Lines	Transferred metal plating wastes to the former sewage treatment plant

In addition to the SWMUs/AOCs listed in Table 5-3, several SWMUs/AOCs were analyzed for cyanides, as originally specified in the SVWP, prior to issuance of the SVWP amendments. These SWMUs/AOCs include the following:

- SWMU/AOC 45 - Drum Storage Area
- SWMU/AOC 107 - HWSA
- SWMU/AOC 131 - Engine Test Cell
- SWMU/AOC 242 - HWSA
- SWMU/AOC 261 - Drum Storage Area

In some cases, only a fraction of the samples were analyzed for cyanide because the laboratory was contacted prior to analysis. The results of cyanides analysis at these sites are included in Section 5.3.

- During the field investigation at SWMUs/AOCs 175 and 176 (USTs at Building 672), Station personnel reported to the drilling crews that the USTs at this location had been used to store JP-5. The SVWP specified volatile organics and TPH analyses at these SWMUs/AOCs. Based on this new information, the analysis for TFH (gasoline and diesel) was added to SWMUs/AOCs 175 and 176 to evaluate the sites for leakage of JP-5.

5.2 IMPLEMENTATION OF THE SVWP

The implementation of the SVWP occurred between August and November 1992. This effort included various startup activities prior to drilling and then the performance of the planned sampling visits for SWMUs/AOCs. This section describes the activities involved in implementing the SVWP for MCAS El Toro.

5.2.1 Startup Activities

Various activities took place prior to the start of drilling and sampling for the RFA. Startup activities included planning/coordination with the Station, review of the Station's as-built drawings for underground utilities, geophysical surveying of boring locations, and mobilization of field staff and equipment.

Boring locations were first selected for each SWMU/AOC based on the review of the as-built utility drawings. After initial boring locations were marked in the field based on utility maps, the locations were geophysically surveyed. The purpose of the geophysical survey was to verify/supplement the available information in the Station's as-built drawings. Each SWMU/AOC was investigated using electromagnetic conductivity methods, ground penetrating radar, and metal detectors. These geophysical instruments were only capable of screening for metal objects (e.g., metal or metal-wrapped pipelines, metal or metal-reinforced USTs, etc.). In locations where underground utilities or obstructions were detected near the original boring location, the borehole was relocated or substituted for another boring type.

The boring locations were placed as close as possible to each SWMU/AOC so that representative samples, which indicate whether or not a release had occurred, could be collected. When SWMUs/AOCs were located in a busy area for underground utilities, borings were moved to a location that would provide safety for the drilling and sampling crews.

Figures showing the boring locations and boring types for each SWMU/AOC sampled are presented in Appendix B.

5.2.2 Drilling and Sampling Program

The drilling and soil sampling effort for the RFA took place between September and November 1992. A total of 282 borings were drilled. As previously mentioned, three types of borings were drilled at SWMUs/AOCs: shallow, 5-foot deep borings drilled by hand auger; 25-foot deep borings drilled by hollow-stem auger drilling rigs; and 60-foot angle borings (30 degrees from vertical) also drilled by hollow-stem auger. In general, one or a combination of these type of borings was used at a particular SWMU/AOC.

This subsection briefly summarizes the activities performed during the field effort. The SVWP (JEG, 1992) should be consulted for details of the sampling procedures for the RFA.

5.2.2.1 Hand Auger Borings

A total of one hundred forty (140) 5-foot hand auger borings were drilled. Two soil samples were collected from each shallow boring: one at a depth of 2 feet and the other at the bottom of the boring at a depth of 4 to 5 feet. A list of the SWMUs/AOCs where hand auger borings were drilled is presented in Table 5-4. Hand auger samples that were analyzed for VOCs, TPH, and TFH were collected using a 2-inch diameter, 6-inch-long sampler with a 6-inch-long stainless steel liner. Hand auger samples for analysis for nonvolatile compounds (e.g., metals, pesticides/PCBs, and semivolatile organics) were collected from the auger bucket and put into glass jars.

Typically, the shallow boreholes were backfilled with the soil removed from the boring. At SWMUs/AOCs that required concrete coring (e.g., washracks), boreholes were backfilled with concrete. Per Station requirements, a metal

Table 5-4
Hand Auger Borings
MCAS El Toro RFA

SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
6	Landfarming site	West of Perimeter Rd, NW Bee Canyon Wash	4
7	Transformer storage area	East of Bee Canyon Wash	1
8	Abandoned Well 50-3285	East of Magazine Road, W. of Bldg. 809	3
9	Fuel bladder	East of Agua Chinon Wash	3
14	Drop Tank Fuel Storage Area	SW of Buildings 605 & 606	3
15	Wash water runoff site	SW of direct fueling stations 576 and 577	3
16	Wash water runoff site	SW of fueling stations 574 and 575	4
20	Underground Storage Tank	Fuel Farm/Building 414	2
26	Hazardous Waste Storage Area	MWCS-38 Squadron Supply/Building 5	1
27	Hazardous Waste Storage Area	Aero Club/Building 10	1
33	Hazardous Waste Storage Area	MAG-46 Academic Instruction/Building 51	1
39	Hazardous Waste Storage Area	VMFA-531/Building 115	2
41	Vehicle Wash Rack	MALS-11 Tire Storage/Building 127	2
45	Drum Storage Area	FMD Grounds Equipment Shed/Building 155	3
46	Vehicle maintenance and parking	Station Ordnance Inert Storehouse/Building 163	4
70	Hazardous Waste Storage Area	SOMS Search and Rescue/Building 289	1
90	Former Sewage Treatment Plant Sit	Building 307	9
95	Engine Test Cell	Building 324	3
98	Vehicle Wash Rack	Preservation Facility/Building 359	4
107	Hazardous Waste Storage Area	VMFAT-101/Building 371	2
110	Vehicle Wash Rack	Heavy Duty Vehicle Maintenance Shop/Building 38	4
120	Vehicle Wash Rack	Auto Organizational Shop/Building 390	4
130	Drum Storage Area	Engine Test Cell/Building 447	3
131	Engine Test Cell	Engine Test Cell/Building 447	4

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Table 5-4
Hand Auger Borings
MCAS El Toro RFA

SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
147	Drum Storage Area	MALS-11 Van Maintenance Shop/Building 602	3
181	Landfarming site	MALS-11 GSE South/Building 673	7
186	Hazardous Waste Storage Area	MALS-11 GSE South/Building 673	1
194	Former Incinerator Site	Flight Simulator/Building 746	3
195	Vehicle Wash Rack	FMD Utility Building/Building 758	4
198	Vehicle Wash Rack	FSSG Utility Building/Building 759	4
201	Vehicle Wash Rack	FSSG Utility Building/Building 760	4
204	Vehicle Wash Rack	MAG-11 ACFT Wash Rack Util Building/Building 76	4
213	Vehicle Wash Rack	MALS-11 Utility Building/Building 764	4
242	Hazardous Waste Storage Area	VMFAT-101/Building 371	2
243	Wash Rack	FMD Transport Office/Building 96	4
244	PCB Spill Area	Building 457	3
253	Vehicle Wash Rack	Commissary/Building 317	1
256	Hazardous Waste Storage Area	Building 441	2
257	Wash Water Runoff Site	Buidling 575	3
258	Wash Water Runoff Site	Building 577	3
260	Aboveground Storage Tank	Loading Unloading Ramp/Building 389	2
261	Drum Storage Area	Auto Organizational Shop/Building 390	2
262	Fuel Storage Area	Auto Organizational Shop/Building 390	2
264	Equipment Storage Area	DRMO LOT #3	4
270	Wash Rack	MWR-Rec Wash Building/Building 817	4
273	Wash Rack	Buidling 31	3

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identification plate was placed at the ground surface for each of the borings that were backfilled with concrete.

5.2.2.2 Twenty-Five Foot Borings

Fifty-seven 25-foot borings were drilled at SWMUs/AOCs where shallow borings could not adequately assess whether a release had occurred (e.g., USTs less than 2,000 gallons capacity, sewer lines, and oil/water separators). Table 5-5 lists the SWMUs/AOCs evaluated with 25-foot borings.

Samples were collected at depths of 5, 10, 15, 20, and 25 feet below ground surface (bgs). A 24-inch Modified California Split Spoon sampler equipped with 2 1/2-inch diameter, 6-inch-long stainless steel liners was used to collect samples. The 25-foot boreholes were backfilled with bentonite grout.

5.2.2.3 Sixty-Foot Angle Borings

Eighty-five 60-foot angle borings were drilled at SWMUs/AOCs where it was difficult (or impossible) to drill directly above the potential release area. SWMUs/AOCs such as HWSAs, USTs greater than 2,000 gallons capacity, and drainage channels were evaluated with angle borings. Table 5-6 lists the SWMUs/AOCs evaluated with 60-foot angle borings.

The angle borings were drilled at a 30 degree angle from vertical. Each boring was 60 feet in length, corresponding to a depth of about 52 feet bgs. Samples were collected at intervals of 10, 20, 30, 40, 50, and 60 feet along the length of the boring.

Samples were collected using a 24-inch Modified California Split Spoon sampler equipped with 2-1/2 inch diameter, 6-inch-long stainless steel liner. The boreholes were backfilled with bentonite grout.

5.2.2.4 Soil Boring Logs

Soil borings were logged in the field by the Jacobs Team engineers and geologists. Soil boring logs for the RFA SV are presented in Appendix C. It should be noted that boring logs were prepared for the 25-foot and 60-foot borings, but not for the shallow hand auger borings.

Each soil sample in a boring was classified. The following information was recorded:

- o The depth of each sampling interval, sample type, amount of soil recovered, penetration test results, and head space readings.

- o Samples were examined and visually classified in approximate accordance with American Society for Testing and Materials (ASTM) D 2488.

Table 5-5 25-Foot Borings MCAS El Toro RFA			
SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
13	Drop Tank Storage Area	Building 123	3
65	Underground Storage Tank	Mercury Refuelers/Building 240	1
76	Oil/Water Separator	Building 297	1
84	Oil/Water Separator	Light Duty Vehicle Maintenance Shop/Building 298	1
91	Underground Storage Tank	Heat Plant/Building 314	1
99	Drum Storage Area	Preservation Facility/Building 359	2
101	Oil/Water Separator	Preservation Facility/Building 359	1
102	Underground Storage Tank	Preservation Facility/Building 359	1
125	Hazardous Waste Storage Area	MC Property/Building 415	1
129	Underground Storage Tank	FMD Haz/Flam Storage/Building 445	1
132	Oil/Water Separator	Engine Test Cell/Building 447	1
137	Oil/Water Separator	VMA-242/Building 461	1
139	Oil/Water Separator	VMA-121/Building 462	1
151	Oil/Water Separator	VMFA-314/Building 605	1
162	Underground Storage Tank	FMD Fixed ACFT Start System/Building 643	1
173	Oil/Water Separator	MWSS-373 Bulk Refuelers/Building 671	1
175	Underground Storage Tank	MWSS-373 Refueler Maint. Shop/Building 672	1
176	Underground Storage Tank	MWSS-373 Refueler Maint. Shop/Building 672	1
179	Oil/Water Separator	MALS-11 GSE South/Building 673	1
193	Oil/Water Separator	MALS-11 Hush House/Building 716	1
196	Oil/Water Separator	FMD Utility Building/Building 758	1
199	Oil/Water Separator	FSSG Utility Building/Building 759	1
202	Underground Storage Tank	FSSG Utility Building/Building 760	1
205	Oil/Water Separator	MAG-11 ACFT Wash Rack Utility Building/Building	1

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Table 5-5
25-Foot Borings
MCAS El Toro RFA

SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
208	Oil/Water Separator	MWSG-37 Utility Building/Building 762	1
211	Oil/Water Separator	MAG-11 ACFT Utility Building/Building 763	1
214	Underground Storage Tank	MALS-11 Utility Building/Building 764	1
220	Oil/Water Separator	MWCS-38 Utility Building/Building 766	1
231	Underground Storage Tank	MWSS-373 Motor Pool HQ/Building 800	1
232	Oil/Water Separator	MWSS-373 Motor Pool HQ/Building 801	1
233	Oil/Water Separator	MWR-Rec Wash Building/Building 817	1
248	Oil/Water Separator	Building 463	1
249	Underground Storage Tank	VMFAT-101/Building 463	1
250	Underground Storage Tank	FSSG Field Maint. Shop 655	1
265	Metal Plating Sewer Lines	See Figure 5-1	10
269	Fuel Storage Locker	Heat Plant/Building 314	1
282	Underground Storage Tank	Building 322B	1
283	Underground Storage Tank	Building 326B	1
291	Oil/Water Separator	FMD Transport Office/Building 96	1
296	Oil/Water Separator	FMD Hazardous/Flammable Storage/Building 357	1
298	Underground Storage Tank	GSE North/Building 392	1
300	Excavation Trench	North of Flight Simulator/Building 746	4

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Table 5-6
60-Foot Angle Borings
MCAS El Toro RFA

SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
3	Marshburn Channel	See Figure 5-1	1
4	Bee Canyon Wash	See Figure 5-1	2
5	Borrego Canyon Wash	See Figure 5-1	2
11	Agua Chinon Wash	See Figure 5-1	4
26	Hazardous Waste Storage Area	MWCS-38 Squadron Supply Building 5	1
27	Hazardous Waste Storage Area	Aero Club/Building 10	1
30	Drum Storage Area	NIS Admin (field office)/Building 29	1
33	Hazardous Waste Storage Area	MAG-46 Academic Instruction/Building 51	1
39	Hazardous Waste Storage Area	VMFA-531/Building 115	2
48	Underground Storage Tank	Tank Farm #2/Building 178	2
49	Underground Storage Tank	Tank Farm #2/Building 179	2
57	Underground Storage Tank	Supply Heating Fuel Storage/Building 189	2
59	Underground Storage Tank	Supply Heating Fuel Storage/Building 191	2
70	Hazardous Waste Storage Area	SOMS Search and Rescue/Building 289	1
73	Hazardous Waste Storage Area	VMGR-352/Building 297	1
83	Hazardous Waste Storage Area	Light Duty Vehicle Maintenance Shop/Building 298	1
88	Drum Storage Area	Pipe/Heat Shop/Building 306	2
91	Underground Storage Tank	Heat Plant/Building 314	2
92	Underground Storage Tank	Heat Plant/Building 314	2
100	TCE Degreaser	Preservation Facility /Building 359	1
112	Oil/Water Separator	Heavy Duty Vehicle Maintenance Shop/Building 38	1
116	Drum Storage Area	Field Maintenance Shop/Building 388	1
124	Hazardous Waste Storage Area	GSE North/Building 392	1
138	Drum Storage Area	VMA-242/Building 461	1

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Table 5-6
60-Foot Angle Borings
MCAS El Toro RFA

SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
144	Drum Storage Area	FMD PW Expend WIP Storage/Bulding 529	1
145	Underground Storage Tank	FMD PW Expend WIP Storage/Bulding 529	2
149	Drum Storage Area	VMFA-314/Building 605	1
160	Hazardous Waste Storage Area	MALS-11 Parachute/Surv Shop/Building 636	1
164	Washrack	Exchange Auto Repair/Building 651	2
171	Hazardous Waste Storage Area	MALS-11 Engine Test Cell/Building 658	1
172	Hazardous Waste Storage Area	MWSS-373 Bulk Refuelers/Building 671	1
186	Hazardous Waste Storage Area	MALS-11 GSE South/Building 673	1
187	Underground Storage Tank	Bee Canyon Wash O/W Separator/Building 674	1
188	Underground Storage Tank	Agua Chinon Canyon O/W Separator/Building 675	1
222	Hazardous Waste Storage Area	FMD HW Collection Facility/Building 769	1
223	Hazardous Waste Storage Area	FMD HW Collection Facility/Building 770	1
224	Hazardous Waste Storage Area	MWSG-37 HW Collection Facility/Building 771	1
225	Hazardous Waste Storage Area	FMD HW Collection Facility/Building 772	1
226	Hazardous Waste Storage Area	MAG-46 HW Collection Facility/Building 778	1
227	Hazardous Waste Storage Area	MAG-11 HW Collection Facility/Building 779	1
229	Hazardous Waste Storage Area	MWSS-373 Motor Pool HQ/Building 800	1
234	Hazardous Waste Storage Area	PMO Sentry Building/Building 856	1
241	Drum Storage Area	FMD Grounds Equipment Shed/Building 155, South	1
252	Hazardous Waste Storage Area	Building 698	1
255	Hazardous Waste Storage Area	VMFA-232/Building 606	1
263	Underground Storage Tank	Building 374	2
271	Hazardous Waste Storage Area	GSE North/Building 392	1
272	Hazardous Waste Storage Area	Building 31	1

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Table 5-6 60-Foot Angle Borings MCAS El Toro RFA			
SWMU	TYPE	LOCATION/BUILDING	# OF BORINGS
275	Underground Storage Tank	Tank Farm #1/186	2
276	Underground Storage Tank	Tank Farm #1/187	2
277	Underground Storage Tank	Tank Farm #3/188	2
278	Underground Storage Tank	Tank Farm #3/190	2
279	Underground Storage Tank	Tank Farm #3/193	2
280	Underground Storage Tank	Tank Farm #3/195	2
286	Underground Storage Tank	Building 733B	2
287	Underground Storage Tank	Building 733C	2
301	Mark Arrest System	East Side of Runway 34R	2
302	Mark Arrest System	West Side of Runway 34R	2
303	Underground Storage Tank	Building 359	1

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- Penetration test results are the number of blows from a 140-pound hammer falling 30 inches to drive the sampler each 6-inch increment of the sampling intervals.

- Organic Vapor Analyzers (OVAs) and/or HNu meters were used to measure head space concentrations of organic vapors from the soil samples (see Section 5.2.2.6).

5.2.2.5 Completion of Borings

Boreholes were filled and sealed by grouting upon completion of sampling. The grout was placed by tremie methods inside the augers from the bottom of the borehole to the ground surface. A cement grout mix with 3 to 5 percent bentonite was specified. The grouting of each borehole was performed by Beylik Drilling and observed by the Jacobs Team staff. Hand auger borings drilled for the RFA were typically backfilled with the soil removed from the boring.

5.2.2.6 Soil Vapor Headspace Analysis

An OVA and PID (HNu meter) were used to measure head space concentrations of organic vapors from soil samples. Head space measurements were taken at every sample and recorded on the field boring logs. Head space concentrations were measured from soil samples placed in plastic baggies (or glass jars) or from the area between the adjacent liners in the sampler as the liners were separated.

Each OVA and HNu meter was calibrated at the beginning and end of each day. Calibration measurements were recorded in equipment calibration logbooks.

5.2.2.7 Health and Safety Procedures

The RFA Health and Safety Plan (HSP) was followed throughout the duration of the field work. Hand augering and drilling activities were conducted in Level D protection. The air at the work area was continually monitored for VOCs using OVAs, Hnu meters, combustible gas/oxygen indicators, and a Mini-Ram dust monitor. Personal protective equipment (PPE) was upgraded, when necessary, according to the guidelines in the HSP. Before drilling, plastic was placed over the sampling location, and exclusion, contamination reduction, and support zones were designated.

5.2.2.8 Surveying

Field survey measurements of the RFA boring locations at the Station were obtained between October 1992 and January 1993. The survey was conducted to locate the borings in the horizontal plane. An electronic distance measuring theodolite was used to create a secondary traverse throughout the Station. The coordinate values derived from this survey are based on the monuments shown on the "MCAS El Toro - G.P.S. Aerial Control Project" prepared by Johnson-Frank & Associates, Inc., completed November 1990, and are on the California State Plane Coordinate System, Zone VI, NAD27.

5.2.2.9 Waste Management

As described in the Waste Management Plan (WMP), four types of waste were generated as part of the RFA SV:

- Decontamination Water
- Disposable PPE
- Miscellaneous Nonhazardous Trash
- Soil Cuttings

Decontamination water was produced during cleaning of the drilling and sampling equipment. This water was generated primarily at the on-Station decontamination pad constructed for the project. The decontamination water from the RFA was stored and managed under the ongoing RI/FS Program at the Station due to the small amount of water generated by the RFA in comparison to the RI/FS Program. Decontamination water from the RI/FS Program is passed through GAC and is sent to the Station's golf course where it is used as irrigation water.

Used PPE was generated at each site. This equipment consists of used Tyvek suits, rubber gloves, respirator cartridges, and other disposable gear associated with potentially hazardous environmental sampling. The gear was contained in plastic trash bags at each boring site. At the end of each day, the bags were sealed, labeled, and moved to a roll-off bin designated specifically for PPE. No other waste was mixed with the PPE waste.

Nonhazardous trash was also generated as part of the project. This included paper, wrappers, cups, and plastic not directly associated with sampling. This material was not tracked as potentially hazardous waste, and was disposed of in a solid waste receptacle onsite.

Soil cuttings were produced as part of the drilling operations. Hand auger borings were back-filled with soil cuttings resulting from augering. Therefore, no waste drill cuttings were produced from these borings. At several hand auger sites, extra soil resulted when full compaction was unattained in the boreholes. These soil cuttings were contained in 55-gallon drums which were transferred and stored at the Waste Accumulation Area (WAA).

Soil cuttings produced during hollow-stem auger drilling operations were collected in eight steel roll-off bins located in the WAA. Each bin was filled to approximately 50 percent of the bin volume with soil cuttings from the SWMUs/AOCs. The bins were sampled in accordance with the RFA WMP. In addition to these bins, there are 38 drums containing soil cuttings from SWMUs/AOCs where field instruments indicated the potential for contamination. The soil in these drums was evaluated with the laboratory analytical results for the soil samples collected at the borings at these SWMUs/AOCs. Bins or drums that were shown to contain hazardous waste are being handled appropriately by Beylik Drilling. Nonhazardous waste has been disposed of at Bee Canyon Landfill.

5.3 Analytical Results - RFA Sampling Visit

This section presents a summary of the analytical results for the RFA, including Quality Control (QC) and background samples.

5.3.1 Sampling Visit Analytical Results

Two hundred eighty-two borings were drilled and nearly 1,300 samples, including QC samples, were analyzed as part of the RFA sampling program. A summary of the analytical results for each SWMU/AOC is presented in Appendix A. (It should be noted that this report does not present a copy of the original laboratory results because of the extremely large volume of data that was produced by this project).

For VOCs, SVOCs, TPH/TFH, and pesticides/PCBs, only quantified analytical results are presented in the Appendix A table (i.e., analytes detected above the Contract Required Detection Limit (CRDL) or estimated values below the CRDL but above the method detection limit [as indicated by a "J" flag]). For metals, only those concentrations above the background threshold concentrations are reported in the table. Tentatively identified compounds (TICs) are not included in the table.

Two categories with a limited number of analyses had analytical results for all samples below the detection limits:

- o Cyanide. Soil samples were analyzed for cyanide at the SWMUs/AOCs described in Section 5.1.4.5. In all of the samples analyzed for cyanide at these SWMUs/AOCs, cyanide was not detected above the detection limit.

- o Dioxins. Soil samples were analyzed for dioxins at two sites: SWMU/AOC 194 - the former incinerator site (six samples), and SWMU/AOC 300 (one sample). In all of these samples, dioxins were not detected above their respective detection limits.

5.3.2 QC Sampling Results

Field duplicates, equipment rinsate blanks, trip blank, and laboratory QC samples (matrix spike/matrix spike duplicates [MS/MSDs]) were collected during the RFA field work to assess QC. QC samples were collected in accordance with the frequency specified in the SVWP (and amendments as discussed in Section 5.1.4 of this document). The results for the equipment rinsate blanks and trip blanks are discussed below. Laboratory blanks prepared and analyzed by the laboratories also are discussed in this section. The results of the field duplicate samples are included with the site-specific analytical results in Appendix A.

Field Duplicates

Field duplicates were collected and analyzed on a minimum of 10 percent of the samples. For shallow soil samples (hand auger holes), duplicate samples were collected by splitting soil recovered in auger buckets. For soil samples collected in drive samples (hand auger holes) or core samples (hollow stem auger holes), the deepest and next-to-deepest sample sleeve were collected as duplicates. If insufficient sample volume existed, a duplicate was collected in a successive driven or cored sample.

Rinsate Samples

Equipment rinsate samples were prepared and analyzed on a minimum of 5 percent of the number of soil samples collected. Rinsate samples were prepared by rinsing the soil sampling equipment with high performance liquid chromatography (HPLC)-grade deionized water. After normal decontamination procedures, the HPLC-grade water was poured through the sampling equipment (e.g., split-spoon samplers and hand auger equipment) and collected in sample containers.

Sixty-five rinsate samples were collected from the hand auger core samplers and hollow-stem auger split-spoon samplers. Table 5-7 summarizes the analytical results of the rinsate samples. As shown in this table, acetone, methylene chloride, chloroform, methyl chloride, toluene, bromodichloromethane, dibromochloromethane, phthalate esters, and phenol were detected in at least one equipment rinsate blank sample. All other compounds (excluding TICs) were not detected above their respective detection limits.

Laboratory QC Sampling (MS/MSDs)

MS/MSD samples were collected on a minimum of 5 percent of the samples (including duplicates and blanks) to assess the precision and accuracy of the analytical procedures on varying soil conditions. MS/MSDs required an additional soil volume and were collected in the same manner as duplicate samples.

Laboratory (method) blanks were analyzed by the laboratories to assess whether contamination to the samples is introduced by the laboratories. Method blanks results were evaluated during data validation to qualify the analytical results.

Trip Blanks

Trip blanks were sent in approximately every other cooler containing samples for VOCs analysis. The trip blanks were prepared by the laboratory, sent to the field trailer, and returned to the laboratory in coolers with samples collected for VOCs analysis. Trip blanks were not exposed to field conditions.

Ninety trip blanks were placed in sample shipping coolers to assess the potential for cross-contamination of samples. Trip blanks were analyzed for VOCs only. The analytical results for the trip blanks are presented in Table 5-8. Methylene chloride, acetone, chloroform, xylene, toluene, and 1,1,1-TCA were detected in at least one trip blank. All other compounds (excluding TICs) were not detected above their respective detection limits.

Table 5-7
Summary of Equipment Rinsate Blanks
MCAS El Toro RFA

Sample Number	Concentrations in Rinsate Blanks (ug/l)								
	Volatile Organics				Semivolatile Organics				
	Acetone	Methylene Chloride	Chloroform	Other VOCs	Bis(2-Ethylhexyl) Phthalate	Di-n-butyl Phthalate	Diethyl Phthalate	Butylbenzyl Phthalate	Phenol
004A12-6	14	7 BJ *	ND	Methyl Chloride-2 J	ND	ND	ND	ND	ND
004A22-6	ND	23 B *	ND	ND	ND	ND	ND	ND	ND
005A22-6	13	6 BJ *	ND	ND	ND	ND	ND	ND	ND
007H12-2	ND	4 BJ *	1 J	ND	NA	NA	NA	NA	NA
008H32-2	16 B *	10 B *	3 J	ND	0.8 J	1 BJ	ND	ND	ND
011A22-6	ND	12 B *	2 J	ND	ND	ND	ND	ND	ND
011A32-6	ND	8 B	ND	Methyl Chloride-2	12	ND	ND	ND	ND
013B12-5	ND	4 BJ *	2 J	ND	NA	NA	NA	NA	NA
026A12-6	ND	8 BJ *	ND	ND	ND	ND	ND	ND	ND
033H12-1	10	3 BJ *	5 J	Bromodichloromethane-3 J Dibromochloromethane-1 J	7 BJ	1 BJ	ND	ND	ND
039A22-6	9 BJ *	8 BJ *	3 J	ND	ND	0.8 BJ	4 BJ	ND	ND
045A32-2	ND	12 B *	ND	ND	1 BJ	ND	ND	ND	ND
059A12-6	ND	4 B *	ND	ND	NA	NA	NA	NA	NA
070A12-6	ND	2 B *	ND	Methyl Chloride-1 J	ND	ND	ND	ND	ND
070H12-2	17	6 BJ *	2 J	ND	ND	ND	ND	ND	ND
073A12-6	ND	7 BJ *	ND	ND	ND	ND	ND	ND	ND
083A12-6	ND	4 BJ *	ND	ND	ND	ND	ND	ND	ND
088A12-6	ND	4 BJ *	ND	ND	ND	1 BJ	2 BJ	ND	ND
090H92-1	ND	5 BJ *	ND	ND	0.7 BJ	0.7 BJ	ND	ND	ND
099B22-5	ND	4 BJ *	ND	ND	6 BJ	ND	ND	ND	ND
110H42-2	ND	10 B *	2 J	Toluene-1 J	NA	NA	NA	NA	NA
130H32-2	ND	4 BJ *	ND	ND	ND	ND	ND	ND	ND
131H42-2	ND	5 BJ *	ND	ND	ND	ND	ND	ND	ND
138A12-6	7 BJ *	14 B *	3 J	ND	0.6 BJ	ND	ND	0.8 J	ND
144A12-6	ND	3	ND	ND	ND	ND	ND	ND	ND
145A12-6	ND	0.6 J	ND	ND	NA	NA	NA	NA	NA
145A22-6	ND	0.6 J	ND	ND	NA	NA	NA	NA	NA
160A12-6	ND	2 BJ *	2 J	ND	ND	ND	ND	ND	ND

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Table 5-7
Summary of Equipment Rinsate Blanks
MCAS El Toro RFA

Sample Number	Concentrations in Rinsate Blanks (ug/l)								
	Volatile Organics				Semivolatile Organics				
	Acetone	Methylene Chloride	Chloroform	Other VOCs	Bis(2-Ethylhexyl) Phthalate	Di-n-butyl Phthalate	Diethyl Phthalate	Butylbenzyl Phthalate	Phenol
164A22-6	ND	0.5 BJ *	ND	Methyl Chloride-1 J	NA	NA	NA	NA	NA
171A12-6	ND	6 BJ *	3 J	ND	ND	ND	ND	ND	ND
172A12-6	ND	2	ND	ND	ND	ND	ND	ND	ND
173B12-5	ND	2 B *	ND	ND	NA	NA	NA	NA	NA
176B12-5	ND	1 B *	ND	Methyl Chloride-3	NA	NA	NA	NA	NA
179B12-5	ND	4	ND	ND	NA	NA	NA	NA	NA
186A12-6	6 BJ *	5 BJ *	1 J	ND	ND	0.8 BJ	0.6 BJ	2 J	ND
186H12-2	6 BJ *	2 BJ *	5 J	Bromodichloromethane-3 J Chlorodibromomethane-1 J	ND	6 BJ	ND	ND	0.7 J
188A12-6	ND	5 B	ND	Methyl Chloride-16	NA	NA	NA	NA	NA
194H12-2	8 BJ *	5 BJ *	2 J	ND	0.5 J	0.5 BJ	ND	ND	ND
196B12-5	ND	8 BJ *	2 J	ND	NA	NA	NA	NA	NA
198H22-2	10 B *	12 B *	4 J	ND	NA	NA	NA	NA	NA
199B12-5	ND	2 B	ND	ND	NA	NA	NA	NA	NA
204H22-2	ND	2	2	ND	NA	NA	NA	NA	NA
205B12-5	ND	4	2	ND	NA	NA	NA	NA	NA
213H22-2	5 BJ *	4 BJ *	3 J	ND	NA	NA	NA	NA	NA
214B12-5	ND	7	2	ND	NA	NA	NA	NA	NA
220B12-5	ND	2 B *	ND	ND	NA	NA	NA	NA	NA
223A12-6	ND	1 J	ND	ND	ND	ND	ND	ND	ND
224A12-6	7 BJ	5 BJ *	ND	ND	ND	ND	ND	ND	ND
225A12-6	9 BJ *	5 BJ *	ND	ND	1 J	0.9 J	ND	ND	ND
227A12-1	ND	0.5 J	2	ND	ND	ND	ND	ND	ND
229A12-4	ND	0.5 J	ND	ND	ND	ND	ND	7 J	ND
231B12-5	ND	6 BJ *	ND	ND	NA	NA	NA	NA	NA
234A12-6	ND	6	0.8 J	ND	3 J	ND	ND	ND	ND
244H32-2	ND	5 BJ *	3 J	ND	NA	NA	NA	NA	NA
249B12-5	ND	11 B *	ND	ND	NA	NA	NA	NA	NA
255A12-6	3 J	5 BJ *	ND	ND	ND	ND	ND	ND	ND
263A22-6	ND	12 B *	ND	ND	NA	NA	NA	NA	NA

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Table 5-7
Summary of Equipment Rinsate Blanks
MCAS El Toro RFA

Sample Number	Concentrations in Rinsate Blanks (ug/l)								
	Volatile Organics				Semivolatile Organics				
	Acetone	Methylene Chloride	Chloroform	Other VOCs	Bis(2-Ethylhexyl) Phthalate	Di-n-butyl Phthalate	Diethyl Phthalate	Butylbenzyl Phthalate	Phenol
265B52-5	ND	19 B *	ND	Methyl Chloride-2	ND	ND	ND	ND	ND
265B72-5	ND	6 B *	ND	Methyl Chloride-2	ND	ND	ND	ND	ND
275A22-6	14	11 B *	ND	Methyl Chloride-13	NA	NA	NA	NA	NA
276A22-6	8 J	10 B *	ND	Methyl Chloride-16	NA	NA	NA	NA	NA
280A22-6	ND	11 B	ND	ND	NA	NA	NA	NA	NA
287A22-6	8 J	7 BJ *	ND	ND	NA	NA	NA	NA	NA
291B12-5	ND	ND	ND	ND	NA	NA	NA	NA	NA
300B22-5	ND	5 BJ *	2 J	ND	ND	0.5 BJ	ND	ND	ND

NOTES:

B = Compound also detected in laboratory blank
J = Estimated value below CRDL
NA = Not Analyzed
ND = Below CRDL
* = Qualified as "not detected" by data validation due to laboratory-introduced contamination

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Table 5-8
Summary of Trip Blank Results
MCAS El Toro RFA

Sample Number	Concentrations in Trip Blanks (ug/l)			
	Acetone	Methylene Chloride	Chloroform	Others
004A13-6	12	6 BJ *	ND	--
004A23-6	8 J	7 BJ *	ND	--
006H23-2	ND	0.7 BJ *	ND	--
007H13-2	ND	1 BJ *	ND	--
008H33-2	12 B *	7 BJ *	ND	--
011A13-6	ND	7 BJ *	ND	--
011A23-6	ND	5 BJ *	ND	--
011A43-6	ND	4 B *	ND	--
014H33-2	ND	0.6 BJ *	ND	--
015H33-2	ND	16 B *	ND	--
016H43-2	ND	ND	ND	
020H23-2	ND	0.4 BJ *	ND	--
026A13-6	ND	12 B *	ND	--
027A13-6	ND	4 BJ *	ND	--
027H13-2	ND	5 BJ *	ND	--
030A13-6	ND	12 B	ND	--
033A13-6	ND	0.6 BJ *	ND	--
033H13-1	ND	3 BJ *	ND	--
039A23-6	10 B *	4 BJ *	1 J	--
041H23-2	ND	18 B *	ND	--
046H43-2	ND	2 BJ	ND	--
048A23-6	ND	3 B *	ND	--
049A23-6	ND	5 B *	ND	--
057A23-6	ND	3 B *	ND	--
070A13-6	ND	0.8 BJ *	ND	--
073A13-6	5 J	19 B *	ND	--
076B13-5	ND	12 B *	ND	--
084B13-3	ND	5 B *	ND	--
084B13-5	ND	4 B *	ND	--
088A13-6	ND	2 BJ *	ND	--
088A23-6	11 B *	4 BJ *	ND	--
091A23-6	ND	8 B *	ND	--
099B23-5	ND	7 BJ *	1 J	--
102B13-5	ND	7 BJ	ND	--
110H43-2	ND	3 BJ *	ND	--
124A13-6	8 BJ *	5 BJ *	ND	--
131H43-2	ND	3 BJ *	ND	--
137B13-5	ND	0.6 J	ND	--
138A13-6	7 BJ *	5 BJ *	ND	--
145A13-6	ND	ND	ND	--
145A23-6	ND	0.6 J	ND	--
151B13-5	ND	0.5 J	ND	--
160A13-6	8 J	1 BJ *	ND	--
164A23-6	ND	5 B *	ND	--

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Table 5-8
Summary of Trip Blank Results
MCAS El Toro RFA

Sample Number	Concentrations in Trip Blanks (ug/l)			
	Acetone	Methylene Chloride	Chloroform	Others
171A13-6	ND	3 BJ *	ND	--
175B13-5	ND	ND	ND	--
186A13-6	12 B *	4 BJ *	ND	--
188A13-6	ND	11 B	ND	--
193B13-5	ND	4 B *	ND	--
195H43-2	ND	0.8 J	ND	--
198H43-2	8 BJ *	3 BJ *	ND	--
202B13-5	ND	10 B	ND	--
205B13-5	ND	9	ND	--
211B13-5	ND	ND	ND	--
223A13-6	ND	12	ND	--
224A13-6	ND	4 BJ	ND	--
227A13-6	ND	0.5 J	ND	--
229A13-6	ND	12	ND	--
231B13-5	ND	13 B *	ND	--
232B13-5	ND	11	ND	--
233B13-5	ND	25 B	ND	--
243H43-2	ND	ND	ND	--
244H33-2	ND	ND	ND	--
248B13-5	10	9 BJ *	ND	--
252A13-6	ND	ND	ND	--
258H33-2	ND	16 B *	ND	--
261H23-2	ND	2 BJ *	ND	--
263A13-6	ND	7 BJ *	ND	--
264H43-2	ND	6 BJ *	ND	--
265B13-5	ND	12 B	ND	--
265B23-5	ND	4 B *	ND	--
265B43-5	ND	9 B *	ND	--
265B83-5	ND	4 B *	ND	--
265B93-5	ND	4 B *	ND	--
270H43-2	13 B *	11 B *	ND	--
271A13-6	ND	4 BJ *	ND	1,1,1-Trichloroethane-2 J
272A13-6	ND	20 B	ND	--
276A13-6	5 J	5 BJ *	ND	--
276A23-6	8 J	13 B *	ND	--
278A13-6	12	8 BJ *	ND	--
279A23-6	14	9 BJ *	ND	--
280A13-6	ND	6 BJ *	ND	Xylene-3 J Toluene-4 J
282B13-5	ND	6 BJ *	ND	--
283B13-5	6 BJ *	12 B *	ND	--
286A13-6	ND	6 BJ *	ND	--
298B13-5	ND	11	ND	--
300B23-5	8 J	45 BJ *	11	--

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Table 5-8
Summary of Trip Blank Results
MCAS El Toro RFA

Sample Number	Concentrations in Trip Blanks (ug/l)			
	Acetone	Methylene Chloride	Chloroform	Others
300B43-5	5 J	66 BJ *	ND	- -
301A13-6	9 J	5 BJ *	6 J	- -
303A13-5	10	3 BJ *	ND	- -

NOTES:
ND = Below CRDLs
* = Qualified as "not detected" by data validation due to laboratory-introduced contamination

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5.3.3 Laboratories

Samples collected during the SV were analyzed by four CLP laboratories:

- o CH2M HILL, Redding Laboratory, Redding, CA
- o Enseco, West Sacramento, CA
- o IT Analytical, Inc., Cerritos, CA
- o S-Cubed, San Diego, CA

Due to the large volume of samples collected during the SV and laboratory analysis capacity constraints, the samples were divided among the laboratories. Table 5-9 lists the analyses performed by each laboratory.

Samples were analyzed at EPA Level IV and V quality standards. Analytical methods which follow CLP RAS procedures were analyzed at EPA Level IV quality standards. CLP RAS Level IV is characterized by rigorous quality protocols, documentation, and validation. CLP RAS procedures were followed for VOCs, SVOCs, pesticides/PCBs, metals, and cyanide.

CLP procedures do not exist for TPH, TFH, and dioxins/furans. Analyses for these parameters followed SAS procedures and were analyzed at EPA Level V quality standards. These have method-specific protocols, documentation, and validation requirements.

Table 5-9 MCAS EL TORO RFA LABORATORIES	
Laboratory	**Analyses**
CH2M HILL, Redding Lab	Metals, Cyanide
Enseco	CLP VOCs, CLP SVOCs CLP Pesticides, PCBs TPH, TFH - Gasoline and Diesel Metals, Cyanide, Dioxins/Furans
IT Analytical	CLP VOCs, CLP SVOCs CLP Pesticides, PCBs TPH, TFH - Gasoline and Diesel
S-Cubed	CLP VOCs, CLP SVOCs CLP Pesticides, PCBs TPH, TFH - Gasoline and Diesel

5.3.4 Metals Background Samples

To evaluate ambient (naturally occurring) levels of metals in soils at MCAS El Toro, background soil samples were collected. Background soil samples are defined as soil samples collected from off-Station sites that are not impacted by MCAS El Toro activities. The background metals samples were collected during October and November 1992 as part of the MCAS El Toro RI/FS. The background samples consist of shallow soil samples collected at 0-6 and 12-18 inches bgs at 11 sampling locations situated in the foothills north and northeast of the Station.

A statistical analysis was performed on the analytical results to provide concentration for metals that can be considered ambient or background concentrations for soils at MCAS El Toro. Discussion of the results of metals background levels is provided in Section 6.0.

5.3.5 Data Validation

Data validation of the analytical results for the RFA was conducted by two independent data validation contractors:

- o Laboratory Data Consultants, Inc., Carlsbad, CA (organics analyses)
- o CKY, Inc., Torrance, CA (inorganics analyses)

Organic data per CLP methodology was validated per the EPA guidance, Laboratory Data Validation: Functional Guidelines for Evaluating Organic Analyses (EPA, 1988a). Inorganic data per CLP methodology was validated per the EPA guidance, Laboratory Data Validation: Functional Guidelines for Evaluating Inorganic Analyses (EPA, 1988b). The data were reviewed for QC summary data and flagged per EPA Functional Guidelines. Approximately 10 percent of data was checked for raw data per EPA Functional Guidelines.

5.3.6 Tentatively Identified Compounds (TICs)

TICs were reported for volatile and semivolatile analyses performed. These compounds were analyzed by CLP protocol. An evaluation of TICs reported for the RFA is provided in Appendix G.

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6.0 SAMPLING VISIT DATA EVALUATION AND RECOMMENDATIONS

This section presents an evaluation of the sampling visit data and provides recommendations for each of the SWMUs/AOCs sampled under the RFA. Section 6.1 presents a brief overview of the RFA analytical data as it relates to the RI/FS Program at the Station. Section 6.2 presents a discussion of the evaluation criteria used in the RFA, including the analytical results for QC blanks, background metals concentrations for the Station, development of a leaching pathway evaluation model for the Station, and PRGs. Section 6.3 presents an evaluation of the sampling results for the RFA for TPH and volatile organics, semivolatile organics, pesticides/PCBs, and metals with the criteria discussed in Section 6.2. A summary of the recommendations for each SWMU/AOC sampled in the RFA is presented in Section 6.4.

6.1 Overview of RFA Data — SWMUs/AOCs to be Investigated under CERCLA

One hundred forty SWMUs/AOCs were sampled during the SV for the RFA at MCAS El Toro. Soil from SWMUs/AOCs sampled was typically analyzed for TPH (and/or TFH) and volatile organics. Samples from SWMUs/AOCs with the potential for management of a wide variety of wastes were also analyzed for semivolatile organics, metals, and pesticides/PCBs. Specific information on the type of sampling and analyses performed at each SWMU/AOC is provided in Section 5.0.

One of the objectives of the RFA is to identify potential sites (SWMUs/AOCs) for OU-4 in the ongoing RI/FS at the Station, which is investigating the nature and extent of chlorinated VOC-contaminated groundwater migrating from the Station. Table 6-1 presents a summary of the PCE and TCE detected (or estimated below CRDLs) in the RFA soil samples. As shown in this table, only 38 samples (out of nearly 1,300 RFA samples analyzed for volatile organics) show the presence of PCE/TCE detected or tentatively identified. Of these 38, only 5 are above CRDLs. The highest value detected in RFA samples is 130 ug/kg PCE at SWMU/AOC 194 (the former incinerator site). The other detected values are 14 and 76 ug/kg PCE also at SWMU/AOC 194, 26 ug/kg TCE at SWMU/AOC 188 (an oil/water separator at the end of Bee Canyon Wash), and 16 ug/kg PCE at SWMU/AOC 198 (washrack).

Table 6-2 presents a summary of chlorinated VOCs other than PCE and TCE detected (or estimated below CRDLs) in the RFA samples. Only nine samples out of nearly 1,300 RFA samples fall into this category. Two of these nine are above CRDLs: 68 and 130 ug/kg 1,1,2,2-PCA at SWMU/AOC 188 (oil/water separator at Bee Canyon Wash).

The number of RFA samples indicating the presence of chlorinated VOCs at MCAS El Toro is very low. Based on evaluation of the sampling visit data, only one SWMU/AOC (i.e., Number 194 - former incinerator site) is recommended for further action with respect to chlorinated VOCs. For SWMU/AOC 194, two soil samples had PCE concentrations that exceeded the PRG of 65 ug/kg. The further action for SWMU/AOC 194 is recommended to be done in the CERCLA (RI/FS) program at the Station. SWMU/AOC 194 is planned to be included into existing Site 3 (Original Landfill) of the RI/FS via an expansion of the Site 3 boundaries. Site 3 is in OU-2.

Table 6-1
List of SWMUs/AOCs with PCE/TCE
MCAS El Toro RFA

SWMU No.	TYPE	AREA (1)	COMPOUND	# OF VALUES	CONC. of PCE/TCE (ug/kg)
194	Former Incinerator	2	PCE TCE	6 2	3J, 4J, 9J, 14, 76, 130 3J, 5J
213	Wash Rack	2	PCE	4	1J, 2J, 2J, 8J
181	Landfarm Site	3	PCE	1	2J
264	Equipment Storage Area	3	PCE	1	1J
76	Oil/Water Separator	4	TCE	2	3J, 12J
95	Engine Test Cell	4	PCE	2	2J, 3J
110	Wash Rack	4	PCE	1	11J
145	Underground Storage Tank	4	PCE	1	4J
188	Oil/Water Separator	4	TCE PCE	2 1	8J, 26 7J
198	Wash Rack	4	PCE	8	1J, 2J, 2J, 2J, 3J, 5J, 9J, 16
229	Hazardous Waste Storage Area	4	TCE	1	4J
250	Underground Storage Tank	4	PCE	2	2J, 9J
283	Underground Storage Tank	4	TCE	4	1J, 2J, 2J, 3J

TABLE SUMMARY:

13 SWMUs identified PCE/TCE
5 samples > detection limits (CRDL)
33 samples are estimated values below PCE/TCE detection limits (CRDL)

(1) Per Master Plan arrangement - Runways 34R and 34L are about due north and Runways 7R and 7L due east: Area 1 includes the northwest quadrant of the Station. Moving clockwise, Area 2 includes the northeast quadrant, Area 3 covers the southeast quadrant, and Area 4 includes the southwest quadrant.

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Table 6-2
List of SWMUs/AOCs with Chlorinated VOCs other than PCE/TCE
MCAS El Toro RFA

SWMU No.	TYPE	AREA (1)	COMPOUND	# OF VALUES	CONC. (ug/kg)
39	Hazardous Waste Storage Area	2	1,1,1-TCA	3	2J, 2J, 2J
271	Hazardous Waste Storage Area	2	1,1,1-TCA	1	3J
179	Oil/Water Separator	3	Carbon Tetrachloride	1	2J
7	Transformer Storage Area	4	1,1,2,2-PCA	1	2J
188	Oil/Water Separator	4	1,1,2,2-PCA	3	4J, 68, 130

TABLE SUMMARY:

5 SWMUs identified with chlorinated VOCs other than PCE/TCE
2 samples > detection limits (CRDL)
7 samples are estimated values below detection limits (CRDL)

(1) Per Master Plan arrangement - Runways 34R and 34L are about due north and Runways 7R and 7L due east: Area 1 includes the northwest quadrant of the Station. Moving clockwise, Area 2 includes the northeast quadrant, Area 3 covers the southeast quadrant, and Area 4 includes the southwest quadrant.

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SWMU/AOC 300 (spill area, adjacent to SWMU/AOC 194) will also be included into the RI/FS Program at the Station. This SWMU/AOC is located between SWMU/AOC 194 and RI/FS Site 3 (Original Landfill). The expansion of Site 3 boundaries to include SWMU/AOC 194 will also encompass SWMU/AOC 300. It is also likely that the trash observed in the trenches at SWMU/AOC 300 is part of Site 3.

SWMU/AOC 90 (former sewage treatment plant) is currently being evaluated for possible inclusion into the RI/FS Program. SWMU/AOC 90 is located southeast of RI/FS Site 12 (sludge drying beds).

A more detailed description of the evaluation of the sampling visit data is presented in Section 6.3. It should be noted that SWMUs/AOCs with petroleum hydrocarbon contamination only are recommended for further action in a program other than CERCLA.

6.2 Data Evaluation Procedures/Criteria

This section presents a discussion of data evaluation criteria used in the RFA, including QC blanks, background metals concentrations, a leaching potential model for MCAS El Toro, and PRGs. Evaluation of the analytical results for each SWMU/AOC sampled in the RFA is included in Section 6.3.

6.2.1 Qualification of Compounds Detected in QC Blanks

U.S. EPA Guidance recommends that the analytical results for QC blanks be considered in the evaluation of the existence and magnitude of contamination problems (EPA, 1988a; EPA, 1988b). For common laboratory contaminants (such as acetone, methylene chloride, toluene, 2-butanone, and phthalate esters) detected in a sample and also detected in any associated blanks, the results must be qualified as potential laboratory contamination when the sample concentration is less than 10 times the blank concentration. Any other compound detected in the sample, and also detected in any associated blank, must be qualified when the concentration is less than 5 times the blank concentration. A discussion of the QC blanks sampling procedures/results for the SV is presented in Section 5.3.2.

As part of the data validation, an evaluation of laboratory method blanks for volatile organics and semivolatile organics analyses was conducted to qualify the flags for VOCs and SVOCs detected in laboratory method blanks. Compounds at concentrations less than 10 times the blank concentration for common laboratory contaminants and 5 times the levels for other compounds were attributed to laboratory contamination. Table 6-3 presents the maximum VOC concentrations reported in the laboratory method blanks. Table 6-4 presents the maximum SVOC concentrations, by laboratory, reported in the laboratory method blanks.

For example, acetone was detected at 17 B ug/kg in Sample No. 227 A10-4. ("B" indicates that the compound was also detected in the associated laboratory blank.) A concentration of 9 J ug/kg ("J" indicates an estimated value, below the detection limit) was reported in the laboratory blank associated with Sample 227A210-4. Since the concentration of acetone in the sample (17 B ug/kg) is less than 10 times the concentration reported in the laboratory blank (i.e., 10 X 9 or 90 ug/kg), the acetone reported in the sample is attributed to laboratory-introduced contamination.

Equipment rinsate sample results were also used to qualify VOCs detected in soil samples. (Because SVOCs were not prevalent in the equipment rinsate blanks, equipment rinsate results were not used to qualify SVOC analytical results). Following the qualification guidelines discussed above, compounds reported in soil samples at concentrations less than 10 times the rinsate blank concentration for common laboratory contaminants and 5 times the levels for other compounds must be qualified. The maximum VOC concentrations reported in the equipment rinsates collected for the RFA are also shown in Table 6-3.

6.2.2 Background Metals

Samples for evaluating background metals concentrations were collected at 11 locations upgradient (i.e., north/northeast) from the Station. Background samples were collected at the surface and at the 2-foot depth level. The analytical results from these samples were used as the basis for determining background metals concentrations. Since the analytical data were shown to fit a log normal distribution, a statistical evaluation was performed on the analytical results using this type of distribution. An upper tolerance limit (or threshold) concentration was determined for each metal for use as a background concentration for comparison to onsite metals concentrations. In statistical terms, the tolerance limit concentrations represent a 50 percent confidence that 99 percent of background concentrations are less than these values. These criterion values (50 percent confidence that 99 percent of concentrations are less than these values) correspond to the statistical approach used for the RI/FS being conducted at the Station. Therefore, the tolerance limits were selected so that the probability of a naturally occurring ("background") concentration being above the tolerance limit is less than 1 percent. Thus, if a metal concentration observed onsite is less than the upper tolerance limit concentration, there is little evidence to support a conclusion that the value is different from one likely to be observed in background samples.

A memorandum detailing the statistical evaluation is provided in Appendix D. A summary table of the analytical results and a map showing the sampling locations are also provided in Appendix D. The background metals threshold concentrations are presented in Section 6.3.4.

6.2.3 Leaching Pathway Evaluation Model

A leaching pathway evaluation model was developed for MCAS El Toro for the purpose of evaluating contaminant concentrations in the vadose zone which could possibly affect groundwater quality. The El Toro Model (ETM) was adapted from the *Guidance for Assessing Low Probability Hazard Sites at INEL* (USDOE, 1991).

Table 6-3
Maximum Concentrations of Volatile Organics
Detected in Laboratory Blanks and Equipment Rinsate Blanks
MCAS El Toro RFA

Compound	Maximum Laboratory Blan Concentration (ug/l)	Maximum Rinsate Blank Concentration (ug/l)
Acetone	29	17
Methylene Chloride	21	23 B
Chloroform	ND	5 J
Toluene	4 J	ND
4-Methyl-2-Pentanone	6 J	ND
2-Hexanone	10 J	ND
2-Butanone	9 J	ND
1,1,2,2-Tetrachloroethane	2 J	ND
Xylene	4 J	ND
Bromoform	1 J	ND

J = Estimated value below CRDL

B = Compound also detected in laboratory blank

ND = Below CRDL

Note: Table only includes compounds detected in both the blanks and the site samples. Tentatively identified compounds (TICs) are not included.

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Table 6-4
Summary of Laboratory Blanks Results
for Semivolatile Organics
MCAS El Toro RFA

Compound	Maximum Concentration in Blanks (ug/kg)		
	S-Cubed	IT Analytical	Enseco
Diethylphthalate	ND	800	21 J
Di-n-Butylphthalate	ND	88 J	510
Bis(2-Ethylhexyl) Phthalate	210 J	620	370 J
Butylbenzylphthalate	ND	29 J	ND
Naphthalene	ND	91 J	ND
Phenol	ND	120 J	48 J

ND = Less than detection limits (CRDL)

J = Estimated value below detection limits (CRDL)

Note: Table includes maximum laboratory blank concentrations. Table only includes compounds detected in both laboratory blanks and site samples. Tentatively identified compounds (TICs) are not included.

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A similar model is also being used for the RI/FS Work Plan at the Long Beach Naval Complex.

The ETM provides a maximum estimation of potential soil concentrations based on maximum contaminant levels (MCLs) for drinking water. Maximum contaminant concentration values (C_s) in the vadose zone are determined by the following equation.

$$C_s = C_w * K_d * V_a/V_s$$

where,

C_s = concentration of contaminant in soil (mg/kg)

C_w = concentration of contaminant in the aquifer (mg/l)

K_d = soil/water partition coefficient for the contaminant (ml/g)

V_a = $q_a * A_a$, which is assumed to be the volume of water passing through a unit cross-sectional area of the aquifer in 1 year (ft^3/yr)

V_s = $q_v * A_v$, the volumetric rate of pore water passing through a unit surface area of the vadose zone in 1 year (ft^3/yr).

Appendix E provides a detailed description of the model and assumptions used in selecting model parameters. Analytical results were compared to the ETM (C_s) values when evaluating a SWMU/AOC for possible further consideration. Individual tables of the ETM values for VOCs, SVOCs, pesticides/PCBs, and metals are presented in Section 6.3.

6.2.4 EPA Preliminary Remedial Goals (PRGs)

To consider direct exposures from the SWMUs/AOCs, sample analytical results were compared to values published in a draft document from the U.S. EPA entitled *Preliminary Remedial Goals - Table* (U.S. EPA, 1993). A copy of this document is provided in Appendix F. PRGs are health-based concentrations in exposure media that may be used for general risk-screening purposes. The PRGs apply to direct exposure (ingestion and inhalation) of humans to the soil and do not consider groundwater impacts. For MCAS El Toro, PRGs for residential soil are used as an evaluation criteria. A leaching pathway evaluation model was developed for MCAS El Toro (see Section 6.2.3) to address potential groundwater impact.

PRG values considered for this report are for the soil exposure medium only, since sampling in the RFA was limited to soil in the vadose zone (i.e., air and water [surface water and groundwater] were not identified as media requiring sampling at any of the SWMUs/AOCs). The PRG values selected for MCAS El Toro are for residential exposure based on the U.S. EPA standard defaults presented in the PRG document, since these are similar to the conditions present at the Station. The PRG values are based on a target cancer risk of 10^{-6}. PRG values are presented in Section 6.3 for each of the analytical categories except petroleum, which does not have a PRG.

6.3 Evaluation of RFA Sampling Results

This section presents an evaluation of the analytical data for each SWMU/AOC for the following analytical parameters: TPH/volatile organics, semivolatile organics, pesticides/PCBs, and metals. Recommendations for further consideration by analytical parameter are presented in this section. Section 6.4 presents a summary of the recommendations for each SWMU/AOC sampled in the RFA.

6.3.1 TPH and Volatile Organics

Since evaluation of sites with respect to petroleum hydrocarbons requires an evaluation of VOCs such as benzene, toluene, ethylbenzene, and xylene, this section combines the evaluation of SWMUs/AOCs for the analytical parameters of TPH and volatile organics.

Petroleum is composed of a wide variety of individual hydrocarbon compounds; therefore, an ETM or PRG value is not specifically available for petroleum. For this reason, California Leaking Underground Fuel Tank (LUFT) (SWRCB, 1989) action levels for petroleum hydrocarbons of 1,000 mg/kg for diesel (and higher boiling point hydrocarbons) and 100 mg/kg for gasoline are used for evaluation of SWMUs/AOCs at MCAS El Toro, a site where the groundwater is typically about 100 feet deeper than the soil samples that were collected.

In the evaluation of SWMUs/AOCs, the 1,000 mg/kg action level was used if the sample had no benzene, toluene, ethylbenzene, and xylene (BTEX), the primary components in gasoline of environmental concern. In some instances, TFH (gasoline) was detected at a SWMU/AOC, but no BTEX was detected. For these SWMUs/AOCs, the hydrocarbon detected appears to be jet fuel, which overlaps the boiling range for gasoline and diesel, but contains no BTEX.

Table 6-5 provides a summary of the evaluation results for TPH and volatile organics. The following evaluation has been performed for the 140 SWMUs/AOCs sampled during the RFA with respect to TPH and volatile organics.

- o Only two SWMUs/AOCs (Numbers 175 and 194) had volatile organics detected above ETM and/or PRG values. Table 6-6 presents the ETM and PRG values for the VOCs detected in the samples. At SWMU/AOC 175, benzene was detected above the ETM value, and xylene was detected above the PRG value. At SWMU/AOC 194, PCE was detected above the PRG value. Except for SWMU/AOC Numbers 194 and 175, no other SWMUs/AOCs are recommended for further consideration with respect to volatile organics only. This includes chlorinated, as well as nonchlorinated, VOCs.

- o Eighty-four SWMUs/AOCs with TPH <100 mg/kg and all volatile organics below CRDLs are eliminated from further consideration.

- o Four SWMUs/AOCs (Numbers 7, 16, 90 and 129) with TPH < 100 mg/kg and all volatile organics below ETM and PRG values are eliminated from further consideration.

- o Thirty-six SWMUs/AOCs with TPH < 1,000 mg/kg, no BTEX above CRDLs, and all other volatile organics less than ETM and PRG values are considered for elimination from further action. These 36 SWMUs/AOCs include the following:

5	164
9	181
11	188
14	198
20	199
26	213
41	220
48	225
57	231
59	241
84	248
91	260
92	264
100	265
101	269
131	276
147	286
151	301

Of these, however, eight have been included for further action on a case-by-case, judgmental basis as follows:

<u>SWMU/AOC 14 - Drop Tank Fuel Storage Area</u>

To prevent future migration of shallow, moderate level petroleum hydrocarbons, it is recommended that the cracks in the pavement be repaired.

SWMU/AOC 26 - Hazardous Waste Storage Area

Although only moderate petroleum hydrocarbon contamination was present, it is recommended that the stained soil be excavated and that drums not be stored outside of the hazardous waste storage area in the future.

SWMU/AOC 84 - Oil/Water

In a 25-foot boring, all samples were below detection limits, with the exception of a sample at a depth of 10 feet, which is directly adjacent to the bottom of the separator. Although the TPH was less than 1,000 mg/kg, the data may be indicating that the separator is releasing hydrocarbons into the soil. It is recommended that a leak test or an inspection of the oil/water separator be performed.

SWMU/AOC 151 - Oil/Water Separator

In a 25-foot boring, all samples were below detection limits, with the exception of a sample at a depth of 10 feet, which is directly adjacent to the bottom of the separator. Although the TPH was less than 1,000 mg/kg, the data may be indicating that the separator is releasing hydrocarbons into the soil. It is recommended that a leak test or an inspection of the oil/water separator be performed.

Table 6-5
Summary of Evaluation Results for TPH/TFH and Volatiles

Analyses	**Evaluation Rationale**				
TPH/TFH (mg/kg)	< 100	< 100	< 1,000	< 1,000	> 1,000
BTEX	< CRDLs	< ETMs and PRGs	< CRDLs	< ETMs and PRGs	>ETMs/PRGs (1 SWMU)
Other VOCs	< CRDLs	< ETMs and PRGs	< ETMs and PRGs	< ETMs and PRGs	>ETMs/PRGs (1 SWMU)
Recommendations:	NFC	NFC	NFC (1)	NFC (2)	FA (3)
SWMU/AOC Type	**Number of SWMUs/AOCs**				
Wash Racks	7	0	4	1	2
HWSAs/DSAs	35	0	4	0	1
USTs	15	1	10	2	6
Oil/Water Separators	15	0	6	0	1
Others	12	3	12	0	3
Totals:	84	4	36	3	13

NOTES:

TPH/TFH = Total Petroleum Hydrocarbons/Total Fuel Hydrocarbons

BTEX = Benzene, Toluene, Ethylbenzene, and Xylene

VOCs = Volatile Organic Compounds

NFC = No Further Consideration with respect to TPH/TFH and volatile organics

FA = Further Action

CRDLs = Contract Required Detection Limits

(1) On a judgmental, case-by-case basis, eight of these SWMUs/AOCs are recommended for FA based on TPH/TFH and Volatiles (see text)

(2) On a judgmental, case-by-case basis, one of these SWMUs/AOCs is recommended for FA based on TPH/TFH and Volatiles (see text)

(3) On a judgmental, case-by-case basis, one of these SWMUs/AOCs is recommended for NFA based on TPH/TFH and Volatiles (see text)

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Table 6-6
ETM and PRG Values for Volatile Organic Compounds
MCAS El Toro RFA

Compounds	ETM Values (ug/kg)	PRG Values (ug/kg)
Acetone	---	9,200,000
Benzene	508.4	2,700
2-Butanone	---	520,000
Carbon Tetrachloride	861.3	920
Ethylbenzene	3,790,430	68,000
1,1,2,2-Tetrachloroethane	1,433	8,300
Tetrachloroethene (PCE)	14,970	65
Toluene	1,932,770	280,000
1,1,1-Trichloroethane	116,740	49,000
Trichloroethene (TCE)	3,850	34,000
Xylene	13,289,180	99,000 (1)

NOTES:

(1) - For xylene (mixed).

ETM - El Toro Model values, based on the leaching pathway evaluation model.

PRG - U.S. Environmental Protection Agency
Preliminary Remedial Goals, Residential Soil Values.

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SWMU/AOC 198 - Vehicle Washrack

To prevent future migration of shallow, moderate level petroleum hydrocarbons (i.e., < 1,000 mg/kg) and very low levels of PCE (16 ug/kg maximum), it is recommended that the cracks in the pavement be repaired.

SWMU/AOC 199 - Oil/Water Separator

In a 25-foot boring, all samples were below detection limits, with the exception of a sample at a depth of 15 feet, which is near the bottom of the separator. Although the TPH was less than 1,000 mg/kg, the data may be indicating that the separator is releasing hydrocarbons into the soil. It is recommended that a leak test or an inspection of the oil/water separator be performed.

SWMU/AOC 213 - Vehicle Wash Rack

To prevent future migration of shallow, moderate level petroleum hydrocarbons, it is recommended that the cracks in the pavement be repaired.

SWMU/AOC 260 - Aboveground Storage Tank

To prevent future migration of shallow, moderate level petroleum hydrocarbons, it is recommended that the cracks in the pavement be repaired.

Therefore, 28 SWMUs/AOCs are eliminated from further consideration based on the criteria of TPH < 1,000 mg/kg, no BTEX above CRDLs, and all other volatile organics less than ETM and PRG values.

- Three SWMUs/AOCs (Numbers 102, 110, and 250) with TPH < 1,000 mg/kg, and all volatile organics below ETM and PRG values are considered for elimination from further action. Of these, one has been included for further action on a case-by-case, judgmental basis as follows:

  SWMU/AOC 110 - Vehicle Wash Rack

  To prevent future migration of shallow, moderate level petroleum hydrocarbons, it is recommended that the cracks in the pavement be repaired.

  Therefore, two SWMUs/AOCs are eliminated from further consideration based on the criteria of TPH < 1,000 mg/kg, and all volatile organics less than ETM and PRG values.

- One SWMU/AOC (i.e., Number 277) with TPH > 1,000 mg/kg in the top sample only (i.e., TPH = 1050 mg/kg) and all volatile organics below ETM and PRG values was eliminated from further consideration. The results for the five samples collected below this top sample were all less that CRDLs for TPH, TFH, and volatile organics.

Based on the above evaluations, 119 SWMUs/AOCS are eliminated from further consideration with respect to TPH and volatile organics. Therefore, 21 SWMUs/AOCs are recommended for further action based on TPH and volatile organics. Other than the nine SWMUs/AOCs described above, the following twelve SWMUs/AOCs are recommended for further action primarily based on TPH > 1,000 mg/kg: SWMU/AOC Numbers 33, 46, 145, 173, 175, 176, 194, 201, 204, 280, 298, and 300. A summary of all of the SWMU/AOC evaluations and recommendations (including these for TPH and volatile organics) is included in Section 6.4.

6.3.2 Semivolatile Organic Compounds

Semivolatile organics analysis was performed at a total of 52 SWMUs/AOCs. Analytical results for semivolatile organics are evaluated according to the rationale presented below. Table 6-7 provides a summary of the evaluation results for the SWMUs/AOCs analyzed for semivolatile organics.

- o SWMUs/AOCs with all samples below detection limits (including estimated values below the detection limits ["J" flags]), or concentrations less than laboratory method blank criteria are recommended for no further consideration. Forty (40) SWMUs/AOCs meet this criteria. Of these, however, one SWMU/AOC (SWMU/AOC 39) has been recommended for further action on a judgmental basis. An evaluation of this site is provided below:

SWMU/AOC 39 - Hazardous Waste Storage Area

Polynuclear aromatic hydrocarbons (PNAs) (e.g., pyrene, chrysene, and fluoranthene) were present in the 10-foot sample only at angle boring 1. Although these compounds were below detection limits (i.e., they are estimated values), the presence of these relatively immobile compounds in the 10-foot sample may indicate the presence of elevated PNA concentrations in shallow soil. It is recommended that additional soil sampling be performed to assess the potential presence of SVOCs in shallow soil at SWMU/AOC 39.

- o Sample concentrations above detection limits are then compared to the ETM and PRG values. Table 6-8 presents the ETM and PRG values for the SVOCs detected in the samples. Eleven of the twelve remaining SWMUs/AOCs have samples less than the ETM and PRG values and are recommended for no further consideration. These 11 SWMUs/AOCs include the following:

11	171
70	223
90	226
99	271
149	300
160	

Of these 11 SWMUs/AOCs, however, one SWMU/AOC (SWMU/AOC 171) has been recommended for further action on a judgmental basis. An evaluation of

Table 6-7 Summary of Evaluation Results for Semivolatile Organics			
Analyses	**Evaluation Rationale**		
Semivolatile Organics (52 SWMUs/AOCs)	All samples < CRDLs (including estimated values below detection limits ["J" flags])	Sample(s) > CRDLs but below ETM and PRG values	Sample(s) > ETM and/or PRG values
Recommendations:	NFC (1)	NFC (2)	FA (3) (Based on case-by-case evaluation)
SWMU/AOC Type	**Number of SWMUs/AOCs**		
Engine Test Cells	1	0	1
Washes	3	1	0
HWSAs/DSAs	32	8	0
Others	4	2	0
Totals:	40	11	1

NOTES:

(1) SWMU/AOC 39 recommended for Further Action based on case-by-case evaluation.

(2) SWMU/AOC 171 recommended for Further Action based on case-by-case evaluation.

(3) SWMU/AOC 131 recommended for Further Action based on case-by-case evaluation.

CRDL = Contract Required Detection Limit

NFC = No Further Consideration

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Table 6-8
ETM and PRG Values for Semivolatile Organic Compounds
MCAS El Toro RFA

Compounds	ETM Values (ug/kg)	PRG Values (ug/kg)
Anthracene	---	1,900
Benzo(a)anthracene	160,760 (1)	2,900
Benzo(a)pyrene	736,560 (1)	290
Benzo(b)fluoranthene	906,170 (1)	2,900
Benzo(g,h,i)perylene	---	---
Benzo(k)fluoranthene	5,587,400 (1)	2,900
Bis(2-Ethylhexyl)phthalate	150,740	120,000
Butylbenzylphthalate	4,427,720 (1)	16,000,000
Carbazole	---	85,000
4-Chloroaniline	---	310,000
Chrysene	75,370 (1)	290,000
Di-n-Butylphthalate	---	7,800,000
Di-n-Octylphthalate	---	1,600,000
Dibenz(a,h)anthracene	1,104,840 (1)	290
Diethylphthalate	4,417,230 (1)	63,000,000
Dimethylphthalate	---	780,000,000
Fluoranthene	---	3,100,000
Indeno(1,2,3-cd)pyrene	1,473,130 (1)	2,900
2-Methylnaphthalene	---	---
Naphthalene	185,020	80,000
Phenanthrene	---	---
Phenol	569	47,000,000
Pyrene	---	2,300,000

NOTES:

(1) ETM based on proposed Federal MCL.

ETM - El Toro Model values, based on the leaching pathway evaluation model.
PRG - U.S. Environmental Protection Agency
Preliminary Remedial Goals, Residential Soil Values.

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this site is provided below:

SWMO/AOC 171 - Hazardous Waste Storage Area

PNAs (e.g., pyrene, benzo(a)pyrene, chrysene, and phenanthrene) were present in the 10-foot sample only at angle boring A1. Although these compounds were below detection limits (i.e., they are estimated concentrations), the presence of these relatively immobile compounds in the 10-foot sample may indicate the presence of elevated PNA concentrations in shallow soil. It is recommended that additional soil sampling be performed to assess the potential presence of SVOCs in shallow soil at SWMU/AOC 171.

o SWMUs/AOCs with samples above ETM and/or PRG values are evaluated on a case-by-case basis. Recommendations for these SWMUs/AOCs are based on site- and compound-specific characteristics.

Only one SWMU/AOC (SWMU/AOC 131, an inactive engine test cell) has SVOCs above ETM and/or PRG values. An evaluation of this site is provided below:

SWMU/AOC 131 - Engine Test Cell

Four hand auger borings were drilled at separate areas at this site. All samples from HA2, HA3, and HA4 had values below detection limits. At HA1, various PNAs were detected in the 2-foot sample only. All of the compounds detected were below the ETM values, where applicable. One compound, benzo(a)pyrene, was above the PRG value of 290 ug/kg for the original (670 ug/kg) and duplicate (780 ug/kg) samples at the 2-foot depth. The sample collected at the 5-foot depth from this boring was below detection limits.

HA1 is located in an unpaved area. Some soil staining in the area was observed during the VSI. Additional shallow soil sampling in the area of the soil staining is recommended.

Based on the above evaluations, 51 SWMUs/AOCs are eliminated from further consideration based on semivolatile organics analyses. Two SWMUs/AOCs (Numbers 39 and 171) are recommended for further action on a judgemental basis. One SWMU/AOC (Number 131) is recommended for further consideration because an SVOC concentration exceeded a PRG value.

6.3.3 Pesticides/PCBs

Pesticides/PCBs analyses were performed at a total of 54 SWMUs/AOCs. Table 6-9 provides a summary of the evaluation results for the SWMUs/AOCs analyzed for pesticides/PCBs. Analytical results for pesticides/PCBs are evaluated according to the following rationale:

- SWMUs/AOCs with all samples below the detection limits (including estimated values below the detection limits ["J" flags]) are recommended for no further consideration. Forty-two SWMUs/AOCs meet this criteria. Of these, however,

Table 6-9 Summary of Evaluation Results for Pesticides/PCBs			
Analyses	**Evaluation Rationale**		
Pesticides/PCBs (54 SWMUs/AOCs)	All samples < CRDLs (including estimated values elow detection limits ["J" flags]	Sample(s) > CRDLs but below ETM and PRG values	Sample(s) > ETM and/or PRG values
Recommendations:	NFC (1)	NFC (2)	NFC (3) (Based on case-by-case evaluation)
SWMU/AOC Type	**Number of SWMUs/AOCs**		
PCB Storage/Spill Areas	0	1	1
Washes	3	1	0
HWSAs/DSAs	36	4	0
Engine Test Cells	0	2	0
Others	3	3	0
Totals:	42	11	1

NOTES:

(1) SWMU/AOC 88 recommended for Further Action based on case-by-case evaluation.

(2) SWMU/AOC 39 recommended for Further Action based on case-by-case evaluation.

(3) SWMU/AOC 244 recommended for No Further Consideration based on case-by-case evaluation.

CRDL = Contract Required Detection Limit

NFC = No Further Consideration

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one SWMU/AOC (Number 88) has been recommended for further action on a judgmental basis. An evaluation of this site is provided below:

SWMU/AOC 88 - Drum Storage Area

A PCB (Aroclor) was present in the 10-foot sample only at angle boring 2. Although this compound is below the detection limit (i.e., it is an estimated value), the presence of this relatively immobile compound in the 10-foot sample may indicate the presence of elevated concentrations of Aroclor in shallow soil. It is recommended that additional soil sampling be performed to assess the potential presence of Aroclor in shallow soil at SWMU/AOC 88.

- o Sample concentrations above detection limits are then compared to ETM and PRG values. Table 6-10 presents the ETM and PRG values for the pesticides/PCBs detected in the samples. Eleven of the twelve remaining SWMUs/AOCs have samples less than ETM and PRG values and are considered for elimination from further action. These 11 SWMUs/AOCs include the following:

4	131
7	194
39	252
45	256
90	265
95	

Of these 11 SWMUs/AOCs, however, one SWMU/AOC (Number 39) has been recommended for further action on a judgmental basis. An evaluation of this site is provided below:

SWMU/AOC 39 - Hazardous Waste Storage Area

Pesticide and PCB compounds (i.e., Aroclor, DDE, and DDT) were detected in the 10-foot sample only at angle boring 1. Although these values were below the ETM and PRG values, the presence of these relatively immobile compounds in the 10-foot sample may indicate the presence of elevated concentrations of these compounds in shallow soil. It is recommended that additional soil sampling be performed to assess the potential presence of pesticides/PCBs in shallow soil at this SWMU/AOC.

- SWMUs/AOCs with samples above ETM and/or PRG values evaluated on a case-by-case basis. Recommendations for these sites are based on site- and compound-specific characteristics.

Only one SWMU/AOC (SWMU/AOC 244, a PCB spill area) has pesticides/PCBs above ETM and/or PRG values. An evaluation of this site is provided below:

SWMU/AOC 244 - PCB Spill Area

Seven samples (including duplicates) were collected from the three hand auger borings at SWMU/AOC 244. The only detected compound was Aroclor-

Table 6-10
ETM and PRG Values for Pesticides/PCBs
MCAS El Toro RFA

Compounds	ETM Values (ug/kg)	PRG Values (ug/kg)
Aroclor-1254	145,370	220 (1)
Aroclor-1260	10,090	220 (1)
Chlordane (2)	496	1,300
DDD	217,960	7,100
DDE	67,990	5,000
DDT	22,300	5,000
Dieldrin	910	110
Endosulfan Sulfate	1,105,230	---
Heptachlor	320	380
Methoxychlor	431,360	390,000

NOTES:

(1) For all PCBs

(2) For alpha-chlordane and gamma-chlordane

ETM - El Toro Model values, based on the leaching pathway evaluation model.

PRG - U.S. Environmental Protection Agency
Preliminary Remedial Goals, Residential Soil Values.

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1260. A concentration of 540 ug/kg was detected at the 2-foot depth at HA3. The observed value was less than the ETM for Aroclor-1260 (ETM=10,090 ug/kg) and greater than the PRG for the compound (PRG=220 ug/kg). The original and duplicate samples collected at the 5-foot depth of HA3 were both below the detection limits.

Information obtained during the PR and VSI indicates that this site is a known PCB spill area which was previously remediated by excavation of the affected soil. It appears that the Aroclor-1260 observed in a single sample (2-foot depth only in HA-3) out of a total of seven samples collected at this SWMU/AOC represents a minor amount of residual PCB contamination in soil not excavated during the previous remediation. As such, it does not represent a significant source of PCBs in soil. In addition, the detected value of 540 ug/kg is well below the level for PCB cleanups established by EPA under the Toxic Substances Control Act (TSCA) of 10,000 ug/kg for nonrestricted access industrial areas (TSCA, 15 USC Sections 2601-2654; 40 CFR Section 761.120). Therefore, no further consideration is recommended at this site for pesticides/PCBs.

Based on the above evaluations, two SWMUs/AOCs (Numbers 39 and 88) are recommended for further consideration on a judgmental basis with respect to pesticides/PCBs.

6.3.4 Metals

Metals analysis was performed at a total of 52 SWMUs/AOCs. Table 6-11 provides a summary of the evaluation results for the SWMUs/AOCs analyzed for metals. Analytical results for metals are evaluated according to the following rationale:

- SWMUs/AOCs with all samples less than the background metals concentration thresholds are recommended for no further consideration. Table 6-12 presents the background metals concentration thresholds. Nineteen are recommended for no further consideration based on this first evaluation. These SWMUs/AOCs include the following:

3	147
26	160
33	186
45	222
70	224
83	225
107	226
125	229
138	255
144	

- Sample concentrations above background levels are then compared to the ETM and PRG values. Table 6-12 presents the ETM and PRG values for the list of metals. SWMUs/AOCs with all samples below these values are recommended for no further consideration. Thirty-one of the remaining 33 SWMUs/AOCs are eliminated from further consideration based on this criteria. These 31 SWMUs/AOCs include the following:

4	171
5	172

Table 6-11
Summary of Evaluation Results for Metals

Analyses	**Evaluation Rationale**		
Metals (52 SWMUs/AOCs)	All samples < background metals threshold concentrations	Sample(s) > background metals threshold concentrations but below ETM and PRG values	Sample(s) > ETM and/or PRG values
Recommendations:	NFC	NFC	NFC (1) (Based on case-by-case evaluation)
SWMU/AOC Type	**Number of SWMUs/AOCs**		
Abandoned Metal Plating Sewer Lines	0	0	1
Engine Test Cells	0	2	0
Former Sewage Treatment Plant	0	0	1
HWSAs/DSAs	18	22	0
Spill Areas	0	1	0
Washes	1	3	0
Others	0	3	0
Totals:	19	31	2

NOTES:

(1) SWMUs/AOCs 90 and 265 recommended for No Further Consideration based on case-by-case evaluation.

NFC = No Further Consideration

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Table 6-12
ETM and PRG Values for Metals
MCAS El Toro RFA

Compounds	Background Threshold Concentration (mg/kg)	ETM Value (mg/kg)	PRG Value (mg/kg)
Aluminum	25,396	1,000,000	78,000
Antimony	2.81	---	31
Arsenic	37.6	93.76	0.97
Barium	281	169,600	5,500
Beryllium	1.20	22.4	0.40
Cadmium	23.1	---	39
Chromium	124	---	390
Cobalt	31.0	---	---
Copper	82.9	13,408	2,900
Lead	29.9	1,123	---
Mercury	0.37	206	23
Nickel	193	---	1,600
Selenium	0.48	18.9	390
Silver	0.55	6.4	390
Thallium	0.60	---	---
Vanadium	285	---	550
Zinc	179	20,320	23,000

NOTES:

Where dashes ("---") appear for ETM values, no established MCLs exist.

Background - 50% confidence that 99% of background concentrations are less than the values shown for each parameter. These values are based on surface soil samples collected off-Station.

ETM - El Toro Model values, based on the leaching pathway evaluation model.

PRG - U.S. Environmental Protection Agency Preliminary Remedial Goals

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8	194
11	223
27	227
30	234
39	241
73	242
88	252
95	256
99	261
116	271
124	272
130	300
131	303
149	

- SWMUs/AOCs with samples above ETM and/or PRG values are evaluated on a case-by-case basis.

Two SWMUs/AOCs have metals above ETM and/or PRG values. Evaluations of these SWMUs/AOCs are provided below:

<u>SWMU/AOC 90 - Former Sewage Treatment Plant</u>

This site was investigated with nine 5-foot hand auger borings located within an unpaved, grassy area, measuring approximately 200 feet by 200 feet. Arsenic and silver had sample concentrations above ETM values. Arsenic was detected at 103 mg/kg at the 5-foot depth in Boring HA7. Silver was detected at 13.10 mg/kg at the 2-foot depth in Boring HA3. Thallium had a sample concentration above background threshold criteria (thallium does not have an MCL [and therefore no ETM value] or a PRG value). Thallium was detected at 0.93 B mg/kg at the 2-foot depth in Boring HA7. (The "B" flag indicates that the value is less than the CRDL but greater than the instrument detection limit). Table 6-13 summarizes the analytical results for arsenic and silver for the other samples collected at SWMU/AOC 90.

A total of 18 samples from this site were analyzed for metals. The values of arsenic and silver detected above their ETM values and the value of thallium detected above the background threshold criteria are isolated occurrences (or "outliers") observed at a single sample location. These single, isolated occurrences do not represent significant sources of metals contamination at the site. Therefore, no further consideration is recommended for metals at SWMU/AOC 90.

SWMU/AOC 265 - Abandoned Metal Plating Sewer Lines

Abandoned metal plating sewer lines lead from Buildings 295, 296, and 297 to the former sewage treatment plant (SWMU/AOC 90). Ten 25-foot vertical borings were drilled at approximately 200-foot intervals along the length of the sewer lines. A total of 55 samples were collected and analyzed for metals. All samples were below background levels and ETM and/or PRG values except for antimony and silver.

Antimony was detected above the ETM value (3.59 mg/kg) in only 3 of the 55 samples collected at the site. These antimony concentrations were in Boring B6 at the 15-foot depth (7.2 B mg/kg), Boring B8 at the 20-foot depth (6.6 B mg/kg), and Boring B10 at the 10-foot depth (7.1 B mg/kg). All of these values are flagged with a "B", indicating that the value is less than the CRDL

Table 6-13
Analytical Results for Arsenic, Silver, and Thallium at SWMU/AOC 90
MCAS El Toro RFA

Boring Number	Depth (feet)	Arsenic (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)
HA1	2	3.1	0.73 B	ND
	5	2.5	0.66 B	ND
HA2	2	4.0	1.7 B	ND
	5	No Recovery	No Recovery	No Recovery
HA3	2	3.2	13.1	ND
	4	2.7	1 B	ND
HA4	2	2.7	1.1 B	ND
	Duplicate	4.5	1.7 B	ND
	5	1.8 B	0.55 B	ND
HA5	2	5.3	2.1	ND
	5	2.4	0.82 B	ND
HA6	2	4.2	0.37 B	ND
	5	3.1	0.45 B	ND
HA7	2	3.4	0.86 B	ND
	5	103	0.76 B	0.94 B
	Duplicate	94.5	0.94 B	ND
HA8	2	2.3	0.41 B	ND
	5	4.4	0.63 B	ND
HA9	2	2.7	1.2 B	ND
	5	No Recovery	No Recovery	No Recovery

B = The reported values is less than CRDL, but greater than or equal to the instrument detection limit.
ND = Below detection limits (CRDLs).

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but greater than the instrument detection limit. In 51 of the samples from this site, antimony was less than the CRDL and instrument detection limit.

Silver was detected above the ETM value (6.4 mg/kg) in only 1 of the 55 samples collected at SWMU/AOC 265. Silver was detected in Boring B5 at 10 feet (7.9 mg/kg). Of the 55 samples collected, silver was less than the CRDL in 52 samples.

Based on the isolated and infrequent occurrences of arsenic and silver at this site, SWMU/AOC 265 is recommended for no further consideration for metals.

Based on the above evaluations, no SWMUs/AOCs are recommended for further consideration with respect to metals.

6.4 Recommendations for Further Action

Twenty-five SWMUs/AOCs are recommended for further action based on the evaluations for TPH and volatile organics, semivolatiles, metals, and pesticides/PCBs. Table 6-14 presents a list of the number of SWMUs/AOCs recommended for further action by analytical parameter:

Table 6-14
Summary of SWMUs/AOCs for
Further Action by Analytical Parameter

Analytical Category	No. of SWMUs/AOCs Recommended for Further Action	SWMU/AOC Numbers
TPH & Volatile Organics	21	14, 26, 33, 46, 84, 110, 145, 151, 173, 175, 176, 194, 198, 199, 201, 204, 213, 260, 280, 298, 300
Semivolatiles	3	39, 131, 171
Pesticides/PCBs	2	39, 88
Metals	0	--
Total:	25[a]	

[a]SWMU/AOC 39 is included for further action under semivolatiles and pesticides/PCBs. Therefore, the total number of SWMUs/AOCs recommended for further action is 25.

Five basic types of further action and the corresponding SWMUs/AOCs for which the action is recommended are:

1. **Include SWMU/AOC into a CERCLA program.** Two SWMUs/AOCs are recommended for further action in a CERCLA program: SWMU/AOC 194 (former incinerator site) and SWMU/AOC 300 (spill area, east of SWMU/AOC 194). In addition, SWMU/AOC 90 (former sewage treatment plant) is being evaluated for possible inclusion into the RI/FS program at the Station.

2. **Evaluate SWMU/AOC in a State or local program with additional borings.** SWMUs/AOCs with petroleum hydrocarbon contamination only and unknown

extent of contamination are recommended for further action (i.e., additional soil sampling) in a State or local program. Seven SWMUs/AOCs fall into this category of further action: SWMU/AOC Numbers 46, 131, 145, 173, 175, 176, and 280.

SWMUs/AOCs with potential shallow SVOC and/or pesticides/PCBs contamination are recommended for further action (i.e., shallow soil borings). Three SWMUs/AOCs fall into this category: SWMU/AOC Numbers 39 (SVOCs and pesticides/PCBs); 88 (PCBs); and 171 (SVOCs).

3. **Repair cracks in paved area and leave soil in place.** Seven SWMUs/AOCs are recommended for further action in a Navy program to repair cracked concrete in order to prevent future migration of moderate petroleum hydrocarbons as a Best Management Practice (BMP) for the Station. These seven SWMUs/AOCs include: Numbers 14, 110, 198, 201, 204, 213, and 260.

4. **Evaluate UST or oil/water separator in a State or local program.** Four SWMUs/AOCs with moderate petroleum hydrocarbons adjacent to a tank bottom are recommended for further action (such as a leak test or inspection or removal) to assess whether the tank is releasing petroleum hydrocarbons into the soil. These four SWMUs/AOCs are: Numbers 84, 151, 199, and 298.

5. **Excavate shallow, stained soil.** Two SWMUs/AOCs (i.e., Numbers 26 and 33) that are HWSAs have stains on an adjacent unpaved area. It is recommended that the shallow, stained soil at these SWMUs/AOCs be excavated and disposed

of properly. In addition, as a BMP, it is recommended that the Station no longer store drums outside of the HWSAs.

Recommendations for every SWMU/AOC sampled in the RFA are included in Table 6-15. A summary of the analytical results for all of the samples analyzed at each SWMU/AOC is provided in Appendix A.

Table 6-15
Recommendations for SWMUs/AOCs
MCAS El Toro RFA

SWMU No.	SWMU/AOC Type	Recommendation (FA/NFA)	Description of Further Action	Rationale for Further Action
3	Marshburn Channel	NFA	--	--
4	Bee Canyon Wash	NFA	--	--
5	Borrego Canyon Wash	NFA	--	--
6	Landfarming site	NFA	--	--
7	Transformer storage area	NFA	--	--
8	Abandoned Well 50-3285	NFA	--	--
9	Fuel bladder	NFA	--	--
11	Agua Chinon Wash	NFA	--	--
13	Drop Tank Storage Area	NFA	--	--
14	Drop Tank Fuel Storage Area	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
15	Wash Water Runoff Site	NFA	--	--
16	Wash Water Runoff Site	NFA	--	--
20	Underground Storage Tank	NFA	--	--
26	Hazardous Waste Storage Area	FA	Excavate shallow, stained soil	Moderate petroleum hydrocarbon contamination
27	Hazardous Waste Storage Area	NFA	--	--
30	Drum Storage Area	NFA	--	--
33	Hazardous Waste Storage Area	FA	Excavate shallow, stained soil	Petroleum hydrocarbon contamination
39	Hazardous Waste Storage Area	FA	Shallow soil borings	Potential for SVOCs and pesticides/PCBs in shallow soil
41	Vehicle Wash Rack	NFA	--	--
45	Drum Storage Area	NFA	--	--
46	Vehicle maintenance and parking	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
48	Underground Storage Tank	NFA	--	--
49	Underground Storage Tank	NFA	--	--
57	Underground Storage Tank	NFA	--	--
59	Underground Storage Tank	NFA	--	--
65	Underground Storage Tank	NFA	--	--
70	Hazardous Waste Storage Area	NFA	--	--
73	Hazardous Waste Storage Area	NFA	--	--
76	Oil/Water Separator	NFA	--	--
83	Hazardous Waste Storage Area	NFA	--	--

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Table 6-15
Recommendations for SWMUs/AOCs
MCAS El Toro RFA

SWMU No.	SWMU/AOC Type	Recommendation (FA/NFA)	Description of Further Action	Rationale for Further Action
84	Oil/Water Separator	FA	Leak test/inspection of separator	Moderate petroleum hydrocarbon contamination at 10-foot dept
88	Drum Storage Area	FA	Shallow soil borings	Potential for PCBs in shallow soil
90	Former Sewage Treatment Plant Sit	NFA	--	--
91	Underground Storage Tank	NFA	--	--
92	Underground Storage Tank	NFA	--	--
95	Engine Test Cell	NFA	--	--
98	Vehicle Wash Rack	NFA	--	--
99	Drum Storage Area	NFA	--	--
100	TCE Degreaser	NFA	--	--
101	Oil/Water Separator	NFA	--	--
102	Underground Storage Tank	NFA	--	--
107	Hazardous Waste Storage Area	NFA	--	--
110	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
112	Oil/Water Separator	NFA	--	--
116	Drum Storage Area	NFA	--	--
120	Vehicle Wash Rack	NFA	--	--
124	Hazardous Waste Storage Area	NFA	--	--
125	Hazardous Waste Storage Area	NFA	--	--
129	Underground Storage Tank	NFA	--	--
130	Drum Storage Area	NFA	--	--
131	Engine Test Cell	FA	Shallow soil borings	SVOC above PRG value
132	Oil/Water Separator	NFA	--	--
137	Oil/Water Separator	NFA	--	--
138	Drum Storage Area	NFA	--	--
139	Oil/Water Separator	NFA	--	--
144	Drum Storage Area	NFA	--	--
145	Underground Storage Tank	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
147	Drum Storage Area	NFA	--	--
149	Drum Storage Area	NFA	--	--
151	Oil/Water Separator	FA	Leak test/inspection of separator	Moderate petroleum hydrocarbon contamination at 10-foot dept

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Table 6-15
Recommendations for SWMUs/AOCs
MCAS El Toro RFA

SWMU No.	SWMU/AOC Type	Recommendation (FA/NFA)	Description of Further Action	Rationale for Further Action
160	Hazardous Waste Storage Area	NFA	--	--
162	Underground Storage Tank	NFA	--	--
164	Vehicle Wash Rack	NFA	--	--
171	Hazardous Waste Storage Area	FA	Shallow soil borings	Potential for SVOCs in surface soil
172	Hazardous Waste Storage Area	NFA	--	--
173	Oil/Water Separator	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
175	Oil/Water Separator	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
176	Underground Storage Tank	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
179	Oil/Water Separator	NFA	--	--
181	Landfarming Area	NFA	--	--
186	Hazardous Waste Storage Area	NFA	--	--
187	Underground Storage Tank	NFA	--	--
188	Underground Storage Tank	NFA	--	--
193	Oil/Water Separator	NFA	--	--
194	Former Incinerator Site	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
195	Vehicle Wash Rack	NFA	--	--
196	Oil/Water Separator	NFA	--	--
198	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
199	Oil/Water Separator	FA	Leak test/ inspection of separator	Moderate petroleum hydrocarbon contamination at 15-foot dept
201	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
202	Underground Storage Tank	NFA	--	--
204	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
205	Oil/Water Separator	NFA	--	--
208	Oil/Water Separator	NFA	--	--
211	Oil/Water Separator	NFA	--	--
213	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
214	Underground Storage Tank	NFA	--	--
220	Oil/Water Separator	NFA	--	--
222	Hazardous Waste Storage Area	NFA	--	--
223	Hazardous Waste Storage Area	NFA	--	--

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SWMU No.	SWMU/AOC Type	Recommendation (FA/NFA)	Description of Further Action	Rationale for Further Action
224	Hazardous Waste Storage Area	NFA	--	--
225	Hazardous Waste Storage Area	NFA	--	--
226	Hazardous Waste Storage Area	NFA	--	--
227	Hazardous Waste Storage Area	NFA	--	--
229	Hazardous Waste Storage Area	NFA	--	--
231	Underground Storage Tank	NFA	--	--
232	Oil/Water Separator	NFA	--	--
233	Oil/Water Separator	NFA	--	--
234	Hazardous Waste Storage Area	NFA	--	--
241	Drum Storage Area	NFA	--	--
242	Hazardous Waste Storage Area	NFA	--	--
243	Wash Rack	NFA	--	--
244	PCB Spill Area	NFA	--	--
248	Oil/Water Separator	NFA	--	--
249	Underground Storage Tank	NFA	--	--
250	Underground Storage Tank	NFA	--	--
252	Hazardous Waste Storage Area	NFA	--	--
253	Vehicle Wash Rack	NFA	--	--
255	Hazardous Waste Storage Area	NFA	--	--
256	Hazardous Waste Storage Area	NFA	--	--
257	Wash Water Runoff Site	NFA	--	--
258	Wash Water Runoff Site	NFA	--	--
260	Aboveground Storage Tank	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
261	Drum Storage Area	NFA	--	--
262	Fuel Storage Area	NFA	--	--
263	Underground Storage Tank	NFA	--	--
264	Equipment Storage Area	NFA	--	--
265	Metal Plating Sewer Lines	NFA	--	--
269	Fuel Storage Locker	NFA	--	--
270	Wash Rack	NFA	--	--

Table 6-15
Recommendations for SWMUs/AOCs
MCAS El Toro RFA

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Table 6-15 Recommendations for SWMUs/AOCs MCAS El Toro RFA				
SWMU No.	SWMU/AOC Type	Recommendation (FA/NFA)	Description of Further Action	Rationale for Further Action
271	Hazardous Waste Storage Area	NFA	--	--
272	Hazardous Waste Storage Area	NFA	--	--
273	Wash Rack	NFA	--	--
275	Underground Storage Tank	NFA	--	--
276	Underground Storage Tank	NFA	--	--
277	Underground Storage Tank	NFA	--	--
278	Underground Storage Tank	NFA	--	--
279	Underground Storage Tank	NFA	--	--
280	Underground Storage Tank	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
282	Underground Storage Tank	NFA	--	--
283	Underground Storage Tank	NFA	--	--
286	Underground Storage Tank	NFA	--	--
287	Underground Storage Tank	NFA	--	--
291	Oil/Water Separator	NFA	--	--
296	Oil/Water Separator	NFA	--	--
298	Underground Storage Tank	FA	Leak test/inspection of UST	Petroleum contamination at 10 and 20-foot depths
300	Spill Area	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
301	Mark Arrest System	NFA	--	--
302	Mark Arrest System	NFA	--	--
303	Underground Storage Tank	NFA	--	--

FA - Further action
NFA - No further action

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Appendix A

SAMPLING VISIT ANALYTICAL RESULTS

SUMMARY OF SAMPLING VISIT RESULTS
MCAS El. TORO RFA

		TPH/TFH and Volatiles						SVOCs			PESTICIDES/PCBs			METALS			
		TPH/TFH	TPH/TFH	TPH/TFH	VOC	VOC	VOC										
SWMU/AOC	DESCRIPTION	< 100 ppm	< 1000 ppm	>1000 ppm	< CRDL	< ETM & PRG	> ETM & PRG	< CRDL	< ETM & PRG	> ETM & PRG	< CRDL	< ETM & PRG	> ETM & PRG	< BGT	< ETM & PRG	> ETM & PRG	RECOMMENDATIONS
3	Marshburn Channel	X			X			X			X			X			No Further Action
4	Bee Canyon Wash	X			X			X				X			X		No Further Action
5	Borrego Canyon Wash		X		X			X			X				X		No Further Action
6	Landfarming site	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
7	Transformer storage area	X				X		NA	NA	NA		X		NA	NA	NA	No Further Action
8	Abandoned Well 50-3285	X			X			X			X				X		No Further Action
9	Fuel bladder		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
11	Agua Chinon Wash		X		X				X		X				X		No Further Action
13	Drop Tank Storage Area	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
14	Drop Tank Fuel Storage Area		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
15	Wash Water Runoff Site	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
16	Wash Water Runoff Site	X				X		NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
20	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
26	Hazardous Waste Storage Area		X		X			X			X			X			Excavate shallow stained soil.
27	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action
30	Drum Storage Area	X			X			X			X				X		No Further Action
33	Hazardous Waste Storage Area			X	X			X			X			X			Excavate shallow stained soil.
39	Hazardous Waste Storage Area	X			X			X				X			X		Shallow Soil Borings
41	Vehicle Wash Rack		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
45	Drum Storage Area	X			X			X				X		X			No Further Action
46	Equipment Storage Yard			X	X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Additional borings.
48	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
49	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
57	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
59	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
65	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
70	Hazardous Waste Storage Area	X			X				X		X			X			No Further Action
73	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action
76	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
83	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
84	Oil/Water Separator		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Leak test/Inspection of separator
88	Drum Storage Area	X			X			X			X				X		Shallow Soil Borings
90	Former Sewage Treatment Plant Site	X				X			X			X				X	No Further Action
91	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
92	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
95	Engine Test Cell	X			X			X				X			X		No Further Action
98	Vehicle Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
99	Drum Storage Area	X			X				X		X				X		No Further Action
100	TCE Degreaser		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
101	Oil/Water Separator		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
102	Underground Storage Tank		X			X		NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
107	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
110	Vehicle Wash Rack		X			X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
112	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
116	Drum Storage Area	X			X			X			X				X		No Further Action
120	Vehicle Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
124	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action

SUMMARY OF SAMPLING VISIT RESULTS
MCAS EL TORO RFA

SWMU/AOC	DESCRIPTION	TPH/TFH and Volatiles						SVOCs			PESTICIDES/PCBs			METALS			RECOMMENDATIONS
		TPH/TFH < 100 ppm	TPH/TFH < 1000 ppm	TPH/TFH >1000 ppm	VOC < CRDL	VOC < ETM & PRG	VOC > ETM & PRG	< CRDL	< ETM & PRG	> ETM & PRG	< CRDL	< ETM & PRG	> ETM & PRG	< BGT	< ETM & PRG	> ETM & PRG	
125	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
129	Underground Storage Tank	X				X		NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
130	Drum Storage Area	X			X			X			X				X		No Further Action
131	Engine Test Cell		X		X					X		X			X		Shallow soil borings.
132	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
137	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
138	Drum Storage Area	X			X			X			X			X			No Further Action
139	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
144	Drum Storage Area	X			X			X			X			X			No Further Action
145	Underground Storage Tank			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Additional borings.
147	Drum Storage Area		X		X			X			X			X			No Further Action
149	Drum Storage Area	X			X				X		X				X		No Further Action
151	Oil/Water Separator		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Leak test/Inspection of separator
160	Hazardous Waste Storage Area	X			X				X		X			X			No Further Action
162	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
164	Vehicle Wash Rack		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
171	Hazardous Waste Storage Area	X			X				X		X				X		Shallow Soil Borings
172	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action
173	Oil/Water Separator			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Additional borings.
175	Underground Storage Tank			X			X	NA	NA	NA	NA	NA	NA	NA	NA	NA	Additional borings.
176	Underground Storage Tank			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Additional borings.
179	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
181	Landfarming Area		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
186	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
187	Underground Storage Tank/Oil Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
188	Underground Storage Tank/Oil Water Separator		X			X		NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
193	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
194	Former Incinerator Site			X			X	X				X			X		Further invest. under RI/FS program
195	Vehicle Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
196	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
198	Vehicle Wash Rack		X			X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
199	Oil/Water Separator		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Leak test/Inspection of separator
201	Vehicle Wash Rack			X	X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
202	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
204	Vehicle Wash Rack			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
205	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
208	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
211	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
213	Vehicle Wash Rack		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
214	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
220	Oil/Water Separator		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
222	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
223	Hazardous Waste Storage Area	X			X				X		X				X		No Further Action
224	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
225	Hazardous Waste Storage Area		X		X			X			X			X			No Further Action
226	Hazardous Waste Storage Area	X			X				X		X			X			No Further Action
227	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action

SUMMARY OF SAMPLING VISIT RESULTS
MCAS EL TORO RFA

		TPH/TFH and Volatiles						SVOCs			PESTICIDES/PCBs			METALS			
SWMU/AOC	DESCRIPTION	TPH/TFH < 100 ppm	TPH/TFH < 1000 ppm	TPH/TFH >1000 ppm	VOC < CRDL	VOC < ETM & PRG	VOC > ETM & PRG	< CRDL	< ETM & PRG	> ETM & PRG	< CRDL	< ETM & PRG	> ETM & PRG	< BGT	< ETM & PRG	> ETM & PRG	RECOMMENDATIONS
229	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
231	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
232	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
233	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
234	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action
241	Drum Storage Area		X		X			X			X				X		No Further Action
242	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action
243	Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
244	PCB Spill Area	X			X			NA	NA	NA			X	NA	NA	NA	No Further Action
248	Oil/Water Separator		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
249	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
250	Underground Storage Tank		X			X		NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
252	Hazardous Waste Storage Area	X			X			X				X			X		No Further Action
253	Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
255	Hazardous Waste Storage Area	X			X			X			X			X			No Further Action
256	Hazardous Waste Storage Area	X			X			X				X			X		No Further Action
257	Wash Water Runoff Site	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
258	Wash Water Runoff Site	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
260	Above Ground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	Repair cracks in pavement.
261	Drum Storage Area	X			X			X			X				X		No Further Action
262	Fuel Storage Area	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
263	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
264	Equipment Storage Area		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
265	Metal Plating Sewer Lines		X		X			X				X				X	No Further Action
269	Fuel Storage Locker		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
270	Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
271	Hazardous Waste Storage Area	X			X				X		X				X		No Further Action
272	Hazardous Waste Storage Area	X			X			X			X				X		No Further Action
273	Wash Rack	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
275	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
276	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
277	Underground Storage Tank			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
278	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
279	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
280	Underground Storage Tank			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Additional borings
282	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
283	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
286	Underground Storage Tank		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
287	Underground Storage Tank	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
291	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
296	Oil/Water Separator	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
298	Underground Storage Tank			X		X		NA	NA	NA	NA	NA	NA	NA	NA	NA	Leak test/Inspection of UST.
300	Spill Area East of SWMU/AOC 194			X	X				X		X				X		Further invest. under RI/FS program
301	Mark Arrest System		X		X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
302	Mark Arrest System	X			X			NA	NA	NA	NA	NA	NA	NA	NA	NA	No Further Action
303	Underground Storage Tank	X			X			X			X			X			No Further Action

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
			SAMPLE	ANALYTICAL TEST RESULTS								
SWMU/AOC NUMBER	SWMU/AOC TYPE	BORING NUMBER	DEPTH (FEET)	TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	RECOMMENDATIONS Rationale
This column gives the SWMU/AOC number.	This column briefly describes the purpose or type of area sampled. (The Figure number associated with the SWMU/AOC is presented here. The figures are located in Appendix B.)	This column identifies the boring number, which consists of a letter and a number. The letters represent the following: H = Hand Auger B = 25-ft Vertical Boring A = 60-ft Angle Boring The numbers designate the boring number at the site.	Depth below the ground surface, in feet, at which the sample was collected. Duplicate samples are listed directly below the original samples.	Total petroleum hydrocarbon concentration, in mg/kg, as measured by Method 418.1. ND - Not detected above detection limit of Method 418.1. NA - Not analyzed for TPH.	Total fuel hydrocarbon concentrations in mg/kg, as measured by Method 8015 for diesel and for gasoline. ND - Not detected above detection limit of Method 8015. NA - Not analyzed for TFH. Z - Unknown hydrocarbons.		This column presents the Volatile Organic Compounds detected at each depth. The concentrations are presented in ug/kg. ND - No VOCs were detected above the CRDLs. If compounds are listed, then all other compounds not listed are below detection limits. Qualifiers are defined as follows: B = Analyte is found in associated blank as well as the sample. J = Indicates an estimated value. E = Compound may be above or below linear range of instrument. D = Indicates compound has been diluted to bring the concentration into linear range. X = Indicates the compound concentration has been manually modified or the EPA qualifier has been manually modified or added. * = Indicates compound was eliminated from further consideration due to laboratory contamination.	This column presents the Semivolatile Organic Compounds detected at each depth. The concentrations are presented in ug/kg. ND - No SVOCs were detected above the CRDLs. If compounds are listed, then all other compounds not listed are below detection limits. NA - Not analyzed for SVOCs Qualifiers are defined as follows: B = Analyte is found in associated blank as well as the sample. J = Indicates an estimated value. E = Compound may be above or below linear range of instrument. D = Indicates compound has been diluted to bring the concentration into linear range. X = Indicates the compound concentration has been manually modified or the EPA qualifier has been manually modified or added. * = Indicates compound was eliminated from further consideration due to laboratory contamination.	This column presents the Pesticides/PCBs detected at each depth. The concentrations are presented in ug/kg. ND - No Pesticides/PCBs were detected above the CRDLs. If compounds are listed, then all other compounds not listed are below detection limits. NA - Not analyzed for Pesticides/PCBs Qualifiers are defined as follows: B = Analyte is found in associated blank as well as the sample. J = Indicates an estimated value. E = Compound may be above or below linear range of instrument. D = Indicates compound has been diluted to bring the concentration into linear range. C = Presence of compound has been confirmed by GC/MS analysis.	This column presents the results of the metals analyses. Concentrations are only presented if at least one sample is above background threshold concentrations. The concentrations are presented in mg/kg. NA - Indicates that samples were not analyzed for metals. NAB - Indicates that metals were analyzed, but concentrations are not above background threshold concentrations. Qualifiers are defined as follows: B = Reported value was less than the CRDL but greater than the IDL. E = Value was estimated due to interference. M = Duplicate injection precision not met. N = Spiked sample recovery not within control limits.	This column presents the recommended action for each site and describes the rationale that led to the recommendation. NFA = No Further Action. CRDL = Contract Required Limit. BGT = Background Threshold Value. ETM = El Toro Model. PRG = Preliminary Remedial Goals.	

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
3	Marshburn Channel (1)	A1	10	38.8	ND	ND	Methylene Chloride-6 BJ * Acetone-3 BJ *	ND	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ * Toluene-2 J	ND	ND	NAB		
			20 (Duplicate)	ND	ND	ND	Methylene Chloride-2 BJ *	Diethylphthalate-88 J	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-8 BJ *	Diethylphthalate-22 BJ * Bis(2-Ethylhexyl)phthalate-39 BJ *	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-5 BJ *	Diethylphthalate-32 J	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-8 BJ * Toluene-2 J	Diethylphthalate-20 BJ * Bis(2-Ethylhexyl)phthalate-49 BJ * Butylbenzylphthalate-20 J	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-14 B * Acetone-9 BJ * Toluene-3 J	Diethylphthalate-40 BJ *	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
4	Bee Canyon Wash (2)	A1	10	ND	ND	ND	Methylene Chloride-2 BJ * Toluene-1 J	Bis(2-Ethylhexyl)phthalate-86 J	ND	Silver-ND	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < ETM & PRG Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	33	ND	ND	Methylene Chloride-3 BJ *	Bis(2-Ethylhexyl)phthalate-57 J	ND	Silver-ND		
			20 (Duplicate)	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-28 *	Diethylphthalate-36 J	ND	Silver-0.81 B		
			30	ND	ND	ND	Methylene Chloride-8 BJ * Acetone-14 * Toluene-6 BJ *	Diethylphthalate-21 BJ * Di-n-butylphthalate-21 J Bis(2-Ethylhexyl)phthalate-22 BJ *	ND	Silver-ND		
			40	ND	ND	ND	Methylene Chloride-2 BJ * Toluene-1 J	ND	ND	Silver-0.51 B		
			50	ND	ND	ND	Methylene Chloride-3 BJ * Toluene-3 J	ND	ND	Silver-ND		
			60	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-11 J * Toluene-2 J	Diethylphthalate-22 J Bis(2-Ethylhexyl)phthalate-52 J Napthalene-24 J	ND	Silver-ND		
		A2	10	ND	ND	ND	Methylene Chloride-10 BJ * Toluene-3 J	Diethylphthalate-28 J Di-n-butylphthalate-21 BJ * Bis(2-Ethylhexyl)phthalate-130 J Butylbenzylphthalate-41 J Di-n-octylphthalate-100 J	Alpha-chlordane-7.3 JP Gamma-chlordane-9.6 J	Silver-0.60 B		
			20	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-12 * Toluene-5 J	Diethylphthalate-28 J Di-n-butylphthalate-21 BJ *	Heptachlor-1.9 P	Silver-ND		
			20 (Duplicate)	ND	ND	ND	Methylene Chloride-6 BJ * Toluene-3 J	ND	ND	Silver-ND		
			30	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-48 *	Bis(2-Ethylhexyl)phthalate-62 J	ND	Silver-ND		
			40	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-16 * Toluene-3 J	ND	ND	Silver-0.52 B		
			50	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-21 * Toluene-1 J	ND	ND	Silver-0.67 B		
			60	ND	ND	ND	Methylene Chloride-10 BJ *	Diethylphthalate-24 J	ND	Silver-0.60 B		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
5	Borrego Canyon Wash (3)	A1	10	105	ND	35 Z	Methylene Chloride-6 BJ * Toluene-4 J	ND	ND	Silver-ND		NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-6 BJ *	Diethylphthalate-56 J Di-n-butylphthalate-29 J Pyrene-22 J	ND	Silver-ND			
			30	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-3 J	ND	ND	Silver-ND			
			40	45.6	ND	ND	Methylene Chloride-6 BJ * Acetone-4 BJ *	Diethylphthalate-22 J Di-n-butylphthalate-21 J	ND	Silver-ND			
			50	ND	ND	ND	Methylene Chloride-6 BJ *	Diethylphthalate-23 J Di-n-butylphthalate-30 J Bis(2-Ethylhexyl)phthalate-68 BJ *	ND	Silver-ND			
			60	66	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J	Bis(2-Ethylhexyl)phthalate-120 BJ *	ND	Silver-ND			
		A2	10	ND	ND	ND	Methylene Chloride-5 BJ *	Di-n-butylphthalate-22 J	ND	Silver-ND			
			20	ND	ND	ND	Methylene Chloride-12 B *	Diethylphthalate-21 J Di-n-butylphthalate-23 J	ND	Silver-ND			
			30	ND	ND	ND	Methylene Chloride-8 BJ *	Bis(2-Ethylhexyl)phthalate-210 BJ *	ND	Silver-ND			
			40	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-8 BJ *	Diethylphthalate-19 BJ * Bis(2-Ethylhexyl)phthalate-95 BJ *	ND	Silver-0.67 B			
			50	ND	ND	ND	Methylene Chloride-12 B *	Bis(2-Ethylhexyl)phthalate-22 BJ	ND	Silver-ND			
			50 (Duplicate)	ND	ND	ND	Methylene Chloride-8 BJ *	Di-n-butylphthalate-27 BJ * Bis(2-Ethylhexyl)phthalate-32 BJ *	ND	Silver-ND			
			60	ND	ND	ND	Methylene Chloride-7 BJ *	Diethylphthalate-25 BJ * Bis(2-Ethylhexyl)phthalate-31 BJ *	ND	Silver-ND			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
6	Landfarming Site (4)	H1	2	NA	ND	ND	Methylene Chloride-7 BJ * Acetone-40 *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			5	NA	0.062	ND	Methylene Chloride-4 BJ *	NA	NA	NA			
		H2	2	NA	ND	ND	Methylene Chloride-6 BJ *	NA	NA	NA			
			2 (Duplicate)	NA	NA	ND	Methylene Chloride-11 BJ * Acetone-22 B *	NA	NA	NA			
			5	NA	ND	ND	Methylene Chloride-6 BJ * Acetone-13 *	NA	NA	NA			
		H3	2	NA	0.101	ND	Methylene Chloride-7 BJ * Acetone-15 *	NA	NA	NA			
			5	NA	NA	ND	Methylene Chloride-6 BJ *	NA	NA	NA			
		H4	2	NA	ND	ND	Methylene Chloride-6 BJ * Acetone-13 *	NA	NA	NA			
			5	NA	ND	ND	Methylene Chloride-12 B * Acetone-18 B *	NA	NA	NA			
			5 (Duplicate)	NA	ND	NA	NA	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
7	Transformer Storage Site (5)	H1	2	ND	NA	NA	Methylene Chloride-4 J * Acetone-22 B * Toluene-2 J 2-Butanone-20 1,1,2,2-Tetrachloroethane-2 J 4-Methyl-2-Pentanone-7 J 2-Hexanone-13	NA	4,4'-DDT-11 4,4'-DDE-3.9 Methoxychlor-18	NA	NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG Pest/PCB < ETM & PRG
			5	ND	NA	NA	Methylene Chloride-4 J * Acetone-7 BJ * Toluene-3 J Xylene-2 J	NA	4,4'-DDT-4.4	NA		CRDL - Contract Required Detection Limit
			5 (Duplicate)	ND	NA	NA	Methylene Chloride-1 BJ * Acetone-7 BJ * 2-Butanone-2 BJ *	NA	4,4'-DDT-12 4,4'-DDE-9.6	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
					Gasoline	Diesel						
8	Abandoned Well (6)	H1	2	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-9 BJ *	Diethylphthalate-27 J Di-n-butylphthalate-41 J	ND	Copper-14.2 Silver-ND	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL
			2 (Duplicate)	ND	ND	ND	Methylene Chloride-14 B * Acetone-20 B * Toluene-2 J	Diethylphthalate-27 J Di-n-butylphthalate-29 J Bis(2-Ethylhexyl)phthalate-170 J	ND	Copper-12.9 Silver-0.38 B		Pest/PCB < CRDL Metals < ETM & PRG
			5	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-11 B *	Diethylphthalate-38 J Di-n-butylphthalate-32 J	ND	Copper-641 Silver-0.43		CRDL - Contract Required Detection Limit
		H2	2	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-7 BJ * Toluene-1 J	Diethylphthalate-27 J Di-n-butylphthalate-25 J	ND	Copper-11.8 Silver-0.61		
			5	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-12 B * Toluene-2 J	Diethylphthalate-69 J Di-n-butylphthalate-28 J	ND	Copper-4.1 B Silver-ND		
		H3	2	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-8 BJ *	Diethylphthalate-19 J Di-n-butylphthalate-30 J	ND	Copper-10.4 Silver-0.34		
			5	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-10 BJ *	Diethylphthalate-22 J Di-n-butylphthalate-26 J	ND	Copper-3.9 Silver-ND		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		
					Gasoline	Diesel					Action	Rationale
9	Fuel Bladder (7)	H1	2	NA	ND	ND	Methylene Chloride-9 BJ *	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			2 (Duplicate)	NA	0.067	ND	Methylene Chloride-17 B * Acetone-32 B *	NA	NA	NA		
			5	NA	0.112	ND	Methylene Chloride-9 BJ * Acetone-8 BJ *	NA	NA	NA		CRDL - Contract Required Detection Limit
		H2	2	NA	ND	24.3	Methylene Chloride-15 B * Acetone-22 B *	NA	NA	NA		
			5	NA	6.15	414	Methylene Chloride-4 BJ * Acetone-14 B *	NA	NA	NA		
		H3	2	NA	0.055	ND	Methylene Chloride-25 B * Acetone-24 B * Toluene-4 J	NA	NA	NA		
			5	NA	0.062	ND	Methylene Chloride-6 BJ *	NA	NA	NA		

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	RECOMMENDATIONS Rationale
							MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS					
11	Agua Chinon Wash (South Reach) (7)	A1	10	ND	ND	ND	Methylene Chloride-10 BJ * Toluene-5 J	Bis(2-Ethylhexyl)phthalate-49 BJ *	ND	Antimony-ND Silver-ND Barium-97.6 Lead-37.8	NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < ETM & PRG
			20	ND	ND	ND	Methylene Chloride-13 B * Toluene-2 J	Diethylphthalate-25 BJ * Di-n-butylphthalate-21 BJ * Bis(2-Ethylhexyl)phthalate-83 BJ *	ND	Antimony-ND Silver-ND Barium-69.1 Lead-2.4		
			30	ND	ND	ND	Methylene Chloride-7 BJ *	Diethylphthalate-430 B Di-n-butylphthalate-24 BJ * Bis(2-Ethylhexyl)phthalate-30 BJ *	ND	Antimony-ND Silver-ND Barium-148 Lead-2.9		CRDL - Contract Required Detection Limit
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-2 J	ND	ND	Antimony-ND Silver-0.61 B Barium-116 Lead-3.3		
			40	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-17 *	Bis(2-Ethylhexyl)phthalate-24 BJ *	ND	Antimony-ND Silver-ND Barium-90.5 Lead-3.2		
			50	ND	ND	ND	Methylene Chloride-9 BJ * Toluene-2 J	Diethylphthalate-84 BJ *	ND	Antimony-4.2 B Silver-ND Barium-86.8 Lead-6.3		
			60	ND	ND	ND	Methylene Chloride-14 B *	Di-n-butylphthalate-21 BJ *	ND	Antimony-ND Silver-ND Barium-16.3 Lead-0.64		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
11	Agua Chinon Wash (South Reach) (7)	A2	10	276	ND	230 Z	Methylene Chloride-4 BJ * Toluene-6 J	Diethylphthalate-50 J Di-n-butylphthalate-120 BJ * Chrysene-46 J Benzo(a)pyrene-85 J	ND	Antimony-ND Silver-ND Barium-70.9 Lead-21.1	NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL
			20	ND	ND	45 Z	Methylene Chloride-3 BJ *	Diethylphthalate-25 J Di-n-butylphthalate-86 BJ *	ND	Antimony-ND Silver-ND Barium-119 Lead-7.4		Metals < ETM & PRG
			30	ND	ND	ND	Methylene Chloride-3 BJ *	Diethylphthalate-39 J Di-n-butylphthalate-110 BJ *	ND	Antimony-ND Silver-ND Barium-117 Lead-2.2		CRDL - Contract Required Detection Limit
			40	41.9	2 Z	13 Z	Methylene Chloride-4 J *	Diethylphthalate-27 J Di-n-butylphthalate-100 BJ *	ND	Antimony-ND Silver-ND Barium-82.2 Lead-3.2		
			50	ND	ND	ND	Methylene Chloride-6 BJ * Toluene-1 J	Diethylphthalate-35 J Di-n-butylphthalate-110 BJ * Bis(2-Ethylhexyl)phthalate-77 J	ND	Antimony-ND Silver-ND Barium-46.5 Lead-1.3		
			50 (Duplicate)	ND	ND	ND	Methylene Chloride-18 B * Toluene-3 J	Di-n-butylphthalate-90 BJ *	ND	Antimony-ND Silver-ND Barium-38.1 Lead-0.96		
			60	ND	ND	ND	Methylene Chloride-11 BJ * Toluene-2 J	Diethylphthalate-33 J Di-n-butylphthalate-120 BJ *	ND	Antimony-ND Silver-0.66 B Barium-110 Lead-2.5		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
				ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
11	Agua Chinon Wash (North Reach) (8,9)	A3	10	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-6 BJ * 2-Butanone-4 BJ *	ND	ND	Antimony-ND Silver-ND Barium-23.8 Lead-0.59	NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < ETM & PRG
			20	ND	0.277	ND	Methylene Chloride-13 B * Acetone-6 BJ * 2-Butanone-4 BJ *	ND	ND	Antimony-ND Silver-ND Barium-50.2 Lead-0.61		
			30	ND	ND	ND	Methylene Chloride-14 B * Acetone-10 BJ * 2-Butanone-3 BJ *	ND	ND	Antimony-ND Silver-ND Barium-251 Lead-2.6		CRDL - Contract Required Detection Limit
			40	ND	ND	ND	Methylene Chloride-17 B * Acetone-11 BJ * 2-Butanone-4 BJ *	ND	ND	Antimony-ND Silver-ND Barium-293 Lead-4.5		
			40 (Duplicate)	ND	ND	ND	Methylene Chloride-15 B * Acetone-6 BJ * 2-Butanone-3 BJ *	ND	ND	Antimony-ND Silver-ND Barium-332 Lead-3.2		
			50	ND	ND	ND	Methylene Chloride-22 B * Acetone-11 BJ * 2-Butanone-4 BJ *	Bis(2-Ethylhexyl)phthalate-200 J	ND	Antimony-ND Silver-ND Barium-185 Lead-1.9		
			60	40	0.08	ND	Methylene Chloride-18 B * Acetone-8 BJ * 2-Butanone-4 BJ *	ND	ND	Antimony-ND Silver-ND Barium-151 Lead-2.7		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
11	Agua Chinon Wash (North Reach) (8,9)	A4	10	223	ND	ND	Methylene Chloride-6 BJ * Acetone-12 BJ *	ND	ND	Antimony-ND Silver-ND Barium-111 Lead-2.1	NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	217	ND	ND	Methylene Chloride-5 BJ * Acetone-16 B *	ND	ND	Antimony-ND Silver-ND Barium-51.2 Lead-1.0		
			30	73	ND	ND	Methylene Chloride-8 BJ * Acetone-4 BJ *	ND	ND	Antimony-ND Silver-ND Barium-80.2 Lead-1.6		
			40	248	ND	ND	Methylene Chloride-7 BJ * Acetone-4 BJ *	ND	ND	Antimony-ND Silver-ND Barium-16.8 Lead-0.51		
			40 (Duplicate)	ND	ND	ND	Methylene Chloride-6 BJ *	ND	ND	Antimony-ND Silver-ND Barium-50.3 Lead-0.95		
			50	65	ND	ND	Methylene Chloride-8 BJ * Acetone-5 BJ *	ND	ND	Antimony-ND Silver-ND Barium-117 Lead-0.68		
			60	210	ND	ND	Methylene Chloride-9 BJ * Acetone-9 BJ *	ND	ND	Antimony-ND Silver-ND Barium-80.4 Lead-2.9		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
13	Drop Tank Storage Area (10)	B1	5	NA	ND	ND	Methylene Chloride-4 BJ * Acetone-4 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	NA	ND	ND	Methylene Chloride-5 J * Acetone-4 * 2-Butanone-1 J	NA	NA	NA			
			10 (Duplicate)	NA	ND	ND	Methylene Chloride-2 BJ * Acetone-2 *	NA	NA	NA			CRDL - Contract Required Detection Limit
			15	NA	ND	ND	Methylene Chloride-2 BJ * Acetone-1 *	NA	NA	NA			
			20	NA	ND	ND	Methylene Chloride-4 J * 2-Butanone-1 J	NA	NA	NA			
			25	NA	ND	ND	Methylene Chloride-3 BJ * Acetone-2 *	NA	NA	NA			
		B2	5	NA	ND	ND	Methylene Chloride-2 BJ * Toluene-2 J 2-Butanone-2 J Xylene-5 J	NA	NA	NA			
			10	NA	ND	ND	Methylene Chloride-3 BJ * Acetone-2 BJ * 2-Butanone-1 J	NA	NA	NA			
			15	NA	ND	ND	Methylene Chloride-2 BJ * Acetone-2 BJ *	NA	NA	NA			
			15 (Duplicate)	NA	ND	ND	Methylene Chloride-4 BJ * Acetone-3 BJ *	NA	NA	NA			
			20	NA	ND	ND	Methylene Chloride-5 J * Acetone-2 BJ * Toluene-1 J	NA	NA	NA			
			25	NA	ND	ND	Methylene Chloride-7 J * Acetone-3 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
13	Drop Tank Storage Area (10)	B3	5	NA	ND	ND	Methylene Chloride-3 BJ * Acetone-9 BJ * Toluene-1 J	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	NA	ND	ND	Methylene Chloride-3 BJ * Acetone-5 BJ *	NA	NA	NA			
			15	NA	ND	ND	Methylene Chloride-4 BJ * Acetone-4 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			20	NA	ND	ND	Methylene Chloride-3 BJ *	NA	NA	NA			
			25	NA	ND	ND	Methylene Chloride-3 BJ * Acetone-3 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
14	Drop Tank Fuel Storage Area (11)	H1	2	NA	1.45	ND	Methylene Chloride-10 BJ * Acetone-18 B *	NA	NA	NA		Repair cracks in pavement.	To prevent future migration of petroleum hydrocarbons. TPH/TFH < 1000 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			5	NA	3.21	ND	Methylene Chloride-4 BJ * Acetone-8 BJ *	NA	NA	NA			
		H2	2	NA	172	20.1	Methylene Chloride-6 BJ * Acetone-52 B *	NA	NA	NA			
			5	NA	2.01	16.1	Methylene Chloride-12 B * Acetone-50 B *	NA	NA	NA			
		H3	2	NA	0.74	ND	Methylene Chloride-4 BJ * Acetone-20 B *	NA	NA	NA			
			5	NA	243	ND	Methylene Chloride-10 BJ * Acetone-21 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
15	Wash Water Runoff Site (12)	H1	2	NA	ND	ND	Methylene Chloride-4 BJ * Toluene-2 J	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			5	NA	ND	ND	ND	NA	NA	NA			
		H2	2	NA	ND	ND	Methylene Chloride-5 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			5	NA	ND	ND	Methylene Chloride-7 BJ *	NA	NA	NA			
		H3	2	NA	ND	ND	Methylene Chloride-6 BJ *	NA	NA	NA			
			5	NA	ND	ND	Methylene Chloride-8 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
16	Wash Water Runoff Site (13)	H1	2	NA	ND	ND	Methylene Chloride-6 J * Acetone-24 * Toluene-1 J	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG
			5	NA	ND	ND	Methylene Chloride-3 BJ *	NA	NA	NA			
		H2	2	NA	ND	ND	Methylene Chloride-6 J * Toluene-2 J	NA	NA	NA			CRDL - Contract Required Detection Limit
			5	NA	ND	ND	Methylene Chloride-2 BJ * Acetone-16 B *	NA	NA	NA			
		H3	2	NA	ND	ND	PCE-1 J Xylene-2 J	NA	NA	NA			
			5	NA	ND	ND	Methylene Chloride-4 J * Toluene-2 J	NA	NA	NA			
		H4	2	NA	ND	ND	Acetone-32 * 4-Methyl-2-Pentanone-15 2-Hexanone-26	NA	NA	NA			
			5	NA	ND	ND	ND	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
20	Underground Storage Tank (14)	H1	2	NA	91.4	ND	Methylene Chloride-6 BJ * Acetone-34 *	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			5	NA	ND	ND	Methylene Chloride-5 BJ * Acetone-27 *	NA	NA	NA			
		H2	2	NA	3.27	115	Methylene Chloride-9 BJ * Acetone-16 B *	NA	NA	NA			CRDL - Contract Required Detection Limit
			5	NA	6.24	463	Methylene Chloride-5 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
26	Hazardous Waste Storage Area (15)	A1	10	ND	ND	ND	Toluene-2 J	ND	ND	NAB	Excavate shallow, stained soil.	Moderate petroleum hydrocarbon contamination. TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-4 BJ * Toluene-1 J	ND	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-3 BJ *	ND	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-2 BJ *	ND	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-8 BJ *	ND	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-4 BJ * 2-Butanone-2 BJ *	ND	ND	NAB		
		H1	2	80	ND	ND	Methylene Chloride-3 BJ * Acetone-7 BJ *	ND	ND	NAB		
			5	520	ND	ND	Methylene Chloride-3 BJ * Acetone-7 BJ * 2-Butanane-3 J	Bis(2-Ethylhexyl)phthalate-39 J	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
27	Hazardous Waste Storage Area (16)	A1	10	ND	ND	ND	Methylene Chloride-4 BJ *	Diethyphthalate-50 BJ * Di-n-butylphthalate-65 BJ *	ND	Lead-3 5 N	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			10 (Duplicate)	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-10 J *	Di-n-butylphthalate-18 BJ *	ND	Lead-2.4		
			20	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J	Diethylphthalate-23 BJ * Di-n-butylphthalate-62 BJ *	ND	Lead-4.2 N		
			30	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-1 J	Di-n-butlyphthalate-38 BJ *	ND	Lead-73.6 NS		
			40	ND	ND	ND	Methylene Chloride-6 BJ *	Diethylphthalate-23 BJ * Di-n-butylphthalate-35 BJ * Bis(2-Ethylhexyl)phthalate-290 J	ND	Lead-3.0 N		
			50	ND	ND	ND	Methylene Chloride-5 BJ * Acetone- 11 *	Diethylphthalate-120 BJ * Di-n-butylphthalate-78 BJ * Butylbenzylphthalate-18 J Naphthalene-69 J	ND	Lead-4.7 N		
			60	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-8 J * Toluene-2 J	Diethylphthalate-30 BJ * Di-n-butylphthalate-53 BJ *	ND	Lead-3.3 N		
		H1	2	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-6 BJ *	Bis(2-Ethylhexyl)phthalate-35 J	ND	Lead-12.8		
			5	ND	ND	ND	Methylene Chloride-5 BJ *	Bis(2-Ethylhexyl)phthalate-39 J	ND	Lead-7.5 S		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
30	Drum Storage Area (17)	A1	10	ND	ND	ND	Methylene Chloride-23 B * Acetone-25 B * 2-Butanone-4 BJ *	ND	ND	Barium-289		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-34 B * Acetone-60 B * 2-Butanone-11 BJ *	ND	ND	Barium-247			
			30	ND	ND	ND	Methylene Chloride-11 B * Acetone-9 BJ * 2-Butanone-4 BJ *	ND	ND	Barium-197			
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-18 B * Acetone-19 B * 2-Butanone-5 BJ *	ND	ND	Barium-191			
			40	ND	ND	ND	Methylene Chloride-16 B * Acetone-13 B * 2-Butanone-6 BJ *	ND	ND	Barium-252			
			50	ND	0.072	ND	Methylene Chloride-11 B * Acetone-17 B * 2-Butanone-3 BJ *	ND	ND	Barium-59.5			
			60	ND	ND	ND	Methylene Chloride-17 B * Acetone-31 B * 2-Butanone-4 BJ *	ND	ND	Barium-75			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
33	Hazardous Waste Storage Area (18)	A1	10	ND	ND	29.9	Methylene Chloride-13 B * Acetone-18 B * 2-Butanone-4 BJ *	ND	ND	NAB	Excavate shallow, stained soil.	Moderate petroleum hydrocarbon contamination. TPH/TFH > 1000 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	0.092	14.9	Methylene Chloride-14 B * Acetone-16 B * 2-Butanone-4 BJ *	ND	ND	NAB		
			30	ND	0.203	ND	Methylene Chloride-10 BJ * Acetone-9 BJ * 2-Butanone-4 BJ *	ND	ND	NAB		
			40	ND	0.166	ND	Methylene Chloride-13 B * Acetone-12 B * 2-Butanone-3 BJ *	ND	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-41 B * Acetone-16 B * 2-Butanone-4 BJ *	ND	ND	NAB		
			60	ND	0.123	ND	Methylene Chloride-75 B * Acetone-40 B * 2-Butanone-4 BJ *	ND	ND	NAB		
		H1	2	75	ND	ND	Methylene Chloride-7 BJ * Acetone-7 BJ *	Di-n-butylphthalate-21 BJ *	ND	NAB		
			2 (Duplicate)	1730	ND	390 ZJ	Methylene Chloride-5 BJ * Acetone-10 BJ * Toluene-3 J	Di-n-butylphthalate-22 BJ * Bis(2-Ethylhexyl)phthalate-27 J	ND	NAB		
			5	65	ND	ND	Methylene Chloride-8 BJ * Acetone-8 BJ * Toluene-1 J 2-Butanone-3 J	ND	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
39	Hazardous Waste Storage Area (19)	A1	10	ND	ND	ND	Methylene Chloride-10 BJ * 1,1,1-Trichloroethane-2J	Diethylphthalate-25 BJ * Di-n-butylphthalate-25 BJ * Bis(2-Ethylhexyl)phthalate-62 J Fluoranthene-29 J Pyrene-36 J Chrysene-24 J	Aroclor(1260)-52 4,4'-DDE-33 4,4'-DDD-1.6 J 4,4'-DDT-7.3	Selenium-ND Silver-ND		Shallow soil borings.	Potential for SVOCs in shallow soil. TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < ETM & PRG Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-1 J	Diethylphthalate-19 BJ * Di-n-butylphthalate-35 BJ *	ND	Selenium-ND Silver-0.44 B			
			30	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-20 B * 1,1,1-Trichloroethane-2 J	Di-n-butylphthalate-27 BJ * Butylbenzylphthalate-85 BJ *	ND	Selenium-ND Silver-0.68 B			
			40	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-1 J 1,1,1-Trichloroethane-2 J	Di-n-butylphthalate-31 BJ * Bis(2-Ethylhexyl)phthalate-30 J Butylbenzylphthalate-130 BJ *	ND	Selenium-ND Silver-ND			
			50	ND	ND	ND	Methylene Chloride-8 BJ * Acetone-7 BJ *	Di-n-butylphthalate-28 BJ *	ND	Selenium-ND Silver-ND			
			60	ND	ND	ND	Methylene Chloride-8 BJ * Acetone-17 BJ *	Diethylphthalate-20 BJ * Di-n-butylphthalate-29 BJ * Bis(2-Ethylhexyl)phthalate-120 J	ND	Selenium-ND Silver-0.43 B			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
39	Hazardous Waste Storage Area (19)	A2	10	ND	ND	11 ZJ	Methylene Chloride-5 BJ *	Di-n-butylphthalate-21 BJ * Bis(2-Ethylhexyl)phthalate-81 J	ND	Selenium-ND Silver-ND	Shallow soil borings.	Potential for SVOCs in shallow soil. TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < ETM & PRG Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-6 BJ * Toluene-1 J	Di-n-butylphthalate-25 BJ * Bis(2-Ethylhexyl)phthalate-86 J	ND	Selenium-ND Silver-0.42 B		
			30	ND	ND	ND	Methylene Chloride-19 B * Toluene-1 J	Di-n-butylphthalate-29 BJ * Bis(2-Ethylhexyl)phthalate-60 J Butylbenzylphthalate-110 J	ND	Selenium-ND Silver-0.48 B		
			40	ND	ND	ND	Methylene Chloride-12 B * Acetone-6 BJ * Toluene-2 J	Diethylphthalate-38 J Di-n-butylphthalate-37 BJ Bis(2-Ethylhexyl)phthalate-58 J	ND	Selenium-ND Silver-0.64 B		
			40 (Duplicate)	ND	ND	ND	Methylene Chloride-8 BJ * Acetone-13 B * Toluene-1 J	Diethylphthalate-19 J Di-n-butylphthalate-22 BJ * Bis(2-Ethylhexyl)phthalate-40 J Butylbenzylphthalate-160 J	ND	Selenium-ND Silver-0.45 B		
			50	ND	ND	ND	Methylene Chloride-11 B *	Di-n-butylphthalate-21 BJ * Bis(2-Ethylhexyl)phthalate-34 J	ND	Selenium-ND Silver-0.63 B		
			60	ND	ND	ND	Methylene Chloride-18 B * Acetone-5 BJ *	Di-n-butylphthalate-32 BJ * Bis(2-Ethylhexyl)phthalate-110 J Butylbenzylphthalate-100 J	ND	Selenium-ND Silver-0.42 B		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
39	Hazardous Waste Storage Area (19)	H1	2	ND	ND	ND	Methylene Chloride-5 BJ * Toluene-1 J	Di-n-butylphthalate-95 BJ	ND	Selenuim-ND Silver-ND	Shallow soil borings.	Potential for SVOCs in shallow soil. TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < ETM & PRG Metals < ETM & PRG CRDL - Contract Required Detection Limit
			5	ND	ND	ND	Methylene Chloride-5 J * Acetone-1 J * Toluene-2 J	Di-n-butylphthalate-52 BJ Bis(2-Ethylhexyl)phthalate-37 J	ND	Selenuim-ND Silver-ND		
		H2	2	ND	ND	ND	Methylene Chloride-4 J * Acetone-81 * Toluene-1 J	Di-n-butylphthalate-36 BJ Bis(2-Ethylhexyl)phthalate-71 J	ND	Selenium-0.62 B Silver-4.0		
			5	46	ND	ND	Methylene Chloride-5 BJ * Toluene-2 J	Di-n-butylphthalate-170 BJ	ND	Selenuim-ND Silver-ND		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
41	Vehicle Wash Rack (20)	H1	2	340	NA	NA	Methylene Chloride-7 BJ * Toluene-2 J	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			5	ND	NA	NA	Methylene Chloride-4 BJ * Toluene-1 J	NA	NA	NA			
		H2	2	ND	NA	NA	Methylene Chloride-5 BJ * Toluene-1 J	NA	NA	NA			CRDL - Contract Required Detection Limit
			5	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	RECOMMENDATIONS Rationale
45	Drum Storage Area (21)	H1	2	55	ND	ND	Methylene Chloride-3 BJ * Acetone-10 BJ *	ND	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < ETM & PRG Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			5	38	ND	ND	Methylene Chloride-4 BJ * Acetone-6 BJ *	Phenol-43 J	Aroclor(1260)-140	NAB		
		H2	2	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-7 BJ * Toluene-1 J	Bis(2-Ethylhexyl)phthalate-35 J	ND	NAB		
			5	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-5 BJ *	ND	ND	NAB		
		H3	2	20	ND	ND	Methylene Chloride-4 BJ * Acetone-8 BJ *	Bis(2-Ethylhexyl)phthalate-82 J	ND	NAB		
			2 (Duplicate)	ND	ND	ND	ND	ND	Aroclor(1260)-160 P	NAB		
			5	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-6 BJ *	Bis(2-Ethylhexyl)phthalate-130 J	Aroclor(1260)-85	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
46	Equipment Storage Yard (22)	H1	2	ND	NA	NA	Methylene Chloride-38 B * Toluene-7 J	NA	NA	NA	Additional borings.	Petroleum hydrocarbon contamination, unknown extent.
			5	ND	NA	NA	Methylene Chloride-31 B * Toluene-2 J	NA	NA	NA		
		H2	2	6660	NA	NA	Methylene Chloride-39 B * Toluene-6 J	NA	NA	NA		TPH/TFH > 1000 ppm VOCs < CRDL
			5	6100	NA	NA	Methylene Chloride-38 B * Toluene-12	NA	NA	NA		CRDL - Contract Required Detection Limit
		H3	2	58.9	NA	NA	Methylene Chloride-41 B * Toluene-4 J	NA	NA	NA		
			5	57	NA	NA	Methylene Chloride-13 B * Toluene-3 J	NA	NA	NA		
		H4	2	174	NA	NA	Methylene Chloride-13 B * Toluene-4 J	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-8 B * Toluene-1 J	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		
					Gasoline	Diesel					Action	Rationale
48	Underground Storage Tank (23)	A1	10	822	NA	NA	Methylene Chloride-5 BJ * Acetone-10 BJ *	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-25 B *	NA	NA	NA		
			30	88	NA	NA	Methylene Chloride-6 BJ * Acetone-14 B *	NA	NA	NA		CRDL - Contract Required Detection Limit
			40	ND	NA	NA	Methylene Chloride-3 BJ *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-10 BJ *	NA	NA	NA		
			60	126	NA	NA	Methylene Chloride-4 BJ * Acetone-6 BJ *	NA	NA	NA		
		A2	10	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-10 J *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-16 *	NA	NA	NA		
			20 (Duplicate)	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-18 *	NA	NA	NA		
			30	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-11 J *	NA	NA	NA		
			40	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-17 *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-16 *	NA	NA	NA		
			60	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-2 J *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
49	Underground Storage Tank (23)	A1	10	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-20 *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			20	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-41 *	NA	NA	NA		
			30	72	NA	NA	Methylene Chloride-4 BJ * Acetone-13 *	NA	NA	NA		CRDL - Contract Required Detection Limit
			40	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-13 *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-18 *	NA	NA	NA		
			60	63	NA	NA	Methylene Chloride-5 BJ * Acetone-22 *	NA	NA	NA		
			60 (Duplicate)	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-19 *	NA	NA	NA		
		A2	10	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-18 B *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-8 BJ *	NA	NA	NA		
			30	38	NA	NA	Methylene Chloride-6 BJ * Acetone-54 B *	NA	NA	NA		
			40	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-20 *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-13 *	NA	NA	NA		
			60	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-9 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
57	Underground Storage Tank (24)	A1	10	ND	NA	NA	Methylene Chloride-17 B * Acetone-13 B *	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	166	NA	NA	Methylene Chloride-14 B * Acetone-10 BJ *	NA	NA	NA		
			30	ND	NA	NA	Methylene Chloride-13 B * Acetone-14 B *	NA	NA	NA		CRDL - Contract Required Detection Limit
			40	98	NA	NA	Methylene Chloride-12 B * Acetone-7 BJ *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-13 B * Acetone-12 B *	NA	NA	NA		
			60	ND	NA	NA	Methylene Chloride-12 B * Acetone-18 B *	NA	NA	NA		
		A2	10	474	NA	NA	Acetone-16 B *	NA	NA	NA		
			20	118	NA	NA	Methylene Chloride-3 BJ * Acetone-19 B *	NA	NA	NA		
			30	ND	NA	NA	Methylene Chloride-3 BJ *	NA	NA	NA		
			40	ND	NA	NA	Acetone-64 B *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-3 BJ * Acetone-41 B *	NA	NA	NA		
			60	ND	NA	NA	Methylene Chloride-3 BJ * Acetone-31 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
59	Underground Storage Tank (24)	A1	10	91	NA	NA	MethyleneChloride-9 BJ * Acetone-17 B *	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	ND	NA	NA	MethyleneChloride-7 BJ * Acetone-9 BJ *	NA	NA	NA			
			30	ND	NA	NA	MethyleneChloride-11 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			40	ND	NA	NA	MethyleneChloride-17 B * Acetone-45 *	NA	NA	NA			
			40 (Duplicate)	ND	NA	NA	MethyleneChloride-8 BJ * Acetone-12 B *	NA	NA	NA			
			50	ND	NA	NA	MethyleneChloride-10 BJ * Acetone-15 *	NA	NA	NA			
			60	ND	NA	NA	MethyleneChloride-12 B * Acetone-22 *	NA	NA	NA			
		A2	10	80	NA	NA	ND	NA	NA	NA			
			20	139	NA	NA	Acetone-8 BJ *	NA	NA	NA			
			30	94	NA	NA	MethyleneChloride-2 BJ * Acetone-7 BJ *	NA	NA	NA			
			40	ND	NA	NA	Acetone-7 BJ *	NA	NA	NA			
			50	ND	NA	NA	Acetone-5 BJ *	NA	NA	NA			
			60	116	NA	NA	Acetone-13 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
65	Underground Storage Tank (16)	B1	5	ND	NA	NA	Methylene Chloride-25 B * Toluene-4 J	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	ND	NA	NA	Methylene Chloride-9 BJ *	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-14 B *	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-16 B * Toluene-4 J	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-10 BJ *	NA	NA	NA			
			25 (Duplicate)	ND	NA	NA	Methylene Chloride-8 BJ * Toluene-2 J	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
70	Hazardous Waste Storage Area (25)	A1	10	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-15 B *	ND	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	49	ND	ND	Methylene Chloride-16 B * Acetone-18 B * Toluene-2 J 2-Butanone-4 J	Bis(2-Ethylhexyl)phthalate-230 J	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-12 B * Acetone-7 BJ * 2-Butanone-3 J	ND	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-9 BJ * 2-Butanone-2 J	ND	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-12 B * 2-Butanone-3 J	ND	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-16 B * Acetone-35 B * 2-Butanone-3 J	Bis(2-Ethylhexyl)phthalate-820	ND	NAB		
		H1	2	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-12 B * Toluene-2 J	Di-n-butylphthalate-22 BJ *	ND	NAB		
			5	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-11 B *	Di-n-butylphthalate-19 BJ * Bis(2-Ethylhexyl)phthalate-19 J	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
73	Hazardous Waste Storage Area (26)	A1	10	ND	ND	ND	Methylene Chloride-9 BJ *	Di-n-butylphthalate-31 BJ *	ND	Aluminum-26900	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			10 (Duplicate)	ND	ND	ND	Methylene Chloride-6 BJ * Toluene-2 J	Diethylphthalate-35 J Di-n-butylphthalate-34 BJ * Bis(2-Ethylhexy)phthalate-22 BJ *	ND	Aluminum-21100		
			20	ND	ND	ND	Methylene Chloride-18 B * Toluene-1 J	Diethylphthalate-38 J Di-n-butylphthalate-32 BJ * Bis(2-Ethylhexy)phthalate-23 BJ *	ND	Aluminum-4500		
			30	ND	ND	ND	Methylene Chloride-18 B *	Diethylphthalate-30 J Di-n-butylphthalate-32 BJ * Bis(2-Ethylhexy)phthalate-35 BJ *	ND	Aluminum-842		
			40	ND	ND	ND	Methylene Chloride-12 B *	Diethylphthalate-25 J	ND	Aluminum-8320		
			50	ND	ND	ND	Methylene Chloride-10 BJ * Toluene-3 J	Diethylphthalate-27 J Di-n-butylphthalate-32 BJ * Bis(2-Ethylhexy)phthalate-38 BJ *	ND	Aluminum-16700		
			60	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-3 J *	Diethylphthalate-22 J Di-n-butylphthalate-22 BJ *	ND	Aluminum-12000		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
76	Oil/Water Separator (27)	B1	5	40.6	NA	NA	Methylene Chloride-6 BJ * Xylene-7 J	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-12 BJ * Toluene-3 J TCE-12 J Bromoform-1 J Xylene-2 J	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			20	ND	NA	NA	Methylene Chloride-6 BJ * Toluene-1 J TCE-3 J	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-4 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	RECOMMENDATIONS Rationale
83	Hazardous Waste Storage Area (28)	A1	10	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-33 B * Toluene-2 J	Diethylphthalate-40 BJ * Di-n-butylphthalate-20 BJ *	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-12 BJ * Acetone-34 B *	Diethylphthalate-37 BJ * Di-n-butylphthalate-46 BJ * Bis(2-Ethylhexyl)phthalate-29 J	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-4 J *	Diethylphthalate-25 BJ * Di-n-butylphthalate-31 BJ * Bis(2-Ethylhexyl)phthalate-33 J	ND	NAB		
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-13 B * Acetone-6 BJ *	Diethylphthalate-41 J Di-n-butylphthalate-43 BJ *	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-5 J * Toluene-1 J	Diethylphthalate-33 BJ * Di-n-butylphthalate-27 BJ * Bis(2-Ethylhexyl)phthalate-20 J	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-10 BJ * Toluene-2 J	Diethylphthalate-24 BJ * Di-n-butylphthalate-96 BJ *	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-16 B * Acetone-18 B * Toluene-2 J	Diethylphthalate-36 J Di-n-butylphthalate-64 BJ *	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
84	Oil/Water Separator (28)	B1	5	ND	NA	NA	Methylene Chloride-15 B * Acetone-11 BJ * 2-Butanone-2 BJ *	NA	NA	NA	Leak test/ inspection of separator.	Moderate petroleum hydrocarbon contamination at 10-foot depth. TPH/TFH < 1000 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	901 J	NA	NA	Methylene Chloride-16 B * Acetone-15 B * 2-Butanone-3 BJ *	NA	NA	NA		
			15	ND	NA	NA	Methylene Chloride-22 B * Acetone-14 B * 2-Butanone-4 BJ *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-2 J * Acetone-12 B * 2-Butanone-4 BJ *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-3 J * Acetone-13 B * 2-Butanone-3 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS								
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
88	Drum Storage Area (29)	A1	10	ND	ND	ND	Methylene Chloride-26 B * Toluene-2 J	Diethylphthalate-70 BJ * Di-n-butylphthalate-64 BJ *	ND	Barium-149 Lead-4.1 Mercury-ND Zinc-41.6	Shallow Soil Boring	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG
			20	41.1	ND	ND	Methylene Chloride-41 B *	Diethylphthalate-69 BJ * Di-n-butylphthalate-57 BJ *	ND	Barium-109 Lead-1.5 Mercury-ND Zinc-29.1		
			30	ND	ND	ND	Methylene Chloride-38 B *	Diethylphthalate-43 BJ * Di-n-butylphthalate-31 BJ *	ND	Barium-177 Lead-3.9 Mercury-ND Zinc-73.7		CRDL - Contract Required Detection Limit
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-40 B * Toluene-2 J	Diethylphthalate-41 BJ * Di-n-butylphthalate-37 BJ *	ND	Barium-115 Lead-3.8 Mercury-ND Zinc-56.1		
			40	ND	ND	ND	Methylene Chloride-21 B *	Diethylphthalate-47 J Di-n-butylphthalate-51 BJ *	ND	Barium-48.6 Lead-3.4 Mercury-ND Zinc-23.2		
			50	ND	ND	ND	Methylene Chloride-36 B * Toluene-1 J	Diethylphthalate-35 J Di-n-butylphthalate-35 BJ *	ND	Barium-47 Lead-1.6 Mercury-ND Zinc-23.1		
			60	ND	ND	ND	Methylene Chloride-20 B *	Diethylphthalate-56 J Di-n-butylphthalate-38 BJ *	ND	Barium-32.5 B Lead-1.1 Mercury-ND Zinc-12.5		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS		
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
88	Drum Storage Area (29)	A2	10	ND	ND	ND	Methylene Chloride-6 BJ * Toluene-1 J	Diethylphthalate-25 BJ * Di-n-butylphthalate-32 BJ *	Aroclor(1260)-11 J	Barium-3560 Lead-164 Mercury-0.38 Zinc-366	Shallow Soil Boring	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-7 BJ *	Diethylphthalate-35 BJ * Di-n-butylphthalate-43 BJ *	ND	Barium-47.6 Lead-0.76 Mercury-ND Zinc-16.3		
			30	ND	ND	ND	Methylene Chloride-6 BJ *	Di-n-butylphthalate-34 BJ *	ND	Barium-130 Lead-3.1 Mercury-ND Zinc-49.8		
			40	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-5 BJ *	Diethylphthalate-40 BJ * Di-n-butylphthalate-37 BJ * Bis(2-Ethylhexyl)phthalate-55 J	ND	Barium-20.7 B Lead-0.58 Mercury-ND Zinc-5.8		
			50	ND	ND	ND	Methylene Chloride-5 BJ *	Di-n-butylphthalate-32 BJ *	ND	Barium-86.8 Lead-3.1 Mercury-ND Zinc-43.4		
			60	ND	ND	ND	ND (Missed Holding Time)	Diethylphthalate-47 BJ * Di-n-butylphthalate-40 BJ *	ND	Barium-146 Lead-1.8 Mercury-ND Zinc-26.4		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS TPH (mg/kg)	TFH (mg/kg) Gasoline	Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	Rationale
90	Former Sewage Treatment Plant (30)	H1	2	78.1	ND	ND	Methylene Chloride-8 BJ *	Di-n-butylphthalate-23 J	ND	Arsenic-3.1 Mercury-ND Selenium-ND Silver-0.73 B Thallium-ND Lead-2.9 Zinc-71.6	NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG SVOCs < ETM & PRG Pest/PCB < ETM & PRG Metals: See Section 6.3.4
			5	ND	ND	ND	Methylene Chloride-13 B * Toluene-2 J	Diethylphthalate-22 J Di-n-butylphthalate-30 J	ND	Arsenic-2.5 Mercury-ND Selenium-ND Silver-0.66 B Thallium-ND Lead-2.9 Zinc-65.2		
		H2	2	ND	ND	ND	Methylene Chloride-11 BJ * Acetone-6 J * Toluene-5 J	Di-n-butylphthalate-25 J	Alpha-chlordane-6.6 Gamma-chlordane-5.7 Aroclor(1260)-12 JP	Arsenic-4.0 Mercury-0.69 Selenium-0.64 B Silver-1.7 B Thallium-ND Lead-9.8 Zinc-88.6		
			5 No sample taken	NA	NA	NA	NA	NA	NA	NA		
		H3	2	ND	ND	ND	Methylene Chloride-11 BJ * Toluene-3 J	Diethylphthalate-160 J Di-n-butylphthalate-54 J Bis(2-Ethylhexyl)phthalate-170 J Butylbenzylphthalate-21 J Naphthalene-19 J 4-Chloroaniline-130 J 2-Methylnaphthalene-22 J Dimethylphthalate-94 J Phenanthrene-30 J Fluoranthene-130 J Pyrene-100 J Benzo(a)Anthracene-140 J Chrysene-170 J Benzo(b)Fluoranthene-210 J Benzo(k)Fluoranthene-200 J Benzo(a)Pyrene-190 J Indeno(1,2,3-cd)Pyrene-210 J Benzo(g,h,i)Perylene-92 J	Alpha-chlordane- 13 J Gamma-chlordane-7.5 JP Aroclor(1260)-310 J 4,4'-DDE-38 P 4,4'-DDD-32 JP 4,4'-DDT-67 P	Arsenic-3.2 Mercury-6.1 Selenium-0.95 B Silver-13.1 B Thallium-ND Lead-64.6 Zinc-261		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
				ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
90	Former Sewage Treatment Plant (30)	H3	4	ND	ND	ND	Methylene Chloride-13 B * Toluene-5 J	Di-n-butylphthalate-23 J Bis(2-Ethylhexyl)phthalate-440 Fluoranthene-70 J Pyrene-64 J Benzo(a)Anthracene-30 J Chrysene-37 J Benzo(b)Fluoranthene-32 J	ND	Arsenic-2.7 Mercury-0.44 Selenium-ND Silver-1.0 B Thallium-ND Lead-8.1 Zinc-1440	NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG SVOCs < ETM & PRG Pest/PCB < ETM & PRG Metals: See Section 6.3.4
		H4	2	61.1	ND	ND	Methylene Chloride-7 BJ * Toluene-3 J	Diethylphthalate-26 J Di-n-butylphthalate-63 J Bis(2-Ethylhexyl)phthalate-65 J Butylbenzylphthalate-21 J	4,4'-DDE-18 4,4'-DDD-1.1 JP 4,4'-DDT-33	Arsenic-2.7 Mercury-0.55 Selenium-ND Silver-1.1 B Thallium-ND Lead-5.8 Zinc-64.9		
			2 (Duplicate)	ND	ND	ND	Methylene Chloride-26 B * Acetone-26 B * Toluene-3 J	Diethylphthalate-32 J Di-n-butylphthalate-30 J	ND	Arsenic-4.5 Mercury-0.18 Selenium-ND Silver-1.7 B Thallium-ND Lead-16.0 Zinc-68.2		
			5	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-2 J	Di-n-butylphthalate-33 J	ND	Arsenic-1.8 B Mercury-ND Selenium-ND Silver-0.55 B Thallium-ND Lead-3.5 Zinc-74.3		
		H 5	2	ND	ND	ND	Methylene Chloride-9 BJ * Toluene-12	Diethylphthalate-75 J Di-n-butylphthalate-43 J Bis(2-Ethylhexyl)phthalate-49 J Butylbenzylphthalate-310 J Pyrene-22 J	Alpha-chlordane-2 Gamma-chlordane-1.3 JP Aroclor(1260)-22 J 4,4'-DDE-17 4,4'-DDD-6.2 4,4'-DDT-19	Arsenic-5.3 Mercury-0.37 Selenium-ND Silver-2.1 Thallium-ND Lead-11.7 Zinc-70.8		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg): Gasoline	TFH (mg/kg): Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
90	Former Sewage Treatment Plant (30)	H5	5	ND	ND	ND	Methylene Chloride-14 B * Acetone-10 BJ *	Di-n-butylphthalate-22 J Bis(2-Ethylhexyl)phthalate-37 J	ND	Arsenic-2.4 Mercury-ND Selenium-ND Silver-0.82 B Thallium-ND Lead-7.5 Zinc-65.8	NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG SVOCs < ETM & PRG Pest/PCB < ETM & PRG Metals: See Section 6.3.4
		H6	2	ND	ND	ND	Methylene Chloride-13 B * Acetone-12 B * Toluene-4 J	Diethylphthalate-19 J Di-n-butylphthalate-30 J Bis(2-Ethylhexyl)phthalate-47 J Butylbenzylphthalate-390	4,4'-DDE-70 4,4'-DDT-23	Arsenic-4.2 Mercury-0.08 Selenium-ND Silver-0.37 B Thallium-ND Lead-12.0 Zinc-68.0		
			5	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-13 B *	Diethylphthalate-24 J Di-n-butylphthalate-24 J	ND	Arsenic-3.1 Mercury-ND Selenium-ND Silver-0.45 B Thallium-ND Lead-2.6 Zinc-85.8		
		H7	2	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-10 BJ * Toluene-2 J 2-Butanone-3 J	Di-n-butylphthalate-40 J Bis(2-Ethylhexyl)phthalate-35 J	Aroclor(1260)-18 JP 4,4'-DDE-47 4,4'-DDD-1.8 JP 4,4'-DDT-32	Arsenic-3.4 Mercury-0.27 Selenium-ND Silver-0.86 B Thallium-ND Lead-5.9 Zinc-69.8		
			5	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-17 B *	Di-n-butylphthalate-24 J Naphthalene-19 J	ND	Arsenic-103 Mercury-ND Selenium-ND Silver-0.76 B Thallium-0.94 B Lead-5.2 Zinc-67.1		
			5 (Duplicate)	ND	ND	ND	Methylene Chloride-44 B * Acetone-28 B * Toluene-2 J	Diethylphthalate-51 J Di-n-butylphthalate-31 J Bis(2-Ethylhexyl)phthalate-27 J	ND	Arsenic-94.5 Mercury-ND Selenium-ND Silver-0.94 B Thallium-ND Lead-22.5 Zinc-73.8		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
90	Former Sewage Treatment Plant (30)	H8	2	ND	ND	ND	Methylene Chloride-12 B * Acetone-11 BJ *	Diethylphthalate-310 J Di-n-butylphthalate-24 J	ND	Arsenic-2.3 Mercury-ND Selenium-ND Silver-0.41 B Thallium-ND Lead-2.5 Zinc-40.4	NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG SVOCs < ETM & PRG Pest/PCB < ETM & PRG Metals: See Section 6.3.4
			5	ND	ND	ND	Methylene Chloride-12 B * Acetone-11 BJ * Toluene-1 J	Diethylphthalate-92 J Di-n-butylphthalate-32 J	ND	Arsenic-4.4 Mercury-ND Selenium-0.93 B Silver-0.63 B Thallium-ND Lead-4.9 Zinc-91.1		
		H9	2	59.4	ND	ND	Methylene Chloride-19 B * Acetone-19 B * Toluene-2 J	Diethylphthalate-18 J Di-n-butylphthalate-33 J Fluoranthene-28 J Pyrene-27 J Benzo(a)Anthracene-23 J Chrysene-29 J Benzo(b)Fluoranthene-22 J Indeno(1,2,3-cd)Pyrene-25 J	Aroclor(1254)-13 JP 4,4'-DDE-2.3 JP 4,4'-DDT-3.7 P	Arsenic-2.7 Mercury-7.4 Selenium-ND Silver-1.2 B Thallium-ND Lead-5.0 Zinc-65.7		
			5 No Sample taken	NA	NA	NA	NA	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
91	Underground Storage Tank (31)	A1	10	249	NA	NA	Methylene Chloride-5 BJ * Acetone-13 B *	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
		A2	10	152	NA	NA	Methylene Chloride-5 BJ * Acetone-9 BJ *	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-17 B *	NA	NA	NA			CRDL - Contract Required Detection Limit
			30	159	NA	NA	Methylene Chloride-4 BJ *	NA	NA	NA			
			40	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-12 *	NA	NA	NA			
			50	187	NA	NA	Methylene Chloride-5 BJ * Acetone-9 J *	NA	NA	NA			
			60	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-15 *	NA	NA	NA			
			60 (Duplicate)	142	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA			
		B1	5	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA			
			10	ND	NA	NA	Methylene Chloride-18 BJ * Acetone-58 B *	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA			
			20	86	NA	NA	Methylene Chloride-6 BJ * Acetone-18 *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-13 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
92	Underground Storage Tank (31)	A1	10	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	178	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA			
			30	151	NA	NA	Methylene Chloride-4 BJ * Acetone-10 J *	NA	NA	NA			CRDL - Contract Required Detection Limit
			40	119	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA			
			40 (Duplicate)	86	NA	NA	Methylene Chloride-5 BJ * Acetone-9 J *	NA	NA	NA			
			50	69	NA	NA	Methylene Chloride-7 BJ * Acetone-21 *	NA	NA	NA			
			60	138	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA			
		A2	10	416	NA	NA	Methylene Chloride-3 BJ * Acetone-25 B *	NA	NA	NA			
			20	117	NA	NA	Acetone-21 B *	NA	NA	NA			
			30	ND	NA	NA	Acetone-24 B *	NA	NA	NA			
			40	ND	NA	NA	Methylene Chloride-2 BJ * Acetone-32 B *	NA	NA	NA			
			50	105	NA	NA	Methylene Chloride-3 BJ * Acetone-27 B *	NA	NA	NA			
			60	185	NA	NA	Methylene Chloride-3 BJ * Acetone-24 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
95	Engine Test Cell (32)	H1	2	ND	ND	ND	Methylene Chloride-15 B * Toluene-1 J	Diethylphthalate-22 J Di-n-butylphthalate-25 J	4,4'-DDE-1.7 JP 4,4'-DDT-6.0	Silver-0.38 B	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < ETM & PRG Metals < ETM & PRG CRDL - Contract Required Detection Limit
			5	ND	ND	ND	Methylene Chloride-17 B * Acetone-23 * Toluene-2 J PCE-2 J	Di-n-butylphthalate-29 J	ND	Silver-0.61 B		
		H2	2	ND	ND	ND	Methylene Chloride-13 B * Acetone-15 * Toluene-2 J	Di-n-butylphthalate-29 J	ND	Silver-0.46 B		
			5	ND	ND	ND	Methylene Chloride-12 B * Acetone-14 * Toluene-2 J	Diethylphthalate-20 J Di-n-butylphthalate-27 J	4,4'-DDT-2.5 JP	Silver-0.40 B		
		H3	2	47.2	ND	ND	Methylene Chloride-9 BJ * Acetone-12 *	Di-n-butylphthalate-28 J	4,4'-DDT-3.0 JP	Silver-0.36 B		
			5	ND	ND	ND	Methylene Chloride-17 B * Acetone-14 * Toluene-5 J PCE-3 J	Di-n-butylphthalate-30 J	4,4'-DDT-4.4	Silver-0.62 B		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
98	Vehicle Wash Rack (33)	H1	2	ND	NA	NA	Methylene Chloride-19 B * Acetone-16 B * 2-Butanone-3 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			5	ND	NA	NA	Methylene Chloride-9 BJ * Acetone-11 BJ * 2-Butanone-8 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
		H2	2	ND	NA	NA	Methylene Chloride-15 B * Acetone-16 B * 2-Butanone-3 BJ *	NA	NA	NA			
			2 (Duplicate)	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-18 B * 2-Butanone-3 BJ *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-11 BJ * Acetone-6 BJ * 2-Butanone-3 BJ *	NA	NA	NA			
		H3	2	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-5 BJ * 2-Butanone-2 BJ *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-11 BJ * Acetone-15 B * 2-Butanone-3 BJ *	NA	NA	NA			
		H4	2	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-15 B * 2-Butanone-3 BJ *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-33 B * 2-Butanone-3 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT --SAMPLING VISIT RESULTS													
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS								
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
99	Drum Storage Area (33)	B1	5	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-1 J	Diethylphthalate-20 BJ * Di-n-butylphthalate-65 BJ * Bis(2-Ethylhexyl)phthalate-60 BJ *	ND	Silver-ND Lead-90.3	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			10	ND	ND	ND	Methylene Chloride-5 BJ * Toluene-1 J	Diethylphthalate-35 BJ * Di-n-butylphthalate-37 BJ * Bis(2-Ethylhexyl)phthalate-580 B	ND	Silver-ND Lead-1.7		
			15	ND	ND	ND	Methylene Chloride-6 BJ * Toluene-2 J	Diethylphthalate-43 BJ * Di-n-butylphthalate-51 BJ * Bis(2-Ethylhexyl)phthalate-39 BJ *	ND	Silver-ND Lead-2.9		
			20	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J	Diethylphthalate-25 BJ * Di-n-butylphthalate-69 BJ * Bis(2-Ethylhexy)phthalate-920 B	ND	Silver-ND Lead-0.7		
			25	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J	Diethylphthalate-31 BJ * Di-n-butylphthalate-61 BJ * Bis(2-Ethylhexyl)phthalate-160 BJ *	ND	Silver-ND Lead-1.2		
			25 (Duplicate)	ND	ND	ND	Methylene Chloride-5 BJ * Toluene-1 J	Diethylphthalate-18 BJ * Di-n-butylphthalate-44 BJ * Bis(2-Ethylhexyl)phthalate-64 BJ *	ND	Silver-ND Lead-5.1		
		B2	5	ND	ND	ND	Methylene Chloride-9 BJ * Toluene-1 J	Bis(2-Ethylhexyl)phthalate-94 J	ND	Silver-0.82 B Lead-2.3		
			10	ND	ND	ND	Methylene Chloride-10 BJ *	Diethylphthalate-22 BJ * Di-n-butylphthalate-23 BJ * Bis(2-Ethylhexyl)phthalate-110 J Di-n-octylphthalate-22 J	ND	Silver-ND Lead-1.1		
			15	ND	ND	ND	Methylene Chloride-8 BJ *	Diethylphthalate-170 BJ * Di-n-butylphthalate-23 BJ * Bis(2-Ethylhexyl)phthalate-66 J	ND	Silver-ND Lead-3.9		
			20	ND	ND	ND	Methylene Chloride-6 BJ *	Diethylphthalate-22 BJ * Bis(2-Ethylhexyl)phthalate-94 J	ND	Silver-ND Lead-4.5		
			25	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J	Diethylphthalate-44 BJ * Di-n-butylphthalate-20 BJ * Bis(2-Ethylhexyl)phthalate-68 J	ND	Silver-ND Lead-1.7		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
100	TCE Degreaser (33)	A1	10	273	NA	NA	Methylene Chloride-5 BJ * Acetone-26 B *	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	596	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA		
			30	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-20 B *	NA	NA	NA		CRDL - Contract Required Detection Limit
			30 (Duplicate)	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-16 B *	NA	NA	NA		
			40	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-16 B *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-11 B *	NA	NA	NA		
			60	ND	NA	NA	Methylene Chloride-4 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
101	Oil/Water Separator (33)	B1	5	170	NA	NA	Methylene Chloride-7 BJ * Acetone-9 BJ *	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			10	83	NA	NA	Methylene Chloride-7 BJ * Acetone-6 BJ *	NA	NA	NA			
			15	100	NA	NA	Methylene Chloride-4 BJ * Acetone-11 B *	NA	NA	NA			CRDL - Contract Required Detection Limit
			20	122	NA	NA	Methylene Chloride-5 BJ * Acetone-11 BJ *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-8 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS									
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
102	Underground Storage Tank (33)	B1	5	NA	ND	170 Z	Methylene Chloride-8 BJ * Acetone-20 * Toluene-2 J Ethylbenzene-3 J Xylene-15	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < ETM & PRG
			10	NA	ND	ND	Methylene Chloride-6 BJ * Acetone-6 BJ * Toluene-1 J	NA	NA	NA		
			10 (Duplicate)	NA	ND	ND	Methylene Chloride-5 BJ * Acetone-2 BJ *	NA	NA	NA		
			15	NA	ND	ND	Methylene Chloride-12 BJ * Toluene-3 BJ *	NA	NA	NA		
			20	NA	ND	ND	Methylene Chloride-5 BJ *	NA	NA	NA		
			25	NA	ND	ND	Methylene Chloride-6 BJ * Toluene-2 J	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT - - SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
107	Hazardous Waste Storage Area (34)	H1	2	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-10 BJ * 2-Butanone-3 J	Di-n-butylphthalate-120 BJ *	ND	NAB		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			5	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-8 BJ *	ND	ND	NAB			
		H2	2	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-10 BJ *	ND	ND	NAB			
			5	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-10 BJ *	Di-n-butylphthalate-43 BJ *	ND	NAB			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS TPH (mg/kg)	TFH (mg/kg) Gasoline	Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	Rationale
110	Vehicle Wash Rack (35)	H1	2	ND	NA	NA	Methylene Chloride-4 J * Acetone-4 BJ * Toluene-1 J *	NA	NA	NA	Repair cracks in pavement.	To prevent future migration of petroleum hydrocarbons. TPH/TFH < 1000 ppm VOCs < ETM & PRG
			5	ND	NA	NA	Methylene Chloride-3 J * 2-Butanone-2 J	NA	NA	NA		
		H2	2	680	NA	NA	Methylene Chloride-4 J * Acetone-4 BJ * Toluene-1 J *	NA	NA	NA		
			2 (Duplicate)	590	NA	NA	Methylene Chloride-4 J * Acetone-10 BJ * Toluene-4 J * 2-Butanone-3 J Ethylbenzene-5 J Xylene-62 PCE-11 J	NA	NA	NA		
			5	440	NA	NA	Methylene Chloride-20 BJ * Acetone-14 BJ * 2-Butanone-5 J Xylene-13 J	NA	NA	NA		
		H3	2	ND	NA	NA	Methylene Chloride-4 J * Acetone-7 BJ * Toluene-1 J *	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-6 J * Toluene-1 J *	NA	NA	NA		
		H4	2	ND	NA	NA	Methylene Chloride-4 J * Acetone-5 BJ *	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-4 J * Acetone-4 BJ * Toluene-1 J *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
112	Oil/Water Separator (35)	A1	10	ND	NA	NA	Methylene Chloride-3 J * Acetone-24 B * 2-Butanone-4 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			20	ND	NA	NA	Acetone-27 B * 2-Butanone-4 BJ *	NA	NA	NA			
			30	ND	NA	NA	Acetone-24 B * 2-Butanone-3 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			40	ND	NA	NA	Methylene Chloride-3 J * Acetone-18 B * 2-Butanone-3 BJ *	NA	NA	NA			
			40 (Duplicate)	ND	NA	NA	Methylene Chloride-13 B * Acetone-13 B * 2-Butanone-3 J	NA	NA	NA			
			50	ND	NA	NA	Methylene Chloride-24 B * Acetone-34 B * 2-Butanone-3 J	NA	NA	NA			
			60	ND	NA	NA	Methylene Chloride-12 BJ * Acetone-11 BJ * 2-Butanone-3 J	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
116	Drum Storage Area (26)	A1	10	ND	ND	ND	Methylene Chloride-17 B * Toluene-3 J	Diethylphthalate-50 BJ * Di-n-butylphthalate-27 J	ND	Selenium-ND	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-13 B * Toluene-2 J	Diethylphthalate-78 BJ * Di-n-butylphthalate-37 J Butylbenzylphthalate-380 BJ	ND	Selenium-ND		
			30	ND	ND	ND	Methylene Chloride-6 BJ *	Diethylphthalate-40 BJ * Di-n-butylphthalate-24 J	ND	Selenium-ND		
			40	ND	ND	ND	Methylene Chloride-13 B * Toluene-3 J	Diethylphthalate-37 BJ *	ND	Selenium-ND		
			50	ND	ND	ND	Methylene Chloride-15 B * Toluene-2 J	Diethylphthalate-110 BJ * Di-n-butylphthalate-70 J Di-n-octylphthalate-170 J	ND	Selenium-0.59 B		
			60	ND	ND	ND	Methylene Chloride-10 BJ *	Diethylphthalate-180 BJ * Butylbenzylphthalate-86 BJ *	ND	Selenium-ND		
			60 (Duplicate)	ND	ND	ND	Methylene Chloride-13 B *	Diethylphthalate-41 J Di-n-butylphthalate-43 BJ * Bis(2-Ethylhexyl)phthalate-93 BJ *	ND	Selenium-ND		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
120	Vehicle Wash Rack (36)	H1	2	ND	NA	NA	Methylene Chloride-9 BJ * Acetone-63 B * 2-Butanone-3 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			5	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-20 B * 2-Butanone-2 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			5 (Duplicate)	ND	NA	NA	Methylene Chloride-46 B * Acetone-7 BJ *	NA	NA	NA			
		H2	2	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-67 B * 2-Butanone-2 BJ *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-24 B * Acetone-6 BJ * 2-Butanone-2 J	NA	NA	NA			
		H3	2	ND	NA	NA	Methylene Chloride-58 B * Acetone-16 B * 2-Butanone-3 J	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-71 B * Acetone-9 BJ * 2-Butanone-2 J	NA	NA	NA			
		H4	2	ND	NA	NA	Methylene Chloride-21 B * Acetone-4 BJ * 2-Butanone-3 BJ *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-52 B * Acetone-10 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
124	Hazardous Waste Storage Area (37)	A1	10	ND	ND	ND	Methylene Chloride-12 B * Acetone-11 BJ * Toluene-2 J	Diethylphthalate-33 BJ * Bis(2-Ethylhexyl)phthalate-140 J	ND	Silver-0.53 B		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-10 BJ * Acetone-6 BJ * Toluene-2 J	Diethylphthalate-25 BJ *	ND	Silver-0.52 B			
			30	ND	ND	ND	Methylene Chloride-11 B *	Diethylphthalate-51 BJ * Bis(2-Ethylhexyl)phthalate-22 J	ND	Silver-0.48 B			
			40	ND	ND	ND	Methylene Chloride-11 BJ * Acetone-8 BJ * Toluene-2 J	Diethylphthalate-65 BJ * Di-n-butylphthalate-20 J	ND	Silver-0.79 B			
			50	ND	ND	ND	Methylene Chloride-11 BJ * Acetone-11 BJ *	Diethylphthalate-27 BJ *	ND	Silver-0.63 B			
			60	ND	ND	ND	Methylene Chloride-13 B * Acetone-7 BJ *	Diethylphthalate-40 BJ * Di-n-butylphthalate-18 J Bis(2-Ethylhexyl)phthalate-21 J	ND	Silver-0.46 B			

MCAS EL TORO RCRA FACILITY ASSESSMENT - - SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		
					Gasoline	Diesel					Action	Rationale
125	Hazardous Waste Storage Area (38)	B1	5	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ *	Diethylphthalate-27 J Di-n-butylphthalate-30 J Bis(2-Ethylhexyl)phthalate-28 J	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			10	ND	ND	ND	Methylene Chloride-8 BJ * Acetone-7 BJ * Toluene-1 J	Diethylphthalate-31 BJ * Di-n-butylphthalate-60 BJ *	ND	NAB		
			15	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-9 BJ *	Di-n-butylphthalate-28 J Bis(2-Ethylhexyl)phthalate-24 J	ND	NAB		
			20	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-5 BJ *	Diethylphthalate-42 J Di-n-butylphthalate-30 J Bis(2-Ethylhexyl)phthalate-32 J	ND	NAB		
			25	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-5 BJ *	Diethylphthalate-19 J Di-n-butylphthalate-25 J Bis(2-Ethylhexyl)phthalate-80 J	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
129	Underground Storage Tank (39)	B1	5	64.1	NA	NA	Methylene Chloride-8 BJ * Toluene-19	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < ETM & PRG
			10	ND	NA	NA	Methylene Chloride-8 BJ * Toluene-5 J	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-7 BJ * Toluene-2 J	NA	NA	NA			CRDL - Contract Required Detection Limit
			20	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-7 BJ * Toluene-4 J	NA	NA	NA			
			25 (Duplicate)	ND	NA	NA	Methylene Chloride-5 BJ * Toluene-2 J	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
130	Drum Storage Area (40)	H1	2	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-5 BJ *	Di-n-butylphthalate-48 J	ND	Antimony-ND Selenium-ND Silver-ND		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			5	ND	ND	ND	Methylene Chloride-6 J * Acetone-3 BJ * Toluene-2 J	ND	ND	Antimony-ND Selenium-ND Silver-0.79 B			
		H2	2	ND	ND	ND	Methylene Chloride-6 J * Acetone-6 BJ * Toluene-2 J	ND	ND	Antimony-ND Selenium-ND Silver-0.55 B			
			5	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-5 BJ * Toluene-3 J	Bis(2-Ethylhexyl)phthalate-290 J	ND	Antimony-ND Selenium-0.79 B Silver-1.0 B			
		H3	2	ND	ND	ND	Methyene Chloride-5 J * Acetone-6 BJ * 2-Butanone-2 J	Diethylphthalate-210 J	ND	Antimony-ND Selenium-ND Silver-ND			
			5	ND	ND	ND	Methylene Chloride-7 J * Acetone-5 BJ * Toluene-2 J	Bis(2-Ethylhexyl)phthalate-320 J	ND	Antimony-11 B Selenium-ND Silver-ND			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
131	Engine Test Cell (41)	H1	2	220	ND	ND	Methylene Chloride-5 BJ * Acetone-27 B *	Bis(2-Ethylhexyl)phthalate-160 J Butylbenzylphthalate-45 J Phenanthrene-270 J Fluoranthene-2000 Pyrene-1400 Benzo(a) Anthracene-1400 Chrysene-790 Benzo(b)Fluoranthene-1900 Benzo(k)Fluoranthene-350 Benzo(a) Pyrene-670 Indeno(1,2,3-cd)Pyrene-500 Benzo(g,h,i) Perylene-370 Anthracene-77 J Carbozole-41 J Dibenz(a,h)Anthracene-94 J	Aroclor(1260)-67 P 4,4'-DDT-6.3	Selenium-ND Silver-ND Lead-50.4	Shallow soil borings.	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs > ETM & PRG CRDL - Contract Required Detection Limit
			2 (Duplicate)	ND	ND	ND	Methylene Chloride-6 J * Acetone-4 BJ * Toluene-1 J	Bis(2-Ethylhexyl)phthalate-180 J Butylbenzylphthalate-100 J Phenanthrene-290 J Fluoranthene-1900 Pyrene-1400 Benzo(a) Anthracene-1300 Chrysene-1100 Benzo(b)Fluoranthene-1800 Benzo(k)Fluoranthene-400 Benzo(a) Pyrene-780 Indeno(1,2,3-cd)Pyrene-540 Benzo(g,h,i) Perylene-420 Anthracene-83 J Carbozole-50 J Dibenz(a,h)Anthracene-120 J	Aroclor(1260)-62 P 4,4'-DDT-6.9	Selenium-ND Silver-ND Lead-48.0		
			5	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-19 B *	ND	ND	Selenium-ND Silver-ND Lead-4.6		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
131	Engine Test Cell (41)	H2	2	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-30 B *	Di-n-butylphthalate-39 BJ *	ND	Selenium-ND Silver-ND Lead-3.1		Shallow soil borings.	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs > ETM & PRG
			5	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-26 B *	ND	ND	Selenium-ND Silver-0.40 B Lead-3.7			
			5 (Duplicate)	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-15 B *	ND	ND	Selenium-ND Silver-ND Lead-3.6			CRDL - Contract Required Detection Limit
		H3	2	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-15 B * 2-Butanone-2 BJ * Carbon Disulfide-1 J	Bis(2-Ethylhexyl)phthalate-48 BJ	ND	Selenium-ND Silver-ND Lead-2.6			
			5	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-7 BJ *	ND	ND	Selenium-0.67 B Silver-ND Lead-2.8			
		H4	2	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-7 BJ *	ND	ND	Selenium-ND Silver-ND Lead-2.8			
			5	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-7 BJ *	ND	ND	Selenium-ND Silver-0.88 B Lead-2.8			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
132	Oil/water Separator (42)	B1	5	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-7 J *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-11 BJ * Acetone-10 J *	NA	NA	NA			CRDL - Contract Required Detection Limit
			20	ND	NA	NA	Methylene Chloride-13 B * Acetone-27 B *	NA	NA	NA			
			20 (Duplicate)	ND	NA	NA	Methylene Chloride-13 BJ * Acetone-47 B * Toluene-4 J	NA	NA	NA			
			25	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-13 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
137	Oil/water Separator (43)	B1	5	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-13 B *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-14 B *	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-13 B *	NA	NA	NA			
			15 (Duplicate)	ND	NA	NA	Methylene Chloride-36 B * Acetone-16 B *	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-9 BJ * Acetone-18 B *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-12 B * Acetone-7 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
138	Drum Storage Area (44)	A1	10	32.8	ND	ND	Methylene Chloride-9 BJ * Acetone-10 BJ *	Diethylphthalate-150 BJ * Di-n-butylphthalate-29 BJ *	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-12 B *	Diethylphthalate-33 J Di-n-butylphthalate-34 BJ * Bis(2-Ethylhexyl)phthalate-25 BJ *	ND	NAB		
			20 (Duplicate)	ND	ND	ND	Methylene Chloride-9 BJ * Toluene-1 J	Di-n-butylphthalate-26 BJ * Bis(2-Ethylhexyl)phthalate-190 BJ *	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-8 BJ * Acetone-7 BJ *	Di-n-butylphthalate-23 BJ * Bis(2-Ethylhexyl)phthalate-19 BJ *	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-12 BJ * Toluene-1 J	Diethylphthalate-31 J Di-n-butylphthalate-39 BJ * Bis(2-Ethylhexyl)phthalate-64 BJ * Butylbenzylphthalate-27 J	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-11 B *	Diethylphthalate-34 J Di-n-butylphthalate-39 BJ * Bis(2-Ethylhexyl)phthalate-31 BJ *	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-9 BJ *	Di-n-butylphthalate-24 BJ * Bis(2-Ethylhexyl)phthalate-120 BJ *	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
139	Oil/Water Separator (45)	B1	5	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-28 B *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-17 B *	NA	NA	NA		CRDL - Contract Required Detection Limit
			15	ND	NA	NA	Methylene Chloride-12 BJ * Acetone-16 B *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-16 B *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-11 B * Acetone-33 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS									
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
144	Drum Storage Area (46)	A1	10	ND	ND	ND	Methylene Chloride-11 BJ * Acetone-23 B *	ND	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCBs < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-5 BJ *	ND	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-11 BJ *	ND	ND	NAB		
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-7 BJ *	ND	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ *	ND	ND	NAB		
			50	81	ND	ND	Methylene Chloride-6 BJ * Acetone-8 BJ *	ND	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-6 BJ *	ND	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
					Gasoline	Diesel						
145	Underground Storage Tank (46)	A1	10	ND	NA	NA	Methylene Chloride-15 B * Acetone-8 BJ *	NA	NA	NA	Additional borings.	Petroleum hydrocarbon contamination, unknown extent. TPF/TFH > 1000 ppm VOCs < ETM & PRG
			20	12292	NA	NA	Methylene Chloride-10 BJ * Acetone-17 * Toluene-9 J PCE-4 J	NA	NA	NA		
			20 (Duplicate)	1575	NA	NA	Methylene Chloride-8 BJ * Acetone-18 * Toluene-4 J	NA	NA	NA		
			30	27526	NA	NA	Methylene Chloride-1100 BJ * Acetone-1700 B * Toluene-1300 J 2-Butanone-5000 Ethylbenzene-1300 J Xylene-8200	NA	NA	NA		
			40	14138	NA	NA	Methylene Chloride-880 BJ * Acetone-1300 BJ * Toluene-2100 2-Butanone-4200 Ethylbenzene-1900 Xylene-13000	NA	NA	NA		
			50	8245	NA	NA	Methylene Chloride-900 BJ * Acetone-1400 BJ Toluene-570 J 2-Butanone-4400 Ethylbenzene-600 J Xylene-4900	NA	NA	NA		
			60	7169	NA	NA	Methylene Chloride-810 BJ * Acetone-930 BJ * Toluene-1200 J 2-Butanone-3800 Ethylbenzene-1100 J Xylene-8200	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
145	Underground Storage Tank (46)	A2	10	ND	NA	NA	Methylene Chloride-18 B *	NA	NA	NA		Additional borings.	Petroleum hydrocarbon contamination, unknown extent. TPF/TFH > 1000 ppm VOCs < ETM & PRG
			20	17843	NA	NA	Methylene Chloride-1300 BJ * Acetone-1500 BJ 2-Butanone-5000 Ethylbenzene-970 J Xylene-4100	NA	NA	NA			
			30	11087	NA	NA	Methylene Chloride-820 BJ * Acetone-1200 BJ * 2-Butanone-5500 Ethylbenzene-750 J	NA	NA	NA			
			30 (Duplicate)	8774	NA	NA	Methylene Chloride-1200 BJ * Acetone-1600 B * 2-Butanone-6200 Ethylbenzene-1300 J	NA	NA	NA			
			40	3350	NA	NA	Methylene Chloride-870 BJ * Acetone-980 BJ * 2-Butanone-3600 Ethylbenzene-360 J	NA	NA	NA			
			50	8609	NA	NA	Methylene Chloride-810 BJ * Acetone-1100 BJ * 2-Butanone-5000 Ethylbenzene-530 J	NA	NA	NA			
			60	9330	NA	NA	Methylene Chloride-940 BJ * Acetone-1600 BJ * 2-Butanone-5000 Ethylbenzene-980 J	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
147	Drum Storage Area (47)	H1	2	ND	ND	75 Z	Methylene Chloride-5 BJ * Toluene-1 J	Diethylphthalate-180 J	ND	NAB	NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			5	ND	ND	31 Z	Methylene Chloride-5 BJ * Acetone-13 *	Di-n-butylphthalate-48 BJ *	ND	NAB		
		H2	2	160	ND	66 Z	Methylene Chloride-5 J * Acetone-8 J * Toluene-1 J	ND	ND	NAB		
			5	ND	ND	ND	Methylene Chloride-16 B * Acetone-8 BJ *	Di-n-butylphthalate-120 BJ *	ND	NAB		
		H3	2	ND	ND	16 Z	Methylene Chloride-5 J * Acetone-9 J *	Di-n-butylphthalate-86 BJ *	ND	NAB		
			5	ND	ND	ND	Methylene Chloride-5 BJ * Toluene-1 J	Di-n-butylphthalate-76 BJ *	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
149	Drum Storage Area (48)	A1	10	ND	ND	ND	Methylene Chloride-4 BJ * Acetone- 5 BJ * 2-Butanone-2 J	Bis(2-Ethylhexyl)phthalate-610 B *	ND	Antimony-ND		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCBs < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-5 J * Acetone-2 BJ *	Bis(2-Ethylhexyl)phthalate-640 B * 2-Methylnaphthalene-34 J	ND	Antimony-ND			
			32	ND	ND	ND	Methylene Chloride-6 J * Acetone-2 BJ * 2-Butanone-1 J	Bis(2-Ethylhexyl)phthalate-520 B *	ND	Antimony-ND			
			32 (Duplicate)	ND	ND	ND	Methylene Chloride-1 BJ * Acetone-4 BJ * 2-Butanone-1 BJ *	Di-n-butylphthalate-47 J	ND	Antimony-ND			
			40	ND	ND	ND	Methylene Chloride-7 J * Acetone-4 BJ * Toluene-1 J 2-Butanone-1 J	Bis(2-Ethylhexyl)phthalate-3000 B	ND	Antimony-ND			
			50	ND	ND	ND	Acetone-5 BJ * 2-Butanone-2 BJ *	Bis(2-Ethylhexyl)phthalate-1600 B *	ND	Antimony-ND			
			60	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-4 BJ *	Di-n-butylphthalate-61 J Bis(2-Ethylhexyl)phthalate-400 B *	ND	Antimony-6.0 B			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
151	Oil/Water Separator (48)	B1	5	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA	Leak test/ inspection of separator.	Moderate petroleum hydrocarbon contamination at 10-foot depth. TPH/TFH < 1000 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	779	NA	NA	Methylene Chloride-8 BJ * Acetone-26 B *	NA	NA	NA		
			15	ND	NA	NA	Methylene Chloride-20 B * Acetone-48 B *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-26 B * Acetone-32 B *	NA	NA	NA		
			25 (Duplicate)	ND	NA	NA	Methylene Chloride-28 B * Acetone-45 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
160	Hazardous Waste Storage Area (49)	A1	10	ND	ND	ND	Methylene Chloride-5 J * Acetone-8 BJ *	Di-n-butylphthalate-2200 Bis(2-Ethylhexyl)phthalate-490 B * Butylbenzylphthalate-2900	ND	NAB		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCBs < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-3 J *	Di-n-butylphthalate-2600 Bis(2-Ethylhexyl)phthalate-370 B * Butylbenzylphthalate-2600	ND	NAB			
			20 (Duplicate)	ND	ND	ND	Methylene Chloride-3 J * Acetone-4 BJ *	Bis(2-Ethylhexyl)phthalate-480 B *	ND	NAB			
			30	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-3 BJ * 2-Butanone-2 BJ *	Di-n-butylphthalate-5500 Bis(2-Ethylhexyl)phthalate-350 B * Butylbenzylphthalate-920	ND	NAB			
			40	ND	ND	ND	Methylene Chloride-3 BJ * Acetone-2 BJ * 2-Butanone-1 BJ *	Di-n-butylphthalate-3500 Bis(2-Ethylhexyl)phthalate-350 B * Butylbenzylphthalate-2200	ND	NAB			
			50	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-3 BJ * 2-Butanone-2 BJ *	Di-n-butylphthalate-2200 Bis(2-Ethylhexyl)phthalate-380 B * Butylbenzylphthalate-860	ND	NAB			
			60	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-3 BJ * 2-Butanone-2 BJ *	Bis(2-Ethylhexyl)phthalate-440 B *	ND	NAB			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
162	Underground Storage Tank (50)	B1	5	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	ND	NA	NA	Methylene Chloride-8 BJ *	NA	NA	NA		
			15	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-4 BJ *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
164	Vehicle Wash Rack (51)	A1	10	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-15 B *	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	ND	NA	NA	Methylene Chloride-11 B * Acetone-21 *	NA	NA	NA			
			30	571	NA	NA	Methylene Chloride-10 BJ * Acetone-13 *	NA	NA	NA			CRDL - Contract Required Detection Limits
			30 (Duplicate)	167	NA	NA	Methylene Chloride-5 BJ * Acetone-15 *	NA	NA	NA			
			40	54	NA	NA	Methylene Chloride-10 BJ * Acetone-19 *	NA	NA	NA			
			50	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-12 *	NA	NA	NA			
			60	117	NA	NA	Methylene Chloride-9 BJ * Acetone-24 B *	NA	NA	NA			
		A2	10	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-6 BJ *	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-11 BJ *	NA	NA	NA			
			30	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA			
			40	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-4 BJ *	NA	NA	NA			
			50	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-9 BJ *	NA	NA	NA			
			60	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-11 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
171	Hazardous Waste Storage Area (52)	A1	10	ND	ND	ND	Methylene Chloride-7 BJ *	Diethylphthalate-20 BJ * Di-n-butylphthalate-35 BJ * 2-Methylnaphthalene-34 J Phenanthrene-51 J Pyrene-45 J Chrysene-62 J Benzo(a)Pyrene-72 J Bis(2-Ethylhexyl)phthalate-710 B	4,4-DDE-7 J	Barium-90.5	Shallow soil borings.	Potential for SVOCs in shallow soil. TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCBs < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-9 BJ *	Diethylphthalate-67 BJ * Di-n-butylphthalate-20 BJ *	ND	Barium-67.5		
			30	ND	ND	ND	Methylene Chloride-14 B * Acetone-9 BJ *	Di-n-butylphthalate-24 BJ * Bis(2-Ethylhexyl)phthalate-49 BJ *	ND	Barium-128		
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-7 J *	Diethylphthalate-180 BJ * Bis(2-Ethylhexyl)phthalate-10000	ND	Barium-794		
			40	ND	ND	ND	Methylene Chloride-11 BJ * Acetone-9 BJ *	Diethylphthalate-75 BJ * Bis(2-Ethylhexyl)phthalate-1700 Di-n-butylphthalate-33 J	ND	Barium-132		
			50	34.9	ND	ND	Methylene Chloride-8 BJ * Acetone-7 J *	Diethylphthalate-46 BJ * Bis(2-Ethylhexyl)phthalate-37 J	ND	Barium-111		
			60	ND	ND	ND	Methylene Chloride-5 BJ * Toluene-2 J	Diethylphthalate-20 BJ * Di-n-butylphthalate-20 BJ * Bis(2-Ethylhexyl)phthalate-40 BJ *	ND	Barium-98.2		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
172	Hazardous Waste Storage Area (53)	A1	10	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-7 BJ * 2-Butanone-2 BJ *	ND	ND	Selenium-ND		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCBs < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-6 BJ * 2-Butanone-2 BJ *	ND	ND	Selenium-0.9 B			
			30	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-6 BJ *	ND	ND	Selenium-ND			
			40	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-6 BJ *	ND	ND	Selenium-ND			
			40 (Duplicate)	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-7 BJ *	ND	ND	Selenium-ND			
			50	ND	ND	ND	Methylene Chloride-5 BJ * Acetone-3 BJ *	ND	ND	Selenium-ND			
			60	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-8 BJ *	ND	ND	Selenium-ND			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg): Gasoline	TFH (mg/kg): Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
173	Oil/Water Separator (54)	B1	5	ND	NA	NA	Methylene Chloride-9 BJ * Acetone-12 *	NA	NA	NA	Additional borings.	Petroleum hydrocarbon contamination, unknown extent. TPH/TFH > 1000 ppm VOCs < ETM & PRG
			10	496	NA	NA	Methylene Chloride-25 BJ * Acetone-68 *	NA	NA	NA		
			15	8341	NA	NA	Methylene Chloride-15 BJ * Acetone-65 B * Xylene-460 Ethylbenzene-270	NA	NA	NA		
			15 (Duplicate)	2153	NA	NA	Methylene Chloride-1900 BJ * Acetone-2200 BJ *	NA	NA	NA		
			20	1606	NA	NA	Methylene Chloride-15 BJ * Acetone-120 B * Ethylbenzene-470	NA	NA	NA		
			25	11008	NA	NA	Methylene Chloride-18 BJ * Acetone-75 B * Xylene-22000 D Benzene-37 J Ethylbenzene-7400 D	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
175	Underground Storage Tank (53)	B1	5	26652	4340	19000	Methylene Chloride-32 BJ * Acetone-120 B * Toluene-5300 D 2- Butanone-46 BJ Xylene-24000 D Ethylbenzene-400 Benzene-790	NA	NA	NA		Additional borings.	Petroleum hydrocarbon contamination, unknown extent. TPH/TFH > 1000 ppm VOCs > ETM & PRG
			10	6084	1340	13700	Methylene Chloride-2700 B * Acetone-690 BJ * Toluene-4200 Xylene-14000 2-Butanone-1200 J Ethylbenzene-2700	NA	NA	NA			
			15	10285	2250	18900	Methylene Chloride-3300 B * Acetone-690 BJ * Toluene-14000 Xylene-61000 Ethylbenzene-11000 Benzene-710 J	NA	NA	NA			
			15 (Duplicate)	26601	2640	24500	Methylene Chloride-2600 B * Acetone-560 BJ * Toluene-29000 Xylene-110000 D 2-Butanone-1200 J Ethylbenzene-22000 Benzene-2600	NA	NA	NA			
			20	2095	2570	7910	Methylene Chloride-3300 B * Acetone-600 BJ * Toluene-8500 Xylene-35000 2-Butanone-1000 J Ethylbenzene-6300 Benzene-430 J	NA	NA	NA			
			25	10846	2160	14300	Methylene Chloride-2800 B * Acetone-800 BJ * Toluene-3200 Xylene-57000 2-Butanone-1200 J Ethylbenzene-12000 Benzene-1300 J	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS									
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
176	Underground Storage Tank (53)	B1	5	18136	2540	26200	Methylene Chloride-1700 BJ * Acetone-2300 BJ * Toluene-3300 Xylene-37000 2-Butanone-7600 Ethylbenzene-7100	NA	NA	NA	Additional borings.	Petroleum hydrocarbon contamination, unknown extent. TPH/TFH > 1000 ppm VOCs < ETM & PRG
			10	6934	1780	26700	Methylene Chloride-1300 BJ * Acetone-1900 BJ * Xylene-39000 2-Butanone-7000 Ethylbenzene-7800 2-Hexanone-3000	NA	NA	NA		
			15	10377	1960	87.1	Methylene Chloride-1500 BJ * Acetone-2800 B * Xylene-21000 2-Butanone-5600 Ethylbenzene-4800 2-Hexanone-1800 J	NA	NA	NA		
			15 (Duplicate)	12309	921	11500	Methylene Chloride-1300 BJ Acetone-3800 B * Xylene-22000 2-Butanone-6000 Ethylbenzene-4500	NA	NA	NA		
			20	5495	2110	5740	Methylene Chloride-12 B * Acetone-12 B * Toluene-120 Xylene-6300 D Ethylbenzene-2100 DJ Benzene-42	NA	NA	NA		
			25	8663	1320	9700	Methylene Chloride-35 BJ * Acetone-47 BJ * Xylene-6000 D Benzene-51 J Ethylbenzene-740 2-Hexanone-370	NA	NA	NA		

<table>
<tr><th colspan="14">MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS</th></tr>
<tr><th rowspan="3">SWMU/AOC NUMBER</th><th rowspan="3">SWMU/AOC TYPE (FIGURE)</th><th rowspan="3">BORING NUMBER</th><th rowspan="3">SAMPLE DEPTH (FEET)</th><th colspan="8">ANALYTICAL TEST RESULTS</th><th colspan="2" rowspan="2">RECOMMENDATIONS</th></tr>
<tr><th rowspan="2">TPH (mg/kg)</th><th colspan="2">TFH (mg/kg)</th><th rowspan="2">VOCs (ug/kg)</th><th rowspan="2">SVOCs (ug/kg)</th><th rowspan="2">PESTICIDES/PCBs (ug/kg)</th><th rowspan="2">METALS (mg/kg)</th></tr>
<tr><th>Gasoline</th><th>Diesel</th><th>Action</th><th>Rationale</th></tr>
<tr><td rowspan="5">179</td><td rowspan="5">Oil/Water Separator (55)</td><td rowspan="5">B1</td><td>5</td><td>ND</td><td>NA</td><td>NA</td><td>Methylene Chloride-7 BJ *
Acetone-31 *</td><td>NA</td><td>NA</td><td>NA</td><td rowspan="5">NFA</td><td rowspan="5">TPH/TFH < 100 ppm
VOCs < CRDL

CRDL - Contract Required Detection Limit</td></tr>
<tr><td>10</td><td>ND</td><td>NA</td><td>NA</td><td>Methylene Chloride-11 BJ *
Acetone-34 *</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>15</td><td>ND</td><td>NA</td><td>NA</td><td>Methylene Chloride-12 B *
Acetone-25 *
Toluene-6 J
Carbon Tetrachloride-2J</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>20</td><td>ND</td><td>NA</td><td>NA</td><td>Methylene Chloride-18 B *
Acetone-24 *</td><td>NA</td><td>NA</td><td>NA</td></tr>
<tr><td>25</td><td>ND</td><td>NA</td><td>NA</td><td>Methylene Chloride-12 B *
Acetone-21 *</td><td>NA</td><td>NA</td><td>NA</td></tr>
</table>

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
181	Landfarming Site (56)	H1	2	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-8 BJ * Toluene-1 J	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			5	NA	ND	ND	Methylene Chloride-4 BJ * Acetone-9 BJ *	NA	NA	NA		CRDL - Contract Required Detection Limit
		H2	2	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-12 B * Toluene-1 J	NA	NA	NA		
			5	NA	ND	ND	ND	NA	NA	NA		
			5 (Duplicate)	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-6 BJ *	NA	NA	NA		
		H3	2	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-16 B * Toluene-1 J	NA	NA	NA		
			5	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-23 B * Toluene-2 J	NA	NA	NA		
		H4	2	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-15 B * Toluene-2 J	NA	NA	NA		
			5	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-10 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	RECOMMENDATIONS Rationale
181	Landfarming Site (56)	H5	3	NA	ND	ND	Methylene Chloride-2 BJ * Acetone-26 B * Toluene-2 J	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			7	NA	ND	ND	Acetone-15 B *	NA	NA	NA		CRDL - Contract Required Detection Limit
		H6	2	NA	ND	ND	Methylene Chloride-4 BJ * Acetone-14 B * Toluene-1 J	NA	NA	NA		
			5	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-11 B * Toluene-1 J Xylene-2 J	NA	NA	NA		
		H7	2	NA	300 Z	ND	Acetone-18 B * Toluene-2 J PCE-2 J Xylene-2 J	NA	NA	NA		
			5	NA	ND	ND	Methylene Chloride-1 BJ * Acetone-7 BJ * 2-Butanone-3 J	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS Action	RECOMMENDATIONS Rationale
186	Hazardous Waste Storage Area (57)	A1	10	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ *	Diethylphthalate-47 J Di-n-butylphthalate-45 BJ *	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ *	Diethylphthalate-40 J	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ *	Diethylphthalate-40 J	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-8 BJ *	Diethylphthalate-37 J Di-n-butylphthalate-32 BJ *	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-7 BJ *	Diethylphthalate-52 J	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-9 BJ * Acetone-4 BJ *	Diethylphthalate-41 J	ND	NAB		
		H1	2	ND	ND	ND	Methylene Chloride-2 BJ * Acetone-6 BJ *	Di-n-butylphthalate-20 BJ * Bis(2-Ethylhexyl)phthalate-22 BJ * Naphthalene-87 J	ND	NAB		
			5	ND	ND	ND	Methylene Chloride-26 B * Toluene-2 J	Diethylphthalate-18 J Di-n-butylphthalate-24 J Bis(2-Ethylhexyl)phthalate-18 BJ *	Dieldrin-6.2 J	NAB		
			5 (Duplicate)	ND	ND	ND	Methylene Chloride-30 B * Toluene-1 J	Naphthalene-61 J	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		
					Gasoline	Diesel					Action	Rationale
187	Underground Storage Tank (2)	A1	10	37	NA	NA	Methylene Chloride-3 BJ * Acetone-17 B * 2-Butanone-4 BJ *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			20	ND	NA	NA	Methylene Chloride-3 BJ * Acetone-18 B *	NA	NA	NA		CRDL - Contract Required Detection Limit
			30	ND	NA	NA	Acetone-10 BJ * 2-Butanone-4 BJ *	NA	NA	NA		
			40	ND	NA	NA	Methylene Chloride-3 J * Acetone-11 B * 2-Butanone-4 BJ *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-2 J * Acetone-18 B * 2-Butanone-4 BJ *	NA	NA	NA		
			60	ND	NA	NA	Methylene Chloride-3 J * Acetone-10 BJ * 2-Butanone-4 BJ *	NA	NA	NA		
			60 (Duplicate)	ND	NA	NA	Methylene Chloride-3 J Acetone-12 B * 2-Butanone-4 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
188	Underground Storage Tank (7)	A1	10	102	NA	NA	Methylene Chloride-6 BJ * Acetone-10 J * 1,1,2,2-Tetrachloroethane-68 TCE-8 J	NA	NA	NA		NFA	TPH/TFH < 1000 ppm VOCs < ETM & PRG
			10 (Duplicate)	179	NA	NA	Methylene Chloride-9 BJ * 1,1,2,2-Tetrachloroethane-130 TCE-26 PCE-7 J	NA	NA	NA			CRDL - Contract Required Detection Limit
			20	91	NA	NA	Methylene Chloride-6 BJ * Acetone-25 * 1,1,2,2-Tetrachloroethane-4 J	NA	NA	NA			
			30	47	NA	NA	Methylene Chloride-8 BJ * Acetone-26 *	NA	NA	NA			
			40	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-14 B *	NA	NA	NA			
			50	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-22 B *	NA	NA	NA			
			60	160	NA	NA	Methylene Chloride-6 BJ * Acetone-17 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
193	Oil/Water Separator (58)	B1	5	ND	NA	NA	Methylene Chloride-16 B * Acetone-15 B *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	ND	NA	NA	Methylene Chloride-14 B * Acetone-16 B *	NA	NA	NA		
			15	ND	NA	NA	Methylene Chloride-14 B * Acetone-11 BJ *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-15 B * Acetone-9 BJ *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-16 B * Acetone-23 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
194	Former Incinerator Site (59)	H1	2	50.7	2 Z	ND	Methylene Chloride-6 BJ * Acetone-62 B * 2-Butanone-10 J PCE-14	Diethylphthalate-26 J Di-n-butylphthalate-38 J Bis(2-Ethylhexyl)phthalate-41 J	ND	Silver-ND Selenium-ND Lead-12.0	Further investigation under the RI/FS program.	Petroleum hydrocarbon contamination, extent unknown. TPH/TFH > 1000 ppm VOCs > ETM & PRG SVOCs < CRDL Pest/PCB < ETM & PRG Metals < ETM & PRG CRDL - Contract Required Detection Limit
			2 (Duplicate)	1650	10 Z	850 ZJ	Methylene Chloride-4 BJ * Acetone-57 B * Xylene-4 J Ethylbenzene-2 J 1,2-Dichloroethene-11 TCE-3 J PCE-130	ND	ND	Silver-1.1 B Selenium-0.7 B Lead-9.4		
			5	779	ND	270 ZJ	Methylene Chloride-6 BJ * Acetone-32 B * Toluene-2 J PCE-9 J	Butylbenzylphthalate-390 J	ND	Silver-0.5 B Selenium- ND Lead-13.3		
		H2	2	421	ND	160 ZJ	Methylene Chloride-7 BJ * Acetone-93 B * PCE-3 J 2-Butanone-11 J	ND	ND	Silver-ND Selenium- ND Lead-19.6		
			5 No sample taken	NA	NA	NA	NA	NA	NA	NA		
		H3	2	1410	ND	440 Z	Methylene Chloride-7 BJ * Acetone-39 B * PCE-4 J	ND	4,4'-DDD-5.2	Silver-0.85 B Selenium-ND Lead-50.6		
			4	2680	4 Z	830 Z	Methylene Chloride-5 BJ * Acetone-59 B * Xylene-3 J PCE-76 TCE-5 J 2-Butanone-9 J	ND	ND	Silver-0.73 B Selenium-0.87 B Lead-18.4		

MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS												
				ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
195	Vehicle Wash Rack (60)	H1	2	ND	NA	NA	Methylene Chloride-48 B * Acetone-19 B *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			5	ND	NA	NA	Methylene Chloride-55 B * Acetone-8 BJ *	NA	NA	NA		CRDL - Contract Required Detection Limit
		H2	2	ND	NA	NA	Methylene Chloride-44 B * Acetone-17 B * 2-Butanone-2 J	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-38 B * Acetone-9 BJ * 2-Butanone-3 J	NA	NA	NA		
			5 (Duplicate)	ND	NA	NA	Methylene Chloride-20 B * Acetone-5 BJ * 2-Butanone-3 BJ *	NA	NA	NA		
		H3	2	ND	NA	NA	Methylene Chloride-31 B * Acetone-9 BJ * 2-Butanone-4 J	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-27 B * Acetone-10 BJ * 2-Butanone-3 J	NA	NA	NA		
		H4	2	ND	NA	NA	Methylene Chloride-23 B * Acetone-12 B * 2-Butanone-3 J	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-17 B * Acetone-5 BJ * 2-Butanone-3 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS								
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
196	Oil/Water Separator (60)	B1	5	ND	NA	NA	Methylene Chloride-5 BJ *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA		CRDL - Contract Required Detection Limit
			10 (Duplicate)	ND	NA	NA	Methylene Chloride-22 B * Bromoform-1 J	NA	NA	NA		
			15	ND	NA	NA	Methylene Chloride-20 B * Toluene-1 J	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-12 B *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-16 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
					Gasoline	Diesel							
198	Vehicle Wash Rack (61)	H1	2	56.1	NA	NA	Methylene Chloride-5 BJ * Acetone-10 BJ *	NA	NA	NA		Repair cracks in pavement.	To prevent future migration of petroleum hydrocarbons. TPH/TFH < 1000 ppm VOCs < ETM & PRG
			5	ND	NA	NA	Methylene Chloride-5 BJ * Toluene-3 J PCE-5 J	NA	NA	NA			
		H2	2	ND	NA	NA	Methylene Chloride-2 BJ * Acetone-24 B * Toluene-3 J PCE-1 J	NA	NA	NA			
			2 (Duplicate)	ND	NA	NA	Methylene Chloride-7 BJ * PCE-3 J	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-9 BJ * Toluene-2 J PCE-16	NA	NA	NA			
		H3	2	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-7 BJ * Toluene-1 J PCE-2 J	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-10 BJ * Toluene-3 J PCE-9 J	NA	NA	NA			
		H4	2	177	NA	NA	Methylene Chloride-8 BJ * Acetone-7 BJ * PCE-2 J	NA	NA	NA			
			5	54.7	NA	NA	Methylene Chloride-5 BJ * Acetone-5 J * Toluene-2 J PCE-2 J	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		
					Gasoline	Diesel					Action	Rationale
199	Oil/Water Separator (61)	B1	5	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-15 B *	NA	NA	NA	Leak test/ inspection of separator.	Moderate petroleum hydrocarbon contamination at 15-foot depth. TPH/TFH < 1000 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	ND	NA	NA	Methylene Chloride-6 BJ *	NA	NA	NA		
			15	669	NA	NA	Methylene Chloride-6 BJ * Acetone-10 BJ *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-3 BJ * Acetone-7 BJ *	NA	NA	NA		
			27	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-6 BJ *	NA	NA	NA		
			27 (Duplicate)	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-7 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
				ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
201	Vehicle Wash Rack (62)	H1	2	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-11 BJ * 2-Butanone-3 BJ *	NA	NA	NA	Repair cracks in pavement.	To prevent future migration of petroleum hydrocarbons. TPH/TFH > 1000 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			5	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-9 BJ * 2-Butanone-3 BJ *	NA	NA	NA		
			5 (Duplicate)	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-32 B * 2-Butanone-3 BJ *	NA	NA	NA		
		H2	2	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-22 B * 2-Butanone-3 BJ *	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-16 B * 2-Butanone-3 BJ *	NA	NA	NA		
		H3	2	4133	NA	NA	Methylene Chloride-820 BJ * Acetone-810 BJ * 2-Butanone-1300 BJ *	NA	NA	NA		
			5	233	NA	NA	Methylene Chloride-8 BJ * Acetone-16 B * 2-Butanone-4 BJ * Xylene-8 J	NA	NA	NA		
		H4	2	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-19 B * 2-Butanone-3 BJ *	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-9 BJ * 2-Butanone-2 BJ *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
202	Underground Storage Tank (62)	B1	5	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-8 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-3 BJ *	NA	NA	NA			CRDL - Contract Required Detection Limit
			15	ND	NA	NA	Methylene Chloride-5 BJ * Toluene-3 J	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-30 B *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-2 BJ * Acetone-4 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS			
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)		Action	Rationale
204	Wash Rack (63)	H1	2	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA		Repair cracks in pavement.	To prevent future migration of petroleum hydrocarbons. TPH/TFH > 1000 ppm VOCs < ETM & PRG
			5	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-14 B *	NA	NA	NA			
		H2	2	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-49 B *	NA	NA	NA			
			2 (Duplicate)	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-190 B *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-9 BJ * Acetone-11 BJ *	NA	NA	NA			
		H3	2	4582	NA	NA	Methylene Chloride-31 BJ * Acetone-200 B * Xylene-500 Ethylbenzene-76	NA	NA	NA			
			5	100	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA			
		H4	2	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-39 B *	NA	NA	NA			
			5	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-25 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
205	Oil/Water Separator (63)	B1	5	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-21 *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-19 *	NA	NA	NA		CRDL - Contract Required Detection Limit
			15	ND	NA	NA	Methylene Chloride-12 B * Acetone-23 *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-15 B * Acetone-39 *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-17 *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
208	Oil/Water Separator (36)	B1	5	ND	NA	NA	Methylene Chloride-8 BJ * Acetone-9 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL CRDL - Contract Required Detection Limit
			10	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-14 B *	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-22 B *	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-15 B *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-17 B *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
211	Oil/Water Separator (64)	B1	5	ND	NA	NA	Methylene Chloride-8 BJ *	NA	NA	NA		NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-20 *	NA	NA	NA			CRDL - Contract Required Detection Limit
			15	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-9 BJ *	NA	NA	NA			
			20	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-13 B *	NA	NA	NA			
			25	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-10 BJ *	NA	NA	NA			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
					Gasoline	Diesel						
213	Vehicle Wash Rack (65)	H1	2	60.6	NA	NA	Methylene Chloride-4 BJ * Acetone-35 B * Toluene-3 J Xylene-7 J PCE-2 J	NA	NA	NA	Repair cracks in pavement.	To prevent future migration of petroleum hydrocarbons.
			5	170	NA	NA	Methylene Chloride-4 BJ * Acetone-45 B * Toluene-6 J PCE-1 J	NA	NA	NA		TPH/TFH < 1000 ppm VOCs < CRDL
		H2	2	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-12 B * 2-Butanone-3 J	NA	NA	NA		CRDL - Contract Required Detection Limit
			2 (Duplicate)	45.9	NA	NA	Methylene Chloride-3 BJ * Acetone-23 B * Xylene-2 J	NA	NA	NA		
			5	733	NA	NA	Methylene Chloride-5 BJ * Acetone-36 B * Toluene-3 J Xylene-9 J PCE-8 J	NA	NA	NA		
		H3	2	39.0	NA	NA	Methylene Chloride-6 BJ * Acetone-13 B * Toluene-3 J	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-7 BJ *	NA	NA	NA		
		H4	2	34.3	NA	NA	Methylene Chloride-4 BJ * Acetone-46 B * Toluene-2 J PCE-2 J	NA	NA	NA		
			5	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-19 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	Rationale
214	Underground Storage Tank (65)	B1	5	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-8 BJ *	NA	NA	NA	NFA	TPH/TFH < 100 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-6 BJ *	NA	NA	NA		CRDL - Contract Required Detection Limit
			15	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-14 B *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-15 B *	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-28 B *	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
220	Oil/Water Separator (16)	B1	5	268	NA	NA	Methylene Chloride-11 B * Acetone-9 BJ * 2-Butanone-3 J	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			10	ND	NA	NA	Methylene Chloride-13 B * Acetone-18 B * 2-Butanone-3 J	NA	NA	NA		CRDL - Contract Required Detection Limit
			15	ND	NA	NA	Methylene Chloride-9 BJ * Acetone-16 B * 2-Butanone-2 J	NA	NA	NA		
			15 (Duplicate)	ND	NA	NA	Methylene Chloride-10 B * Acetone-13 B * 2-Butanone-2 J	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-13 B * Acetone-34 B * 2-Butanone-4 J	NA	NA	NA		
			25	ND	NA	NA	Methylene Chloride-12 B * Acetone-18 B * 2-Butanone-3 J	NA	NA	NA		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)			
					Gasoline	Diesel						Action	Rationale
222	Hazardous Waste Storage Area (29)	A1	10	ND	ND	ND	Methylene Chloride-14 B * Acetone-10 BJ *	ND	ND	NAB		NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-18 B * Acetone-28 B * 2-Butanone-2 J	ND	ND	NAB			
			30	ND	ND	ND	Methylene Chloride-21 B * Acetone-40 B * 2-Butanone-2 J	ND	ND	NAB			
			40	ND	0.446	ND	Methylene Chloride-16 B * Acetone-21 B *	ND	ND	NAB			
			50	ND	ND	ND	Methylene Chloride-18 B * Acetone-18 B * Toluene-4 J 2-Butanone-2 J	ND	ND	NAB			
			60	ND	0.502	ND	Methylene Chloride-18 B * Acetone-37 B *	ND	ND	NAB			

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		
					Gasoline	Diesel					Action	Rationale
223	Hazardous Waste Storage Area (35)	A1	10	ND	0.060	ND	Methylene Chloride-4 BJ * Acetone-5 BJ *	ND	ND	Copper-12.6 Lead-3.4	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < ETM & PRG CRDL - Contract Required Detection Limit
			20	ND	ND	ND	Methylene Chloride-5 J * Acetone-11 BJ * 2-Butanone-5 BJ *	ND	ND	Copper-197 Lead-68.9		
			30	75	ND	ND	Methylene Chloride-6 BJ * Acetone-6 BJ *	Bis(2-Ethylhexyl)phthalate-850	ND	Copper-15.8 Lead-7.5		
			30 (Duplicate)	85	ND	ND	Methylene Chloride-3 J * Acetone-9 BJ * 2-Butanone-3 BJ *	ND	ND	Copper-1.6 Lead-0.96		
			40	ND	ND	ND	Methylene Chloride-4 BJ * Acetone-4 BJ *	ND	ND	Copper-5.6 Lead-3.3		
			50	ND	ND	ND	Methylene Chloride-3 J * Acetone-11 BJ * 2-Butanone-4 BJ *	ND	ND	Copper-9.3 Lead-3.2		
			60	ND	ND	ND	Methylene Chloride-3 J * Acetone-14 B * 2-Butanone-4 BJ *	ND	ND	Copper-7.5 Lead-3.0		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
	SWMU/AOC		SAMPLE	ANALYTICAL TEST RESULTS									
SWMU/AOC	TYPE	BORING	DEPTH	TPH	TFH (mg/kg)		VOCs	SVOCs	PESTICIDES/PCBs	METALS	RECOMMENDATIONS	
NUMBER	(FIGURE)	NUMBER	(FEET)	(mg/kg)	Gasoline	Diesel	(ug/kg)	(ug/kg)	(ug/kg)	(mg/kg)	Action	Rationale
224	Hazardous Waste Storage Area (66)	A1	10	ND	ND	ND	Methylene Chloride-5 BJ * Toluene-1 J	Di-n-butylphthalate-29 BJ *	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-6 BJ * Toluene-3 J	Diethylphthalate-39 BJ * Di-n-butylphthalate-46 BJ *	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-4 BJ * Toluene-1 J	Diethylphthalate-39 BJ * Di-n-butylphthalate-35 BJ *	ND	NAB		
			30 (Duplicate)	ND	ND	ND	Methylene Chloride-11 BJ * Toluene-2 J	Di-n-butylphthalate-31 BJ * Bis(2-Ethylhexyl)phthalate-58 J	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-9 BJ * Toluene-2 J	Di-n-butylphthalate-40 BJ *	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-9 BJ * Toluene-2 J	Di-n-butylphthalate-25 BJ *	ND	NAB		
			60	ND	ND	ND	Methylene Chloride-14 B * Toluene-4 J	Diethylphthalate-46 BJ * Di-n-butylphthalate-51 BJ *	ND	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS													
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS								RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)		Action	Rationale
225	Hazardous Waste Storage Area (56)	A1	10	ND	ND	ND	Methylene Chloride-6 BJ * Acetone-8 BJ * Toluene-1 J	Diethylphthalate-38 BJ *	ND	NAB		NFA	TPH/TFH < 1000 ppm VOCs < CRDL SVOCs < CRDL Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			10 (Duplicate)	176	ND	60 Z	Methylene Chloride-13 B * Acetone-30 B * Toluene-1 J	Diethylphthalate-22 BJ * Di-n-butylphthalate-22 J	ND	NAB			
			20	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-6 BJ *	Diethylphthalate-44 BJ *	ND	NAB			
			30	ND	ND	ND	Methylene Chloride-9 BJ *	Diethylphthalate-21 BJ * Di-n-butylphthalate-22 BJ * Bis(2-Ethylhexyl)phthalate-47 J	ND	NAB			
			40	ND	ND	ND	Methylene Chloride-7 BJ *	ND	ND	NAB			
			50	ND	ND	ND	Methylene Chloride-7 BJ *	Diethylphthalate-29 BJ	ND	NAB			
			60	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-9 BJ *	Diethylphthalate-76 BJ * Bis(2-Ethylhexyl)phthalate-54 J	ND	NAB			

Continue

MCAS EL TORO RCRA FACILITY ASSESSMENT -- SAMPLING VISIT RESULTS												
SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS	
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale
					Gasoline	Diesel						
226	Hazardous Waste Storage Area (67)	A1	10	ND	ND	ND	Methylene Chloride-15 B *	Diethylphthalate-30 J Di-n-butylphthalate-31 J	ND	NAB	NFA	TPH/TFH < 100 ppm VOCs < CRDL SVOCs < ETM & PRG Pest/PCB < CRDL Metals < BGT CRDL - Contract Required Detection Limit BGT - Background Threshold Value
			20	ND	ND	ND	Methylene Chloride-12 B *	Bis(2-Ethylhexyl)phthalate-22 J	ND	NAB		
			30	ND	ND	ND	Methylene Chloride-12 BJ * Toluene-1 J	Diethylphthalate-35 J Di-n-butylphthalate-38 J Bis(2-Ethylhexyl)phthalate-23 J Phenol-32 J	ND	NAB		
			40	ND	ND	ND	Methylene Chloride-11 B *	Diethylphthalate-20 J Di-n-butylphthalate-24 J Phenol-20 J	ND	NAB		
			50	ND	ND	ND	Methylene Chloride-2 BJ * Acetone-9 BJ *	Diethylphthalate-28 J Di-n-butylphthalate-30 J Bis(2-Ethylhexyl)phthalate- 230 J Phenol-26 J	ND	NAB		
			50 (Duplicate)	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-3 J	Diethylphthalate-30 J Di-n-butylphthalate-34 J Bis(2-Ethylhexyl)phthalate-610	ND	NAB		
			60 No sample taken	NA	NA	NA	NA	NA	NA	NAB		