

# Summary Report

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*Former Electronic Equipment Storage Area PCB A2*  
Marine Corps Air Station, El Toro, California

24 January 2001

*Prepared by:*

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## TRANSMITTAL

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Note: PCB A2 is located within  
IRP Site 24.

Summary Report, Former Electronic Equipment  
Area PCB A2

## TRANSMITTAL

Date: 24 January 2001

From: Lynn Marie Hornecker 

To: **Ms. Triss Chesney**  
State of California Environmental Protection Agency  
Department of Toxic Substances Control, Region 4  
Site Mitigation Branch  
Base Closure Unit  
5796 Corporate Avenue  
Cypress, CA 90630

Subj: Summary Report, Former Electronic Equipment Storage Area PCB A2  
Marine Corps Air Station, El Toro

Provided for your review as the attachment is the Summary Report for PCB A2 which is located in the southwestern section of the Marine Corps Air Station, El Toro. PCB A2, a former electronic equipment storage area, is located near Buildings 324 and 326 within the investigation boundary of Installation Restoration Program (IRP) Site 24 – the Volatile Organic Compound (VOC) Source Area. The site was identified during the preparation of the Environmental Baseline Survey (EBS) which was finalized in 1995. Seventeen (17) shallow soil samples were collected from eight (8) locations at PCB A2 during January 2000. Additionally, six (6) shallow soil samples were collected at Solid Waste Management Unit (SWMU) 95, that coincides with part of PCB A2, in 1992 during the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) Sampling Visit. No PCB compounds were detected at or above laboratory reporting limits in samples collected from PCB A2. Low levels of pesticides and petroleum hydrocarbons were identified at PCB A2.

The Summary Report includes an evaluation of historical documentation and environmental program management records, RFA Sampling Visit data, recent visual inspections, and recently collected field data. Based upon the absence of evidence of a significant release at PCB A2, we are requesting that *no further action status* be designated for PCB A2 in the next Base Realignment and Closure (BRAC) Business Plan update.

If we do not receive comments from you within sixty (60) days of receipt of this document, then we will assume that you concur with our recommendations and we will continue with our evaluation of various environmental locations of concern. A formal transmittal letter may follow.

Please do not hesitate to call me at (619) 532-0783 if you have questions pertaining to this project. Thank you very much.

Attachment

Summary Report, PCB A2 (SWDIV, January 2001)

CF: w/attachment

Nicole Moutoux (USEPA)

John Broderick (RWQCB)

Dean Gould (MCAS El Toro)

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Project File

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## Section 1 *Introduction*

The purpose of this Summary Report is to present information pertaining to the former electronic equipment storage area, designated as PCB A2 in the BRAC Business Plan of 2000, located adjacent to Buildings 324 and 326 in the southwestern section of the Marine Corps Air Station (MCAS), El Toro. PCB A2 was identified and described in the Final Environmental Baseline Survey (EBS) Report (Jacobs Engineering Group (JEG), 1995) and PCB A2 is located within the investigation boundary of Installation Restoration Program (IRP) Site 24 – the Volatile Organic Compound (VOC) Source Area. Part of PCB A2 was investigated as Solid Waste Management Unit (SWMU) 95 during the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA).

The Marine Corps Air Station, El Toro, also known as the Station, comprises approximately 4,700 acres and is located in eastern Orange County approximately 45 miles southeast of Los Angeles, California. PCB A2 and the nearby Buildings 324 and 326 are shown on Figure 1.

The Station was closed on 2 July 1999 in accordance with the Base Realignment and Closure Act of 1993 (BRAC III). PCB A2 is located within a parcel tentatively identified as a future cargo area according to *The Preferred Land Use Plan* (County of Orange, August 1999).

Seventeen (17) shallow soil samples were collected at eight (8) locations at PCB A2 during January 2001 and six (6) shallow soil samples were collected at SWMU 95 during the RFA Sampling Visit in 1992. PCB compounds were not identified at or above laboratory reporting limits, and low levels of pesticides and petroleum hydrocarbons were identified in samples collected at PCB A2. A screening risk evaluation was conducted for the chemicals that were identified at PCB A2. This Summary Report includes an evaluation of historical records, a description of information collected during the investigation of nearby Environmental Locations of Concern, the results of soil sampling activities at the site, a screening risk evaluation, and the results of the visual inspections of the site.

Based upon the review of the historical information and the absence of evidence of a significant release to the environment, it is recommended that *no further action status* be designated for PCB A2 in the next Base Realignment and Closure Business Plan Update.

## **Section 2**

### ***Field Investigation and Historical Records***

#### ***2.1 Field Investigation***

##### ***Site Description:***

The Final EBS (JEG, 1995) provides the following description: "A PCB equipment storage area was identified at the equipment and drum storage area located on the north side of Building 324. During a routine site visit to MCAS El Toro, the Jacobs Team discovered miscellaneous electronic equipment (e.g., switches, capacitors) being stored in the vicinity of a less than 90-day accumulation area. The items were labeled with hazardous waste stickers indicating the contents as PCB-containing. The labels indicated that the items were in the custody of the Defense Reutilization and Marketing Office (DRMO). These items have been removed and disposed of off-Station by an authorized disposal contractor."

##### ***Visual Inspections of PCB A2 Vicinity***

The vicinity of PCB A2 was visually inspected by the Navy in November 1999, and in April and December 2000. PCB A2 is located adjacent to the west-northwest side of Building 326 adjacent to the north-northeast side of Building 324, and much of the area is unpaved. The site is relatively level and much of the site has a gravel cover. No stains or discolored areas were observed during the inspections and no transformers or other electronic equipment items were in storage at the site during the inspections. Building 326 and Building 324 were vacant during the inspections.

PCB A2 is located within the investigation boundary of IRP Site 24, and PCB A2 is located within the vadose zone vapor extraction well field for IRP Site 24. PCB A2 also encompasses the previously investigated Solid Waste Management Unit (SWMU) 95 which is located adjacent to the northeast side of Building 324. SWMU 95 was identified as a drum storage area at the former engine test cell (Building 324). Soil samples were collected from six (6) locations at SWMU 95 during the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), and a no further action recommendation was agreed to by the BRAC Cleanup Team.

A check list form documenting conditions during visual inspections and photographs of the vicinity of PCB A2 are presented in the Appendix.

## FIELD SAMPLING ACTIVITIES

### *PCB A2 Sampling Activities:*

Shallow soil samples were collected at PCB A2 in January 2000 by OHM Remediation Services under Navy Contract N68711-93-D-1459, DO #70. Based upon the historical information pertaining to PCB A2, oil-filled electronic equipment was temporarily stored in the area between Building 324 and Building 326 as shown in the EBS.

Consequently, soil samples were analyzed for petroleum hydrocarbons (USEPA Method 8015-Modified) and polychlorinated biphenyls (PCB)/pesticides (USEPA Methods 8081 and 8082). Samples were collected using a hand-auger and were analyzed according to selected laboratory procedures described in the *Draft Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine Corps Air Station, El Toro* (OHM, 1997).

Sample locations were chosen to provide coverage for the area that could have been used for electronic equipment storage. The area shown on the map in the EBS coincides with part of SWMU 95 which was sampled in 1992 during the RFA Sampling Visit, and consequently, only one sample was placed in this vicinity. Sample locations included the fenced area immediately west-northwest of Building 326, the area beyond the fenced area (west-northwest of the fenced area), and the area located between Buildings 324 and 326. Seventeen (17) field samples were collected in January 2000 at eight (8) locations shown on Figure 2. Laboratory test results for PCB A2 are summarized in Tables 1 and 2. USEPA Region IX Residential Preliminary Remediation Goals (PRGs) and screening cancer risk calculations are presented for analytes identified at or above the laboratory reporting limits.

PCB compounds (Aroclor 1016, Aroclor 1221, Aroclor 1232, Aroclor 1242, Aroclor 1248, Aroclor 1254, and Aroclor 1260) were not detected at or above laboratory reporting limits. Low levels of pesticides and petroleum hydrocarbons were reported. Laboratory test reports, chain of custody documentation, and the data validation report are included in the Appendix.

### *January 2001 Sampling Activities:*

**Hand-auger location PCBA2-HA01 (HA-01):** HA-01 is located west-northwest of the fenced enclosure on the west-northwest side of Building 326. Samples were collected at approximate depths of 1.5 and 3 feet below ground surface (bgs). Petroleum hydrocarbons (motor oil range), 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT were reported in both samples.

**Hand-auger location PCBA2-HA02 (HA-02):** HA-02 is located west-northwest of the fenced enclosure on the west-northwest side of Building 326. Samples were collected at approximate depths of 1.5 and 3 feet bgs. Petroleum hydrocarbons (motor oil range), 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, Alpha-BHC, and Delta-BHC were reported in both samples. Methoxychlor was reported in the 3-foot sample only.

**Hand-auger location PCBA2-HA03 (HA-03):** HA-03 is located west-northwest of the fenced enclosure on the west-northwest side of Building 326. Samples were collected at approximate depths of 1.5 and 3 feet bgs. 4,4'-DDT was reported in both samples. 4,4'-DDE and 4,4'-DDE were reported in the 1.5-foot sample.

**Hand-auger location PCBA2-HA04 (HA-04):** HA-04 is located within the fenced enclosure on the west-northwest side of Building 326. Samples were collected at depths of approximately 1.5 feet bgs, 3.0 feet bgs, and 4.0 feet bgs (field duplicate). Petroleum hydrocarbons (motor oil range) were reported in all samples.

**Hand-auger location PCBA2-HA05 (HA-05):** HA-05 is located near the south-southwest wall of Building 326 in the vicinity where empty pallets were observed in 1999. Samples were collected at approximate depths of 1.5 and 3 feet bgs. Petroleum hydrocarbons (motor oil range), PCB compounds, and pesticides were not identified at or above laboratory reporting limits in samples from HA-05.

**Hand-auger location PCBA2-HA06 (HA-06):** HA-06 is located north-northeast of Building 324. Samples were collected at approximate depths of 1.5 and 3 feet bgs. Petroleum hydrocarbons (motor oil range) and PCB compounds were not identified at or above laboratory reporting limits in samples from HA-06. 4,4'-DDT was identified in the 1.5-foot sample and heptachlor was identified in the 3-foot sample.

**Hand-auger location PCBA2-HA07 (HA-07):** HA-07 is located north-northeast of Building 324. Samples were collected at approximate depths of 1.5 and 3 feet bgs. Petroleum hydrocarbons (motor oil range), 4,4'-DDD, 4,4'-DDE, and 4, 4'-DDT were identified in both samples. PCB compounds were not identified at or above laboratory reporting limits in samples from HA-07.

**Hand-auger location PCBA2-HA08 (HA-08):** HA-08 is located within the vicinity of SWMU 95 on the north-northeast side of Building 324 between Buildings 324 and 326. Samples were collected at approximate depths of 1.5 and 3 feet bgs. PCB compounds and pesticides were not identified at or above laboratory reporting limits in samples from HA-08. Petroleum hydrocarbons (motor oil range), 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT were reported in both samples.

*RFA Sampling Visit of 1992:*

Six (6) soil samples were collected at three (3) locations at SWMU 95 during the RFA Sampling Visit in 1992, and samples were analyzed for fuel and petroleum hydrocarbons (EPA Methods 418.5 and 8015-Modified), volatile organic compounds, semi-volatile organic compounds, metals, and pesticides. Samples were collected at depths of two feet and five feet. According to the *Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine*

Corps Air Station, El Toro, California (Jacobs Engineering Group, 1993), metals were not detected above background levels and low levels of petroleum hydrocarbons, volatile organic compounds, semi-volatile organic compounds, and pesticides were detected.

Two semi-volatile organic compounds – diethylphthalate and di-n-butylphthalate – were reported as estimated values at concentrations of 30 micrograms per kilogram or less in all field samples and the RFA documentation identifies laboratory contamination as the cause. The volatile organic compounds – methylene chloride and acetone – were also reported at concentrations of 23 micrograms per kilogram or less in all field samples and the RFA documentation identifies laboratory contamination as the cause. The results of the sampling activities at SWMU 95 are also presented in Table 2, and Exhibit 4 in the Appendix shows the RFA sample locations with estimated locations of nearby Environmental Locations of Concern.

**Table 1. Analytical Test Methods and Maximum Concentrations Reported at PCB A2.**

Analytical Test Method	Analyte [Residential PRG and Screening Risk Level]	Maximum Concentration Reported
EPA Method 8081	Alpha – BHC [Residential PRG: 0.09 mg/kg Screening risk level: $3.1 \times 10^{-7}$ ]	0.028 milligrams per kilogram (Boring 02, 1.5-foot sample)
	Beta – BHC	Not detected at or above laboratory reporting limits or practical quantitation limits (PQLs) (ND)
	Delta – BHC No PRG established.	0.021 milligrams per kilogram "J" (Boring 02, 1.5-foot sample)
	Gamma – BHC (Lindane)	ND
	Alpha-Chlordane	ND
	Gamma-Chlordane	ND
	4,4'-DDD [Residential PRG (ca): 2.4 mg/kg Screening risk level: $5.4 \times 10^{-8}$ ]	0.13 milligrams per kilogram (Boring 01, 1.5-foot sample)
	4,4'-DDE [Residential PRG (ca): 1.7 mg/kg Screening risk level: $2.8 \times 10^{-7}$ ]	0.48 milligrams per kilogram "J" (Boring 01, 1.5-foot sample)
	4,4'-DDT [Residential PRG (ca): 1.7 mg/kg Screening risk level: $5.64 \times 10^{-7}$ ]	0.96 milligrams per kilogram (Boring 01, 1.5-foot sample)
	Aldrin	ND
	Dieldrin	ND
	Endosulfan I	ND
	Endosulfan II	ND

**Table 1. Analytical Test Methods and Maximum Concentrations Reported at PCB A2.  
 (continued).**

Analytical Test Method	Analyte [Residential PRG and Screening Risk Level]	Maximum Concentration Reported
	Endosulfan sulfate	ND
	Endrin	ND
	Endrin Aldehyde	ND
	Heptachlor [Residential PRG (ca): 0.11 mg/kg Screening risk level: $1.09 \times 10^{-8}$ ]	0.0012 milligrams per kilogram "J" (Boring 06, 3.0-foot sample)
	Heptachlor epoxide	ND
	Methoxychlor [Residential PRG (nc): 310 mg/kg]	0.0025 milligrams per kilogram "J" (Boring 02, 3.0-foot sample)
	Toxaphene	ND
<i>EPA Method 8082</i>		
	Aroclor 1016	ND
	Aroclor 1221	ND
	Aroclor 1232	ND
	Aroclor 1242	ND
	Aroclor 1248	ND
	Aroclor 1254	ND
	Aroclor 1260	ND
<i>EPA Method 8015 Modified – Total Petroleum Hydrocarbons (TPH) (Motor oil)</i>		
	Carbon range: C23-C30	360 milligrams per kilogram (Boring 02, 1.5-foot sample)

**Table 2. Summary of Detected Analytes at Each Sample Location at PCB A2.**

Sample Location and Sample Number	Analytes identified at or above practical quantitation limits	Comments
<i>Sample Location PCB A2-01</i>		
Sample 18609-2576 (1.5 foot depth)	TPH-motor oil: 280 mg/kg 4,4'-DDD: 0.13 mg/kg "J" 4,4'-DDE: 0.48 mg/kg "J" 4,4'-DDT: 0.96 mg/kg	
Sample 18609-2577 (3 foot depth)	TPH-motor oil: 60 mg/kg 4,4'-DDD: 0.023 mg/kg 4,4'-DDE: 0.11 mg/kg "J" 4,4'-DDT: 0.24 mg/kg	
<i>Sample Location PCB A2-02</i>		
Sample 18609-2578 (1.5 foot depth)	TPH-motor oil: 360 mg/kg Alpha BHC: 0.028 mg/kg Delta BHC: 0.021 mg/kg "J" 4,4'-DDE: 0.02 mg/kg "J" 4,4'-DDD: 0.03 mg/kg 4,4'-DDT: 0.071 mg/kg	
Sample 18609-2579 (3 foot depth)	TPH-motor oil: 160 mg/kg Alpha BHC: 0.01 mg/kg Delta BHC: 0.0088 mg/kg "J" 4,4'-DDE: 0.0071 mg/kg "J" 4,4'-DDD: 0.011 mg/kg 4,4'-DDT: 0.024 mg/kg Methoxychlor: 0.0025 mg/kg "J"	
<i>Sample Location PCB A2-03</i>		
Sample 18609-2580 (1.5 foot depth)	TPH-motor oil: ND 4,4'-DDE: 0.011 mg/kg "J" 4,4'-DDD: 0.021 mg/kg 4,4'-DDT: 0.018 mg/kg	
Sample 18609-2581 (3 foot depth)	TPH-motor oil: ND 4,4'-DDT: 0.0022 mg/kg "J"	
<i>Sample Location PCB A2-04</i>		
Sample 18609-2582 (1.5 foot depth)	TPH-motor oil: 150 mg/kg	
Sample 18609-2583 (3 foot depth)	TPH-motor oil: 200 mg/kg Heptachlor: 0.0011 mg/kg "J" 4,4'-DDE: 0.0035 mg/kg "J" 4,4'-DDT: 0.011 mg/kg	
Sample 18609-2584 (3 foot depth) field duplicate	TPH-motor oil: 40 mg/kg "J"	

**Table 2. Summary of Detected Analytes at Each Sample Location at PCB A2  
 (continued).**

Sample Location and Sample Number	Analytes identified at or above practical quantitation limits	Comments
<i>Sample Location PCB A2-05</i>		
Sample 18609-2585 (1.5 foot depth)	TPH-motor oil: ND	
Sample 18609-2586 (3 foot depth)	TPH-motor oil: ND	
<i>Sample Location PCB A2-06</i>		
Sample 18609-2587 (1.5 foot depth)	TPH-motor oil: ND 4,4'-DDT: 0.0053 mg/kg	
Sample 18609-2588 (3 foot depth)	TPH-motor oil: ND Heptachlor: 0.0012 mg/kg "J"	
<i>Sample Location PCB A2-07</i>		
Sample 18609-2589 (1.5 foot depth)	TPH-motor oil: 56 mg/kg 4,4'-DDD: 0.0088 mg/kg 4,4'-DDE: 0.0092 mg/kg "J" 4,4'-DDT: 0.04 mg/kg	
Sample 18609-2590 (3 foot depth)	TPH-motor oil: ND 4,4'-DDD: 0.0025 mg/kg "J" 4,4'-DDE: 0.0039 mg/kg "J" 4,4'-DDT: 0.025 mg/kg	
<i>Sample Location PCB A2-08</i>		
Sample 18609-2591 (1.5 foot depth)	TPH-motor oil: 270 mg/kg 4,4'-DDD: 0.011 mg/kg "J" 4,4'-DDE: 0.037 mg/kg "J" 4,4'-DDT: 0.083 mg/kg	
Sample 18609-2592 (3 foot depth)	TPH-motor oil: 160 mg/kg 4,4'-DDD: 0.011 mg/kg "J" 4,4'-DDE: 0.031 mg/kg "J" 4,4'-DDT: 0.062 mg/kg	
<i>RFA SWMU 95</i>		
Boring 095HA01 (2-foot sample)	Toluene: 1 ug/kg "J" 4,4'-DDE: 1.7 ug/kg "P" 4,4'-DDT: 6.0 ug/kg	PRGs for DDT compounds are identified in Table 1, and the maximum concentrations of DDT compounds were identified during the sampling activities at PCB A2.
Boring 095HA01 (5-foot sample)	Toluene: 2 ug/kg "J" PCE: 2 ug/kg "J"	
Boring 095HA02 (2-foot sample)	Toluene: 2 ug/kg "J"	
Boring 095HA02 (5-foot sample)	Toluene: 2 ug/kg "J" 4,4'-DDT: 2.5 ug/kg "JP"	
Boring 095HA03 (2-foot sample)	TRPH: 47.2 mg/kg 4,4'-DDT: 3 ug/kg "JP"	
Boring 095HA03 (5-foot sample)	Toluene: 5 ug/kg "J" PCE: 3 ug/kg "J" 4,4'-DDT: 4.4 ug/kg	Maximum Toluene and PCE concentrations at SWMU 95 were reported in this sample. Toluene Residential PRG: 520 mg/kg PCE Residential PRG: 5.7 mg/kg

Screening risk estimates were calculated for each analyte that was identified at or above the laboratory reporting limits. The cancer risk estimate was calculated using the maximum identified concentration for each analyte with the equation provided in the USEPA Region IX PRG publication dated 2000:

$$\text{Risk} = \{[\text{concentration}_x/\text{PRG}] + [\text{concentration}_y/\text{PRG}] + [\text{concentration}_z/\text{PRG}]\} \times 10^{-6}$$

Based upon the screening risk calculations, the residual risk attributable to the DDT compounds, Alpha-BHC, and heptachlor is approximately  $1.2 \times 10^{-6}$  which is within the generally allowable risk range of  $10^{-4}$  to  $10^{-6}$ .

Much of the estimated cancer risk is attributable to residual DDT compounds which are also present in background soils at MCAS El Toro. The background concentrations for 4,4'-DDT, 4,4'-DDE, and 4,4'-DDD at MCAS El Toro are 0.236 mg/kg, 0.145 mg/kg, and 0.236 mg/kg, respectively, and the risk attributable to background levels of DDT compounds is approximately  $3.7 \times 10^{-7}$ . The risk attributable to background levels of DDT compounds was subtracted from the site risk, and the resulting adjusted cancer risk estimate for PCB A2 is approximately  $8.5 \times 10^{-7}$ .

The residual petroleum hydrocarbons (characterized as motor oil) do not contain benzene, have low mobility, and are not considered to pose a significant risk to human health or the environment.

## 2.2 Historical Environmental Program Records

Records of previously completed environmental restoration program investigations were acquired and reviewed, and several environmental Locations of Concern are located in the vicinity of PCB A2. A description of the types of data collected near PCB A2 at adjacent Environmental Locations of Concern is presented in Table 3.

**Table 3. Investigation Activities at or near PCB A2.**

Location of Concern	Status	NFA or other Decision Document(s)	Comments
<i>PCB A2 Vicinity</i>			
UST 326A and UST 326B	NFA	Orange County Health Care Agency (OCHCA) letter dated 2 April 1998	Tank removal was conducted with OCHCA oversight.
SWMU 283 (also known as UST 326B)	NFA	Orange County Health Care Agency (OCHCA) letter dated 2 April 1998	One twenty-five foot deep boring was advanced and six soil samples were collected during the RFA Sampling Visit.
UST 324G	NFA	Orange County Health Care Agency (OCHCA) letter dated 23 October 2000	Tank removal and confirmation soil sampling conducted with oversight by OCHCA.
USTs 324A, B, C, D, and F	NFA	Orange County Health Care Agency (OCHCA) letter dated 18 March 1998	Tanks were removed with OCHCA oversight. Tanks were located more than 100 feet south of PCB A2.

**Table 3. Investigation Activities at or near PCB A2 (continued).**

Location of Concern	Status	NFA or other Decision Document(s)	Comments
<i>PCB A2 Vicinity</i>			
IRP Site 24	Remediation of vadose zone is in progress. Groundwater remediation to commence upon completion of the ROD and appropriate design documentation.	Interim Record of Decision of September 1997	Soil, soil gas, and groundwater sampling was conducted during the remedial investigation and during site remediation activities.  Vapor extraction well, 24SVE117, is located adjacent to the north-northeast side of Building 326, north-northeast of PCB A2.
SWMU 95 Drum Storage Area at Engine Test Cell (Building 324)	NFA	<i>Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine Corps Air Station, El Toro, California (JEG, 1993)</i>	Six soil samples were collected at SWMU 95 during the RFA Sampling Visit.  SWMU 95 is located within the PCB A2 investigation boundary.
<i>Ground Water Data</i>			
Monitoring wells were constructed at IRP Site 24 near PCB A2.			Routine groundwater monitoring reports have been submitted to the BCT.

**Environmental Baseline Survey (EBS)**

The Final Environmental Baseline Survey Report (JEG, 1995) did not identify temporary hazardous waste accumulation areas at or near PCB A2, and the nearest environmental locations of concern identified in the EBS are the former underground storage tanks – UST 324G, USTs 324A, B, C, D, and F, and USTs 326A and 326B.

The EBS provides the following description: “A PCB equipment storage area was identified at the equipment and drum storage area located on the north side of Building 324. During a routine site visit to MCAS El Toro, the Jacobs Team discovered miscellaneous electronic equipment (e.g., switches, capacitors) being stored in the vicinity of a less than 90-day accumulation area. The items were labeled with hazardous waste stickers indicating the contents as PCB-containing. The labels indicated that the items were in the custody of the Defense Reutilization and Marketing Office (DRMO). These items have been removed and disposed of off-Station by an authorized disposal contractor.” The map in the EBS identifies PCB A2 in the general vicinity of SWMU 95. Extracts from the EBS are presented in the Appendix.

### *Resource Conservation and Recovery Act Facility Assessment (RFA)*

Solid Waste Management Units (SWMUs) were identified and investigated in the vicinity of PCB A2 during the Resource Conservation and Recovery Act Facility Assessment (RFA). UST 326B was investigated as SWMU 283 and a TAA identified as SWMU 127 was identified at Building 445. SWMU 283 is located immediately adjacent to and north-northeast of PCB A2, and SWMU 127 is more than 200 feet west-northwest of PCB A2. One twenty-five foot deep boring was advanced at SWMU 283 (UST 326B) during the RFA Sampling Visit, and six samples were collected from the boring for analysis of petroleum hydrocarbons and volatile organic compounds. No petroleum hydrocarbons were identified at or above laboratory reporting limits, and toluene and PCE were identified as estimated concentrations in the range of 1 to 3 micrograms per kilogram. The review of historical waste management records did not confirm the existence of a TAA at Building 445 (SWMU 127), and this TAA was deleted as a phantom site with concurrence by the California Department of Toxic Substances Control in 1999.

Results of the RFA are published in the *Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine Corps Air Station, El Toro, California* (Jacobs Engineering Group, 1993), and extracts from the RFA are provided in the Appendix.

### *Installation Restoration Program*

PCB A2 is located within the investigation boundary of IRP Site 24 – the VOC Source Area – and west-southwest of IRP Site 7-the Drop Tank Drainage Area Number 2, Unit 2 (Old Eastern Pavement Edge). During the Remedial Investigation of IRP Site 24, soil gas samples were collected within the PCB A2 investigation area and TCE, PCE, Freon 113, and other VOCs were identified. Extracts from the soil gas survey of 1994 (JEG, 1994) for the vicinity of PCB A2 are included in the Appendix. An interim Record of Decision (ROD) was signed in 1997 for the vadose zone at IRP Site 24, and vadose zone remediation activities have been substantially completed as of January 2001.

PCB A2 is located approximately 100 feet south-southwest of vapor extraction well, 24SVE117, and an extract from a Site 24 progress report with data for this well is included in the Appendix.

A Draft Record of Decision for IRP Site 7 was issued for regulatory review and comment in November 2000. Unit 2 of IRP Site 7 is located east-northeast of PCB A2, and according to the Draft Record of Decision, nine shallow soil samples were collected from four borings and seven samples were collected from one deep boring. Extracts from the ROD are presented in the Appendix.

### *Underground Storage Tank (UST) Program*

Two UST sites are located within approximately 100 feet of PCB A2: UST Site 324G and UST Sites 326A and 326B (two tanks at one site). The tanks were removed from both sites with oversight by the Orange County Health Care Agency (OCHCA), and OCHCA has issued letters designating no further action status for both sites. Five tanks (USTs 324A, B, C, D, and F) are located more than 100 feet south of PCB A2, and these tanks were removed with oversight by OCHCA. Extracts from the tank removal documentation and copies of the OCHCA correspondence are presented in the Appendix.

### *BRAC Business Plan Information*

The Business Plan dated 2000 (Tables 2 and 3) describe the transformer storage area as follows: "PCB equipment storage area near Building 324." Extracts from the Business Plan are presented in the Appendix.

### *Aerial Photograph Anomaly Reports*

The United States Environmental Protection Agency (USEPA) and Science Applications International Corporation (SAIC) evaluated historical aerial photographs of the Marine Corps Air Station, El Toro and the results of the evaluations are published in the *Site Analysis, El Toro MCAS, Orange County, California* (USEPA, 1991) and the *Final Report, Aerial Photograph Assessment, MCAS El Toro* (SAIC, 1993). The anomaly, APHO 17 (a former stained area) near Buildings 324 and 325, was evaluated and inspected during 1999, and the BRAC Cleanup Team members agreed to no further action status for this site.

### *Hazardous Waste/Hazardous Materials Management Plan*

The Station's Hazardous Waste/Hazardous Materials Management Plan (HW/HMMP) was reviewed and extracts pertaining to the vicinity of PCB A2 are presented in the Appendix. The HW/HMMP does not identify temporary storage of hazardous wastes in the PCB A2 vicinity.

### *Storm Water Pollution Prevention Plan*

The Station's Storm Water Pollution Prevention Plan (SWPPP) was reviewed and extracts from the SWPPP for the vicinity of PCB A2 are presented in the Appendix of this report. No hazardous substances storage areas were identified in the vicinity of PCB A2, and no industrial activities were observed at Building 326 during the SWPPP field inspections.

Surface water from the PCB A2 vicinity discharges to storm drains that discharge to Agua Chinon Wash, located approximately 1,300 feet southeast of the site. Agua Chinon Wash and other surface drainage channels were investigated during the Remedial Investigation of Installation Restoration Program Site 25 – the Major

Drainages. A Comprehensive Environmental Response, Compensation, and Liability Act Record of Decision identifying no action for IRP Site 25 was signed in 1997.

### 2.3 Historical Property Records

Property records including the Station's plant account data base were acquired and reviewed, and information pertaining to structures located near PCB A2 is summarized in Table 4.

**Table 4. MCAS El Toro Property Records.  
PCB A2 Vicinity Buildings.**

Building Identification Number	Approximate year of acquisition or construction	Type of Use	Comments
<i>PCB A2 Vicinity</i>			
Building 324	1945	Training Building (Former Engine Test Cell)	Most recently used for administrative and storage functions.
Building 326	1945	Hazardous Waste Transfer Building (former recycling facility office)	

### 2.4 Ground Water Conditions

Ground water conditions have been investigated in the vicinity of PCB A2 during the Remedial Investigation at IRP Site 24. Ground water is located approximately 100 feet below ground surface based upon measurements from nearby wells, and the gradient is approximately west-northwest. PCB A2 overlies the volatile organic compound (VOC) plume originating at IRP Site 24, and groundwater beneath PCB A2 contains trichloroethylene (TCE) and other VOCs. The nearest Installation Restoration Program (IRP) monitoring well, 18PS8, is located approximately 500 feet west-northwest of PCB A2. Well 18PS8 was sampled twice for pesticides and PCBs during the early 1990's, and no pesticides or PCB compounds were identified at or above laboratory reporting limits (CDM, 1998). A conceptual site model is shown on Figure 3, and selected groundwater information for the PCB A2 vicinity is presented in the Appendix.

## Section 3

### ***Findings and Recommendations***

The following findings are based upon information collected during the record search activities and from observations during the visual inspections of the PCB A2 vicinity:

- PCB A2 is described as an electronic equipment storage area that was discovered by the JEG team during a routine site visit during the preparation of the Environmental Baseline Survey.
- The Hazardous Material/Hazardous Waste Management Plan and the Storm Water Pollution Prevention Plan do not identify storage of hazardous wastes or hazardous materials at PCB A2.
- Seventeen (17) shallow soil samples were collected from eight (8) locations at PCB A2 during January 2000, and no PCBs or pesticides were identified at or above United States Environmental Protection Agency Region IX Preliminary Remediation Goals (PRGs) for residential soils.
- Six (6) shallow soil samples were collected during the RCRA Facility Assessment from SWMU 95 which is located within the PCB A2 investigation area, and no VOCs or pesticides were identified at or above PRGs.
- Screening cancer risk calculations for residual pesticides indicate that the residual risk is approximately  $1.2 \times 10^{-6}$  without adjusting the risk calculation for background levels of DDT compounds. When the risk is adjusted for background levels of DDT compounds, the screening cancer risk estimate is less than  $1 \times 10^{-6}$ .
- The PCB A2 vicinity was visually inspected by Navy representatives in November 1999 and in May and December 2000, and no evidence of recent electronic equipment storage or stains or discolored areas was observed.

Based upon the results of the evaluation of historical records and the results of the visual inspections and soil sampling activities, it is recommended that *no further action status* be designated for PCB A2 and that *no further action status* be documented in the next BRAC Business Plan Update.

## Section 4

### ***References and/or Sources of Information***

CDM Federal Programs Corporation. 1998. Final Groundwater Monitoring Report, October 1997 Sampling Round, Groundwater Monitoring Program for Marine Corps Air Station, El Toro. [Navy Contract N68711-96-D-2029, Delivery Order 5]

CDM Federal Programs Corporation. 2000. Final Groundwater Monitoring Report, October-November 1998 Sampling Round, Marine Corps Air Station, El Toro.

County of Orange. 1999. Preferred Land Use Plan, Concept B. August. [prepared by the MCAS El Toro Local Redevelopment Authority]

Earth Tech. 2000. Progress Report, Vadose Zone Remediation, Volatile Organic Compound Source Area, Installation Restoration Program Site 24, Marine Corps Air Station, El Toro. February. [Navy Contract N62742-94-D-0048, CTO 68]

Integrated Environmental Management (IEM). 1997. Storm Water Pollution Prevention Plan (SWPPP) for Marine Corps Air Station, El Toro, El Toro, California. July. [Contract No. N68711-96-D-2059, Delivery Order Number 0002] {*Annotation: The IEM planning document included the acquisition and review of historical and current plans of facilities and utilities. Extracts from the IEM report are presented in the Appendix.*}

Jacobs Engineering Group (JEG). 1993. Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine Corps Air Station, El Toro, California. [Navy Contract N68711-89-D-9296, Contract Task Order 193]

Jacobs Engineering Group (JEG). 1994. Marine Corps Air Station, El Toro, El Toro, California, Installation Restoration Program, Remedial Investigation/Feasibility Study, Final Soil Gas Survey, Technical Memorandum, Sites 24 and 25. October. [Navy Contract N68711-89-D-9296, Contract Task Order 145]

Jacobs Engineering Group (JEG). 1995. Marine Corps Air Station, El Toro, El Toro, California, Final Environmental Baseline Survey Report. April. [Navy Contract N68711-89-D-9296, Contract Task Order 284]

OHM Remediation Services Corporation. 1997. *Draft Supplemental Work Plan (Work Plan), Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine Corps Air Station, El Toro.* [Navy Contract N68711-93-D-1459, Delivery Order 70.]

OHM Remediation Services Corporation. 2000. Tank Closure Letter Report, UST 324G, Marine Corps Air Station, El Toro. September. [Navy Contract N68711-93-D-1459, Delivery Order 70]

OHM Remediation Services Corporation. 2001. Technical Information Package, PCB A2, Marine Corps Air Station, El Toro. January. [Navy Contract N68711-93-D-1459, Delivery Order 70]

Science Applications International Corporation (SAIC). 1993. Final Report, Aerial Photograph Assessment, MCAS El Toro, Contract N68711-91-D-4658, Delivery Order 0002, SAIC Project No. 01-0892-0817.

Science Applications International Corporation (SAIC). 1994. Final Hazardous Material/Hazardous Waste Management Plan. August.

Southwest Division, Naval Facilities Engineering Command. 1999. Summary Report, APHO 17, Marine Corps Air Station, El Toro, California.

United States Environmental Protection Agency. 1991. Site Analysis, El Toro MCAS, Orange County, California.

United States Marine Corps Air Station, El Toro. 2000. Base Realignment and Closure (BRAC) Business Plan.

U.S. Marine Corps Air Station, El Toro. 2000. Draft Record of Decision, Operable Unit 3B, No Action Sites 7 and 14, Marine Corps Air Station, El Toro, California. November.

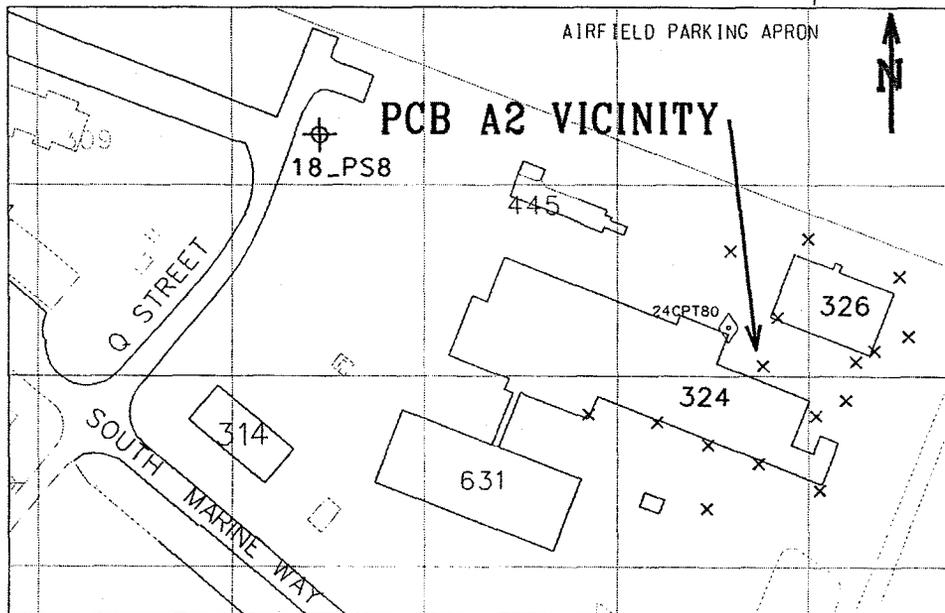
U.S. Marine Corps Air Station, El Toro. 1997. Draft Final Record of Decision, Operable Units 2A and 3A, No Action Sites, Marine Corps Air Station, El Toro, California. September.

United States Marine Corps Air Station, El Toro. 1994 and 1997. Building Guide.

United States Marine Corps Air Station, El Toro, Public Works Department Archives. 1954 and 1978 installation maps.

United States Marine Corps Air Station, El Toro. Circa 1946-1999. Station Property Records.

## Figures



**NOTES:**

- 1) Approximate Scale: 1 inch = 200 feet
- 2) X designates the location of soil gas survey points in the vicinity of PCB A2 (JEG, 1994)

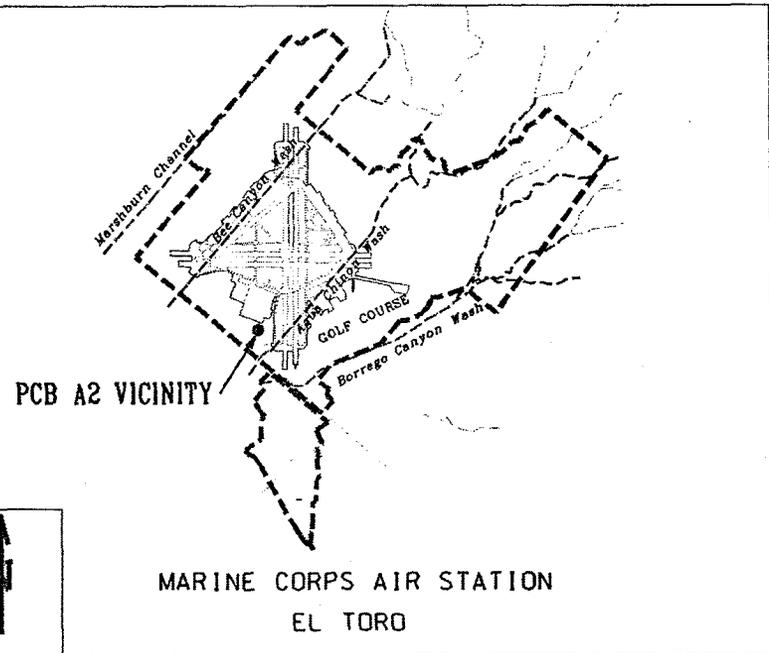
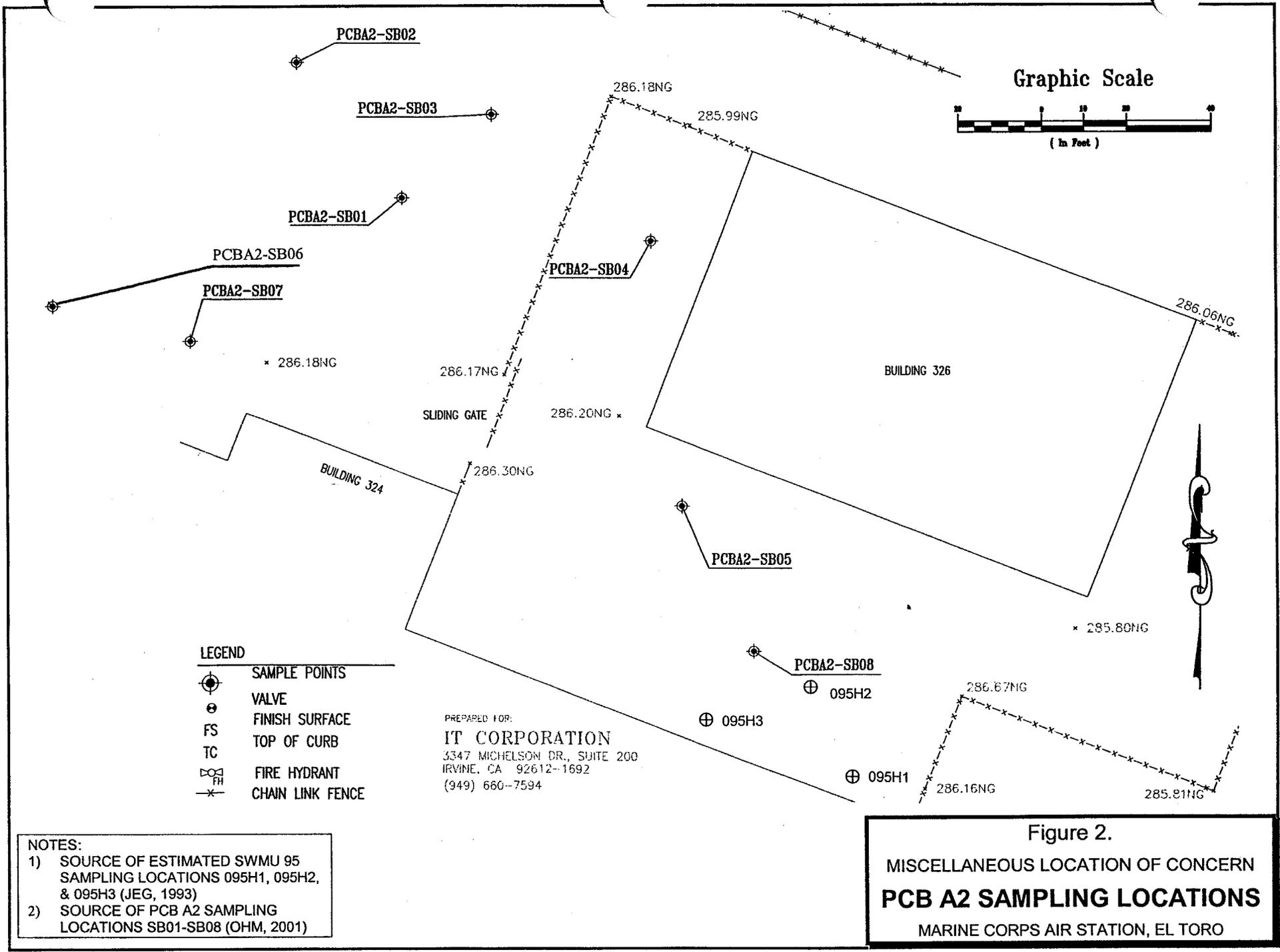


Figure 1.  
 MISCELLANEOUS LOCATION OF CONCERN  
**PCB A2 VICINITY MAP**  
 MARINE CORPS AIR STATION, EL TORO



FILE: PCBA2MDL.dgn

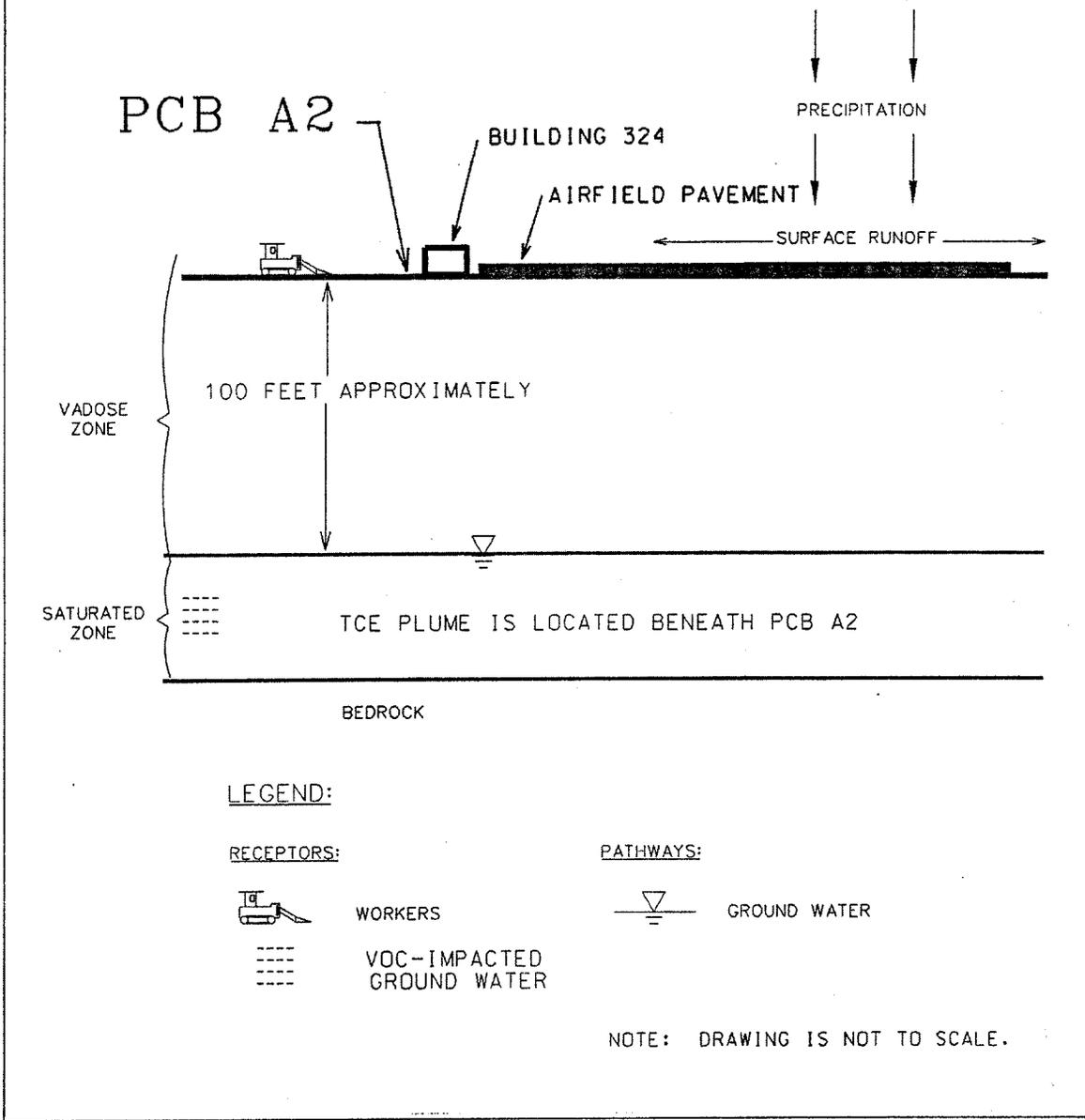


Figure 3.  
MISCELLANEOUS LOCATION OF CONCERN  
**PCB A2 CONCEPTUAL SITE MODEL**  
MARINE CORPS AIR STATION, EL TORO

# Appendix

## Site Photographs and Other Documentation

Site Photographs

Check List Form

Exhibits

Technical Information Package (Laboratory data for samples collected at  
PCB A2)

Extracts from BRAC Business Plan

Extracts from Environmental Baseline Survey Report

Extracts from RFA Report

Extracts from SWPPP

Extracts from HM/HWMP

No Further Action Decision Documents (Closure Letters and Draft Record  
of Decision for Sites 7 and 14) for Nearby Environmental Locations of  
Concern, Extracts from IRP Site 24 Vadose Zone Progress Report,  
Extracts from Soil Gas Survey Report of 1994, and Selected Ground Water  
Information

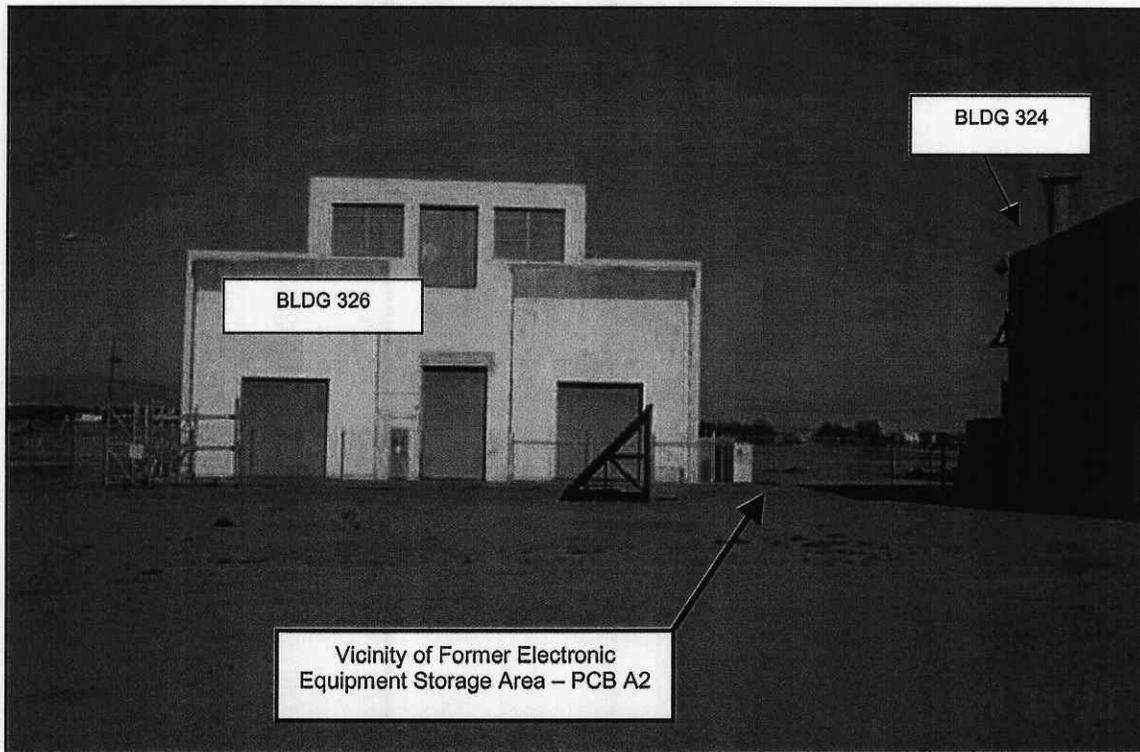
M60050.000641  
MCAS EL TORO  
SSIC # 5090.3

SITE PHOTOGRAPHS  
SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

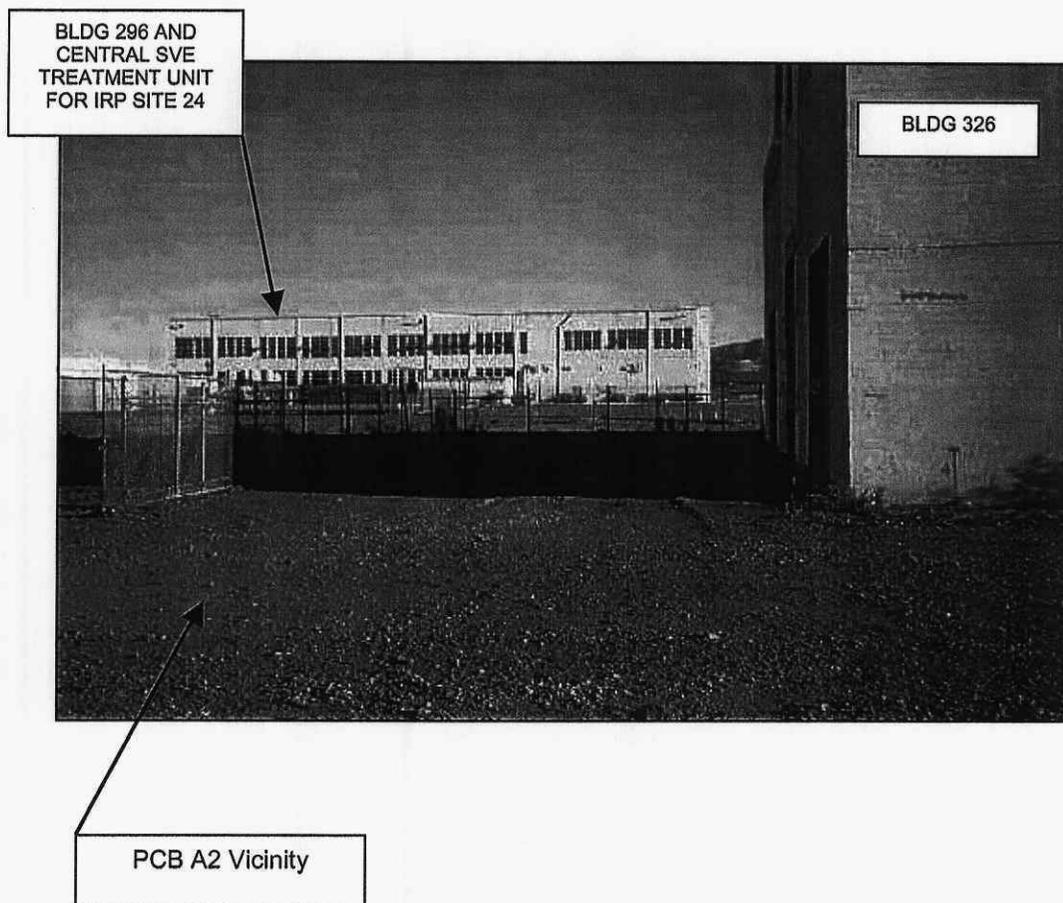
**Photograph 1. PCB A2 Vicinity.**  
**Former Electronic Equipment Storage Area Near Buildings 324 and 326.**  
**Looking Approximately Southeast.**  
**Marine Corps Air Station, El Toro**

Date of Photograph: 30 April 2000



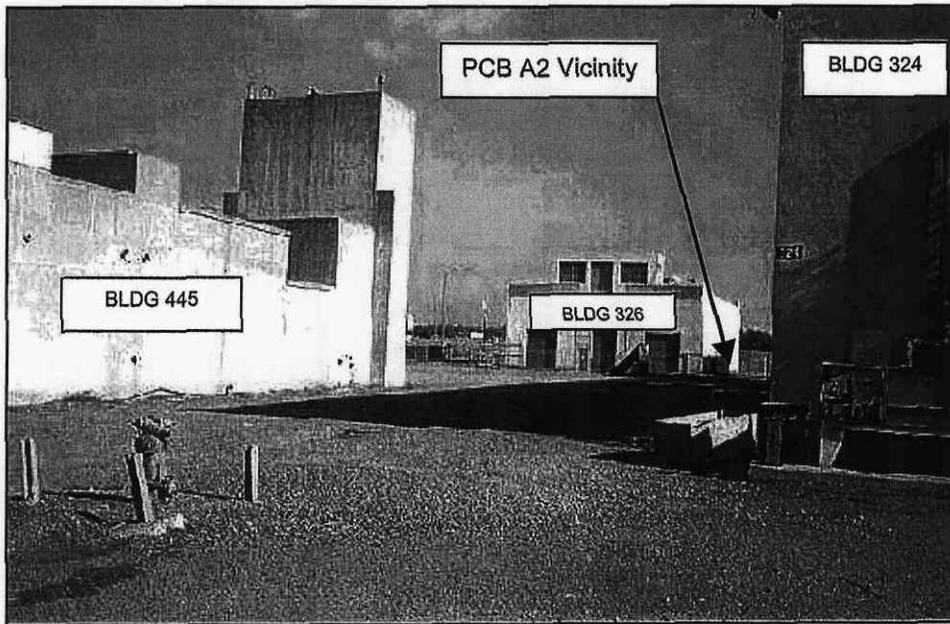
**Photograph 2. PCB A2 Vicinity.**  
Former Electronic Equipment Storage Area Near Buildings 324 and 326.  
Looking Approximately North-Northeast Toward Building 296.  
Marine Corps Air Station, El Toro

Date of Photograph: 27 December 2000



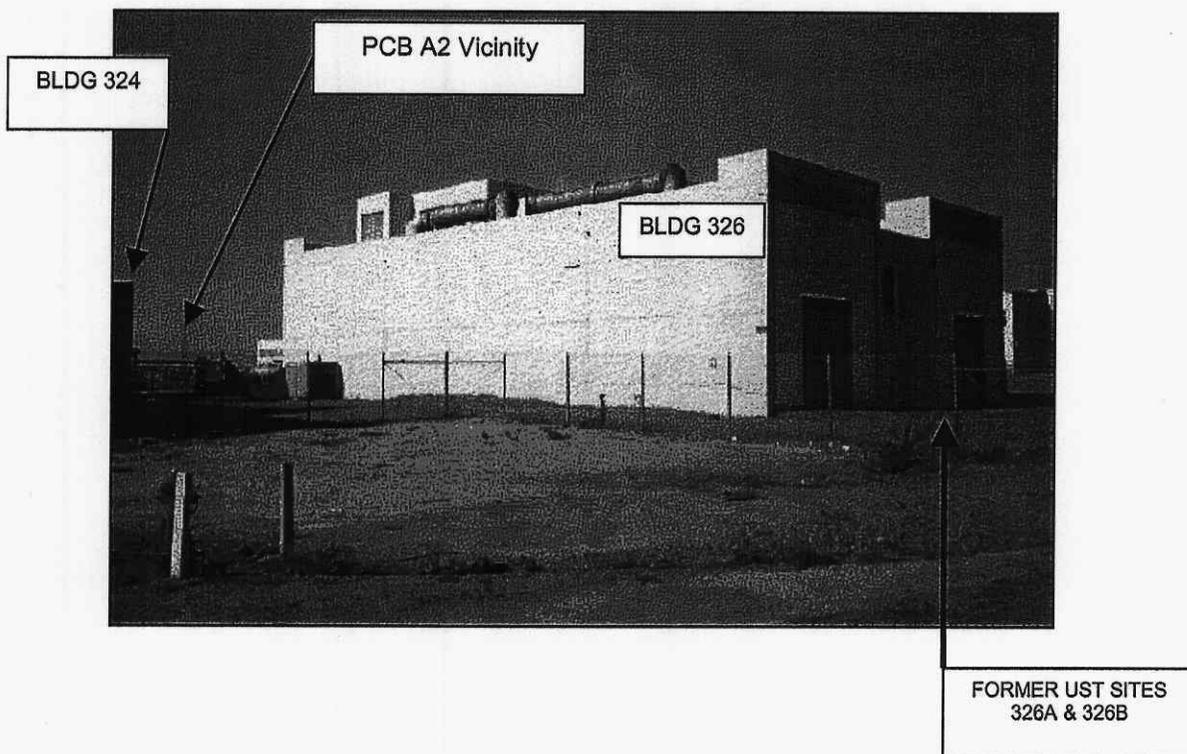
**Photograph 3. PCB A2 Vicinity.**  
**Former Electronic Equipment Storage Area Near Buildings 324 and 326.**  
**Marine Corps Air Station, El Toro**

Date of Photograph: 21 November 1999



**Photograph 4. PCB A2 Vicinity.**  
**Former Electronic Equipment Storage Area Near Buildings 324 and 326.**  
**Marine Corps Air Station, El Toro**

Date of Photograph: 21 November 1999



**Photograph 5. PCB A2 Vicinity.**  
**Former Electronic Equipment Storage Area Near Buildings 324 and 326.**  
**Marine Corps Air Station, El Toro**

Date of Photograph: 1994



PCB A2  
Vicinity

M60050.000641  
MCAS EL TORO  
SSIC # 5090.3

CHECK LIST FORM

SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

## CHECK LIST

### *Miscellaneous Location of Concern Program, Marine Corps Air Station, El Toro*

### Site Identification: PCB A2

**Recommendation:** *No Further Action Status*

**Site Description: Former Electronic Equipment Storage Area PCB A2**

*Source of Site Identification:* Final Environmental Baseline Survey Report (JEG, 1995): "A PCB equipment storage area was identified at the equipment and drum storage area located on the north side of Building 324. During a routine site visit to MCAS El Toro, the Jacobs Team discovered miscellaneous electronic equipment (e.g., switches, capacitors) being stored in the vicinity of a less than 90-day accumulation area. The items were labeled with hazardous waste stickers indicating the contents as PCB-containing. The labels indicated that the items were in the custody of the Defense Reutilization and Marketing Office (DRMO). These items have been removed and disposed of off-Station by an authorized disposal contractor."

**Visual Inspection Date (s):** 21 November 1999; 30 April 2000 and 27 December 2000

Participant(s) (with affiliation(s)) in inspection(s): *Lynn Marie Hornecker (US Navy)*

**Current Site Conditions:** PCB A2 is located adjacent to the west-northwest side of Building 326 and the north-northeast side of Building 324. Much of the area is unpaved and covered with gravel. No stains or discolored areas were observed. No electronic equipment or other equipment was being stored at the site during the inspections. Empty pallets were observed near the exterior wall of Building 326 during the 1999 inspection. A vapor extraction well for Installation Restoration Program (IRP) Site 24 (the Volatile Organic Compound (VOC) Source Area) – 24SVE117 – is located north-northeast of PCB A2 and north-northeast of Building 326.

Is there visual evidence of the storage area present at the site? *No.*

Is there evidence of past releases? *No.*

Are there indications of potential or current releases? *No.*

Description of photograph(s): *Photographs show the PCB A2 vicinity.*

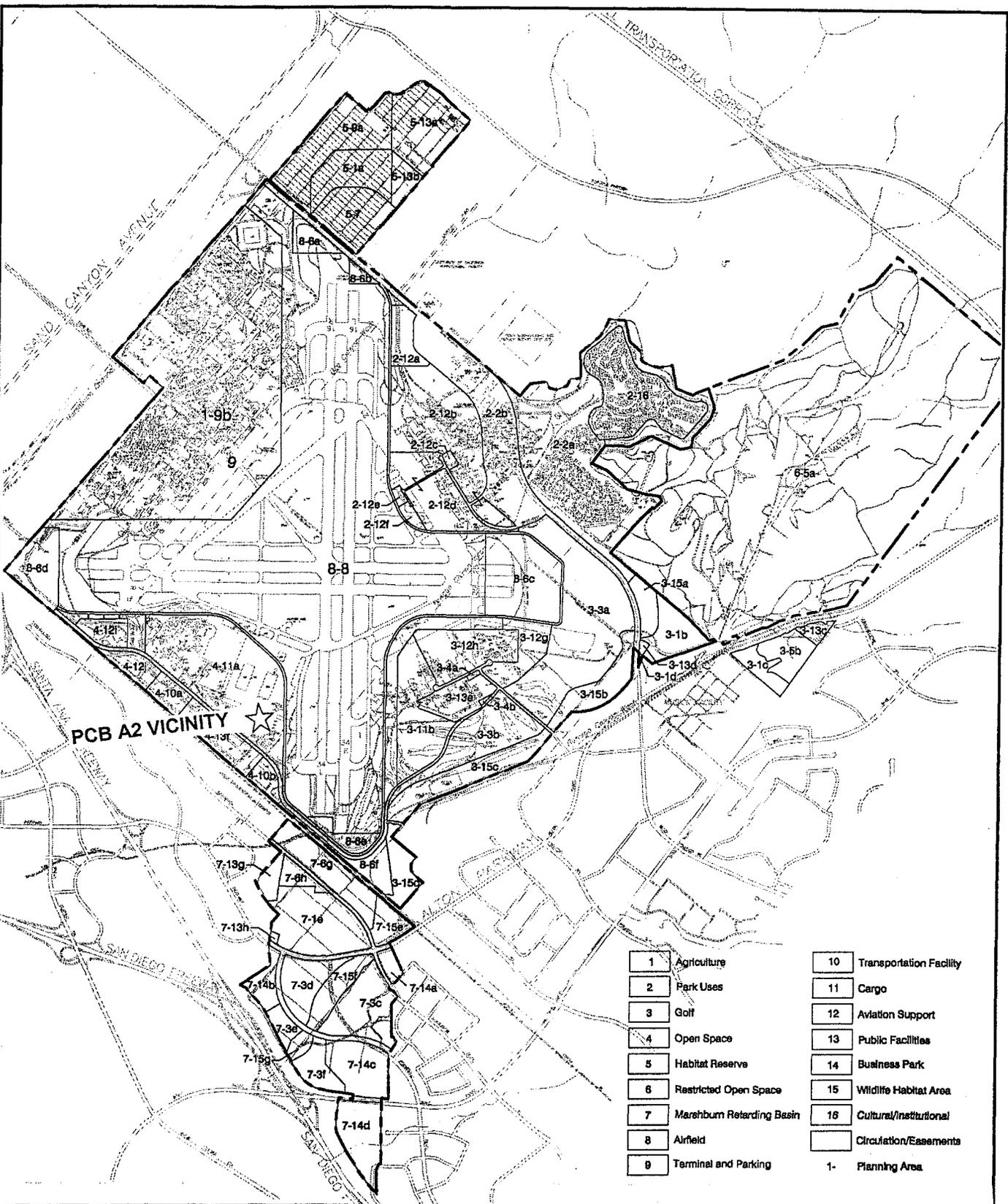
**Date of preparation of check list:** *17 January 2001*

EXHIBITS

SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

Witzel-Yanez Design 12/7/99 3:49 PM 18292502A.dwg



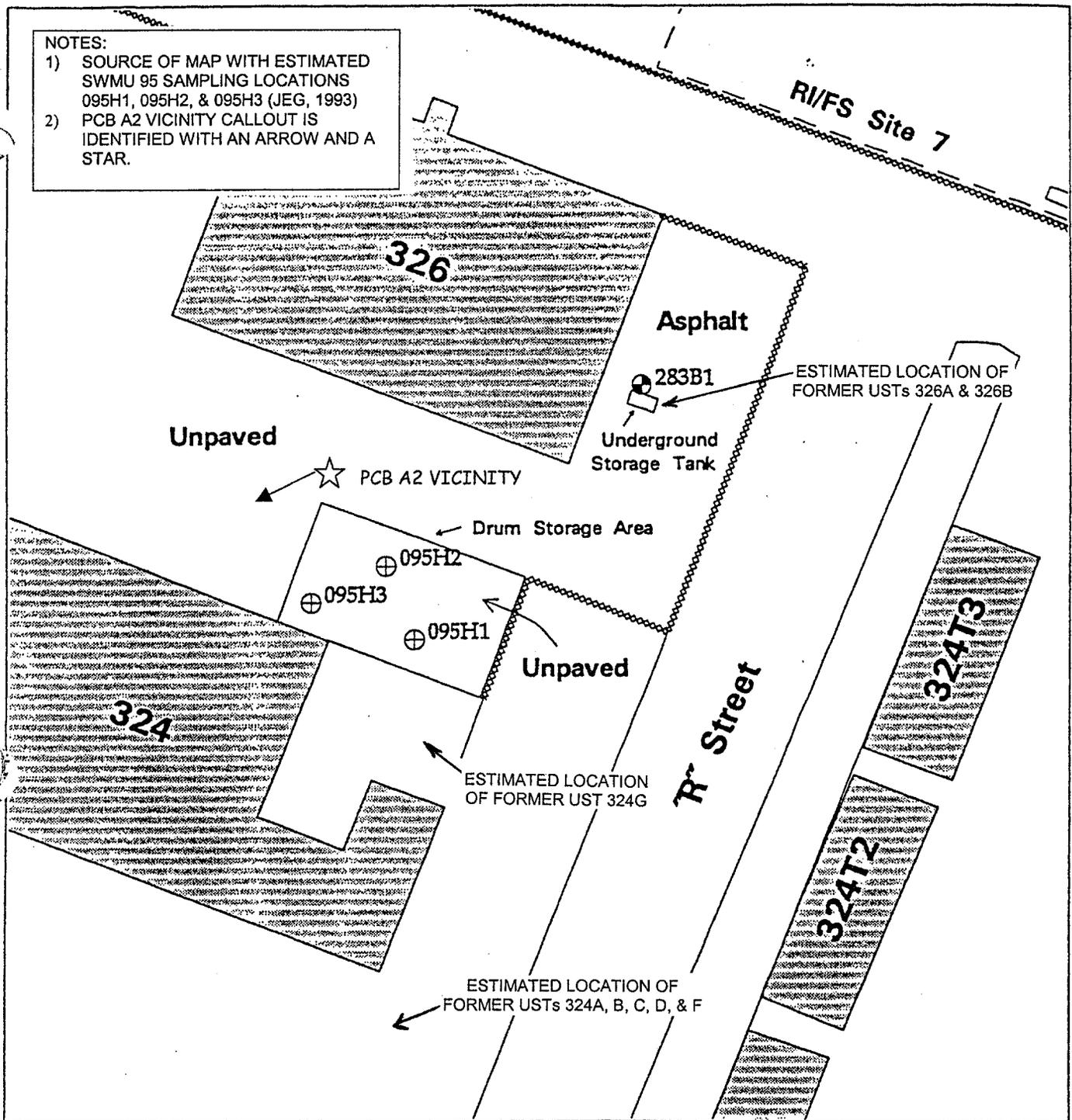
**NOTES:**  
 1) SOURCE OF MAP/REUSE PARCEL INFORMATION (COUNTY OF ORANGE)  
 2) ANNOTATIONS MADE BY THE WRITER OF THE PCB A2 REPORT ARE IDENTIFIED WITH AN ARROW OR A STAR SYMBOL: ☆

Exhibit 1.  
**Tentative Reuse Plan**  
 MARINE CORPS AIR STATION, EL TORO



**NOTES:**

- 1) SOURCE OF MAP WITH ESTIMATED SWMU 95 SAMPLING LOCATIONS 095H1, 095H2, & 095H3 (JEG, 1993)
- 2) PCB A2 VICINITY CALLOUT IS IDENTIFIED WITH AN ARROW AND A STAR.



**Figure 32 Sample Location Map**

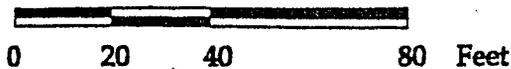
**Boring Location and Number:**

- ⊕ 123H4 5' Deep Boring
- ⊙ 123B4 25' Deep Boring
- ▲ 123A4 60' Long, Angle Boring

**Features:**

- Building
- Concrete
- Fence
- Railroad

**Scale**



**SWMU/AOC Number and Type:**

- 95 - Engine Test Cell
- 283 - Underground Storage Tank

Exhibit 4.

**SWMU 95 & PCB A2 VICINITY**

MARINE CORPS AIR STATION, EL TORO

UNITED STATES MARINE CORPS  
Marine Corps Air Station El Toro  
P O Box 94003  
Santa Ana, CA 92709-4003

EXTRACTS

11000  
1JP.7  
15 June 1994

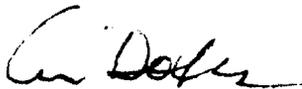
MEMORANDUM

From: Assistant Chief of Staff, Installations  
To: Distribution

Subj: FY94 BUILDING GUIDE

Encl: (1) MCAS El Toro Building Guide  
(2) MCAS Tustin Building Guide  
(3) MCAS Camp Pendleton Building Guide  
(4) Big Bear Building Guide

1. Enclosures (1) through (4) contain data for all Class II property on listed air stations and Big Bear.
2. It is requested the information be reviewed to ensure that future building guides are corrected. Please report discrepancies to the Planning Division at extension 2232.



ANN DOTSON  
By direction

DISTRIBUTION:  
MCAS A  
1JA List A, B  
MCAS Tustin: 50 copies  
MCAS Camp Pendleton: 50 copies

MCAS EL TORO BUILDING GUIDE

FAC NO.	MAP GRID	DESCRIPTION	TENANT	CAT CODE NUMB	COST ACCT CODE	SIZE
306	T6	PW Pipe/Heat/Refrig Shop	Installation	21910	EBBO	15712 SF
306	T6	Vacant (Water Treatment)	Installation	84209	EHCO	1000 SF
307	U6	EAF Storage	MWSS-373	44111	EBDO	3965 SF
307	U6	SDMS Recovery Hqs	SDMS	61072	EBFO	4300 SF
307	U6	EAF Wt Handling Shop	MWSS-373	21820	EBBO	23107 SF
307	U6	MC Storage	Vacant	44111	EBDO	3965 SF
308	M9	GSE Storage	MALS-11	21860	EBBO	720 SF
309	U8	Group Headquarters	MWSG-37	61071	EBFO	10368 SF
310	T9	To be demo	VAC (G-4)	21106	EBVO	1796 SF
311	U8	Fire Station #2	Security	73010	EBLO	3913 SF
312	U8	Photographic Bldg	Vacant	14160	EBNO	5243 SF
313	U8	Storage out of Stores	MWSS-373	44112	EBDO	30000 SF
313	U8	Field Maint Shop	CSSD-14	21453	EBBO	20000 SF
314	U9	Highbay Storage	Supply	61010	EBDO	6123 SF
315	T9	Air Frame Welding	Vacant	21106	EBVO	3444 SF
317	U7	Commissary Warehouse	DECA	44110	EBDO	126322
318	U8	General Warehouse Navy	Supply	44111	EBDO	81606
318	U8	MTIS Bldg	Supply	44173	EBDO	40803 SF
319	U8	General Warehouse MC (DRMO)	DRMO	44111	EBDO	70150 SF
319	U8	General Warehouse Navy	Supply	44111	EBDO	56579 SF
320	U7	Hazardous/Flam Storehouse	Supply	44130	EBDD	17100 SF
321	U8	Admin Office	Supply	61010	EBFO	37940 SF
321	U8	Data Processing Center	Vacant	61020	EBFO	6522 SF
321	U8	General Warehouse MC	Supply	44111	EBDO	25838 SF
322	U7	EM Mess Open	Vacant	72210	EBHO	10653 SF
→ 324	U9	Applied Instruction	NAMTRADET	21977	EBAQ	32680 SF
324	U9	Storage	Installation	44112	EBDO	11567 SF
324	U9	CO2 Storage	Sta/G-1	72111	EBGO	1611 SF
325	U9	Hazardous/Flam Storehouse	NAMTRADET	44130	EBDO	251 SF
→ 326	T9	Hazardous/Flam Storehouse	Environment	44130	EBDO	11446 SF
328	P4	Temp Admin Spaces	MACG-38	61070	EBFO	43923 SF
329	P3	DECA Headquarters	DECA	61010	EBFO	22328 SF
333	U8	Field Maint Shop	CSSD-14	21453	EBBO	2610 SF
335	T6	Water Distribution Bldg	Installation	84209	EHCO	1125 SF
341	M9	GSE Shop	MALS-11	21860	EBBO	468 SF
347	O3	Exchange Storage	MWR-Hosp	74085	EBLO	9306 SF
349	M10	Aircraft Beacon	Sta/G-3	13420	ECXO	1 E
355	U8	Snack Bar #12	MWR-Hosp	74005	EBLO	900 SF
357	U9	Hazardous/Flam Storehouse	Installation	44130	EBDO	192 SF
358	V3	Water Distribution Bldg	Installation	84209	EHCO	711 SF
359	U8	MTIS Building	Supply	44173	EBDO	13065 SF
360	U9	Strg MC Air/Grnd Organic Unit	Supply	44112	EBDO	124920 SF
363	N10	Misc POL Pipeline Shelter	Supply	12520	ECJO	200 SF
364	N1	Mess Hall #2	Food Serv	72210	EBHO	40817 SF
366	O2	Bachelor Enlisted Quarters	Station	72111	EBGO	44016 SF
367	O2	Bachelor Enlisted Quarters	Station	72111	EBGO	27725 SF
368	U6	Admin Office	Installation	61010	EBFO	19950 SF
369	T7	Servmart	Supply	44172	EBDO	29568 SF

# El Toro Building Guide

EXTRACTS

BLDG	GRI	DESCRIPTION	TENANT	CATCO	CAC	SIZE
1	P3	Admin(A&R,Compt,G-6,Insp)	Station	61010	EBFO	3406 SF
1	P3	Squadron Headquarters	SOMS	61010	EBFO	9084 SF
1	P3	Telephone Exchange	Sta/G-6	13140	EBMO	3278 SF
2	O5	Crew/Equipment Space	SOMS	21106	EBVO	3630 SF
2	O5	Hangar Bay (SAR)	SOMS	21105	EBVO	6740 SF
3	P5	Material/IMRL	SOMS	21106	EBVO	1560 SF
4	P5	Search and Rescue (SAR)	SOMS	14120	EBNO	1560 SF
5	P5	Auto Organizational Shop	MWCS-38	21451	EBBO	10370 SF
6	P5	Provost Marshal/Secur. Hdqrts	Sta/PMO	73020	EBLO	9226 SF
7	Q5	Storage Out of Stores	MWHS-3	44112	EBDO	10370 SF
8	Q5	Storage Out of Stores	MTACS-38	44112	EBDO	1560 SF
9	Q5	Storage Out of Stores	MTACS-38	44112	EBDO	1560 SF
10	R5	Aero Club Hangar	MWR/Rec	74075	EBLO	10370 SF
11	R4	Squadron Headquarters	MTACS-38	61072	EBFO	3960 SF
12	Q4	Group Headquarters	MWHS-3	61072	EBFO	3960 SF
13	P4	Group Headquarters	MWCS-38	61072	EBFO	3960 SF
14	O4	Squadron Headquarters	MWCS-38	61072	EBFO	3960 SF
15	O4	Elec/Comm Maint Shop	MWCS-38	21710	EBBO	3120 SF
15	O4	Radio Supply	MWCS-38	44112	EBDO	3120 SF
16	O4	Storage out of Stores	MWCS-38	44112	EBDO	6240 SF
17	P4	Elec/Comm Maint Shop	MWCS-38	21710	EBBO	6240 SF
19	Q4	Squadron HQs	MWHS-3	61072	EBFO	6240 SF
20	Q4	Maintenance/Storage	13th Dental	21871	EBBO	1560 SF
20	Q4	Storage out of Stores	MWHS-3	44112	EBDO	4680 SF
21	Q4	General Storage Shed	MWCS-38	44135	EBDO	640 SF
22	R4	Elec/Comm Maint Shop	MTACS-38	21710	EBBO	6240 SF
23	R4	Storage, out of Stores	MTACS-38	44112	EBDD	6240 SF
25	R4	Construction Shop	MWSS-373	21820	EBDO	6240 SF
26	R4	Communication Shop	MWSS-373	21820	EBBO	6240 SF
27	R4	PMO Storage	PMO	61077	EBFO	2080 SF
27	R4	Food Services Storage	MWSS-373	21820	EBFO	4160 SF
28	S4	Food Services	MWSS-373	21820	EBBO	4160 SF
29	S4	NIS Field Office	NIS	61010	EBFO	5760 SF
29	S4	Storage	3rd MAW	17177	EBAO	480 SF
31	S4	Utilities Shop/TAFDS	MWSS-373	21820	EBBO	6240 SF
32	S3	BOQ, W-1/0-2	Sta/G-4	72411	EBKO	20 PN
33	S3	BOQ, W-1/0-2 Transients	Sta/G-4	72411	EBKO	20 PN
34	S3	BOQ, W-1/0-2	Sta/G-4	72411	EBKO	20 PN
35	S3	BOQ, W-1/0-2 Transients	Sta/G-4	72411	EBKO	20 PN
38	S3	Museum Storage	Sta/G-4	76010	ECNO	100 SF
38	S3	Young Marines/Boy	Sta/G-4	61010	EBFO	9290 SF
46	R4	Reproduction	Sta/G-4	61010	EBFO	2280 SF
47	R4	(Constr/Wt. Handlg Eqp Shop)	Vacant	21820	EBBO	2980 SF
48	R4	FIIU Headquarters	MWHS-3	61072	EBFO	5148 SF
49	Q4	(Academic Instruction)	Vacant	61072	EBFO	4978 SF
49	Q4	(Squadron Headquarters)	Vacant	61072	EBFO	5088 SF

# El Toro Building Guide

BLDG	GRI	DESCRIPTION	TENANT	CATCO	CAC	SIZE
318	U8	MTIS Bldg	Supply	44173	EBDO	40803 SF
319	U8	General Warehouse MC	DRMO	44111	EBDO	70150 SF
319	U8	General Warehouse Navy	Supply	44111	EBDO	56579 SF
320	U7	Hazardous/Flam Storehouse	Supply	44130	EBDD	17100 SF
321	U8	Admin Office	Supply	61010	EBFO	37940 SF
321	U8	(Admin Office)	Vacant	61010	EBFO	4820 SF
321	U8	General Warehouse MC	Supply	44111	EBDO	25838 SF
321	U8	Admin Office	Station/G-4	61010	EBFO	3302 SF
322	U7	(EM Mess Open)	Vacant	72210	EBHO	10653 SF
324	U9	(Applied Instruction)	Vacant	17120	EBAO	32680 SF
324	U9	CO2 Storage	Sta/G-4	44112	EBDO	1611 SF
324	U9	Storage	Installation	21977	EBBO	11567 SF
325	U9	(Hazardous/Flam Storehouse)	Vacant	44130	EBDD	251 SF
326	T9	Hazardous/Flam Storehouse	Environment	83141	EAQO	11446 SF
328	P4	Temp Admin Spaces	MACG-38	61071	EBFO	43923 SF
329	P3	DECA Headquarters	DECA	61010	EBFO	22328 SF
333	U8	Field Maint Shop	CSSD-14	21453	EBBO	2610 SF
335	T6	Water Distribution Bldg	Installation	84209	EHCO	1125 SF
341	M9	GSE Shop	MALS-11	21860	EBBO	468 SF
347	O3	Exchange Food Service Whse	MWR/Hosp	74085	EBLO	9306 SF
349	M10	Aircraft Beacon	Sta/G-3	13420	ECXO	1 EA
355	U8	(Snack Bar #12)	Vacant	74005	EBLO	900 SF
357	U9	Hazardous/Flam Storehouse	Installation	44130	EBDO	192 SF
358	V3	Water Distribution Bldg	Installation	84209	EHCO	711 SF
359	U8	MTIS Building	Supply	44173	EBDO	13065 SF
360	U9	Strg MC Air/Grnd Organic Unit	Supply	44112	EBDO	124920
363	N10	Misc POL Pipeline Shelter	Supply	12520	ECJO	200 SF
364	N1	Mess Hall #2	Food Serv	72210	EBHO	40817 SF
366	O2	Bachelor Enlisted Quarters	Billeting	72111	EBGO	44016 SF
367	O2	Bachelor Enlisted Quarters	Billeting	72111	EBGO	27725 SF
368	U6	Installations/Environmental	Installation	61010	EBFO	19950 SF
368	U6	Installations	Installations	61010	EBFO	17868 SF
369	T7	Servmart	Supply	44172	EBDO	29568 SF
370	T6	PW Paint/Carp/Metal Trades	Installation	21910	EBBO	15280 SF
371	Q11	Engine Maintenance Shop	MALS-11	21121	EBVO	14094 SF
371	Q11	Maint Hangar 01 Space	VMFAT-101	21106	EBVO	16704 SF
371	Q11	Maint Hangar 02 Space	VMFAT-101	21107	EBVO	16704 SF
371	Q11	Maint Hangar OH Space	VMFAT-101	21105	EBVO	39150 SF
372	O8	Airfield Operations Bldg	Sta/G-3	14140	EBNO	22178 SF
372	O8	Control Tower	Sta/G-3	14170	EBNO	1323 SF
372	O8	Field Lighting Vault	Sta/G-3	81209	EHAO	674 SF
372	O8	(Snack Bar #3)	Vacant	74005	EBLO	1000 SF
372	O8	Stand-by Generator Bldg	Sta/G-3	81159	EAAO	400 SF
372	O8	Operations	FAA	14140	EBNO	1700 SF
374	Q11	Conversion Station	Installation	81310	EHAO	1813 SF
374	Q11	Heating Plant Bldg	Installation	82109	EABO	3773 SF

## Technical Information Package

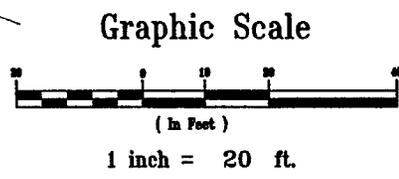
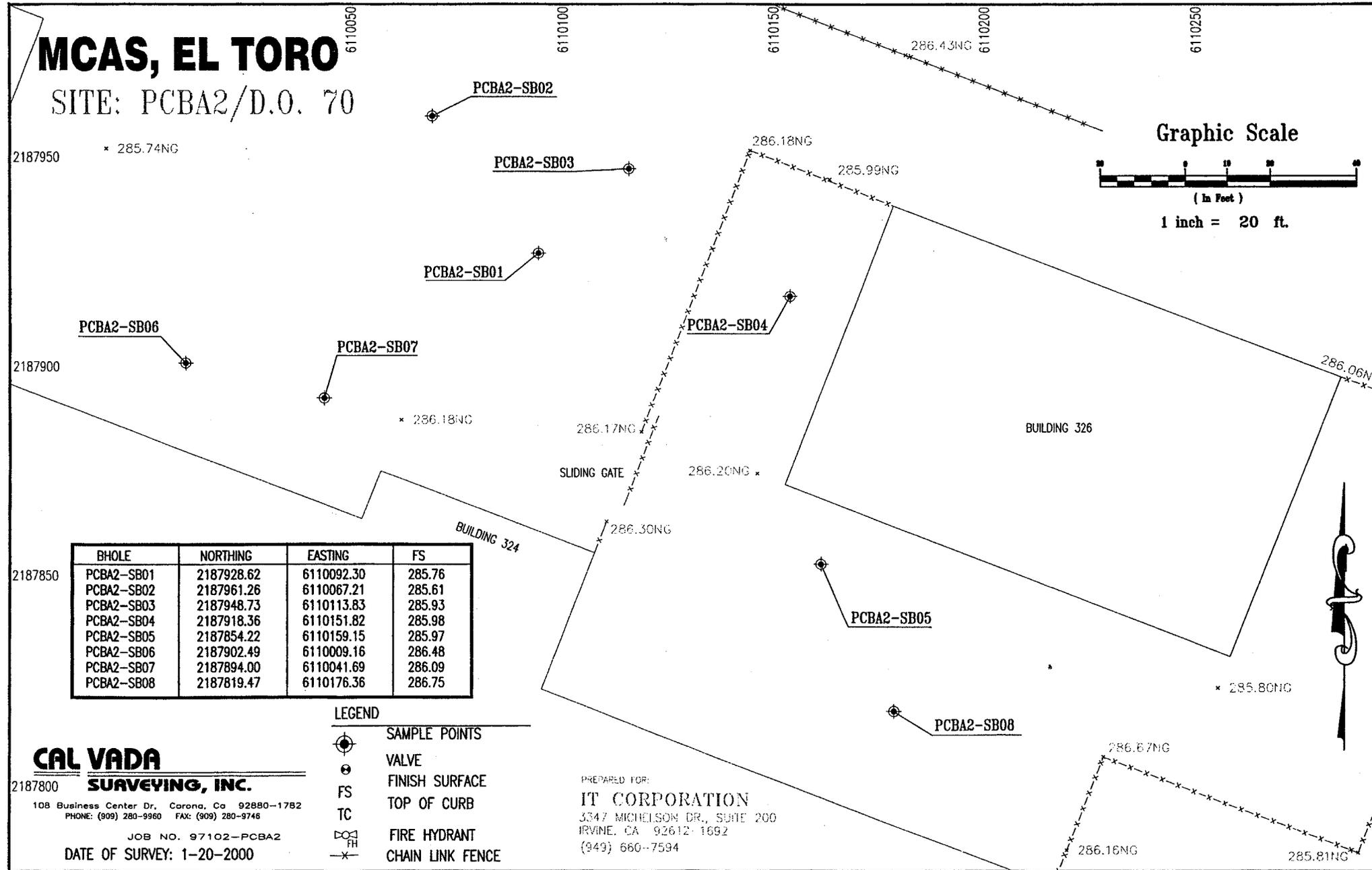
(OHM, 2001)

### Laboratory Data and Land Survey Data for PCB A2

Drawing has been  
Reduced.

# MCAS, EL TORO

## SITE: PCBA2/D.O. 70



BHOLE	NORTHING	EASTING	FS
PCBA2-SB01	2187928.62	6110092.30	285.76
PCBA2-SB02	2187961.26	6110067.21	285.61
PCBA2-SB03	2187948.73	6110113.83	285.93
PCBA2-SB04	2187918.36	6110151.82	285.98
PCBA2-SB05	2187854.22	6110159.15	285.97
PCBA2-SB06	2187902.49	6110009.16	286.48
PCBA2-SB07	2187894.00	6110041.69	286.09
PCBA2-SB08	2187819.47	6110176.36	286.75

- LEGEND**
- SAMPLE POINTS
  - VALVE
  - FINISH SURFACE
  - TOP OF CURB
  - FIRE HYDRANT
  - CHAIN LINK FENCE

**CAL VADA**  
**SURVEYING, INC.**  
108 Business Center Dr., Corona, Ca 92880-1782  
PHONE: (909) 280-9960 FAX: (909) 280-9748  
JOB NO. 97102-PCBA2  
DATE OF SURVEY: 1-20-2000

PREPARED FOR:  
**IT CORPORATION**  
3347 MICHELSON DR., SUITE 200  
IRVINE, CA 92612-1692  
(949) 660-7594

GUMPLET LEU/BU 23.00

**the i group** IT Corporation  
2790 Mossdale Blvd.  
Monroeville, PA 15146-2792  
(412)372-7701

**CHAIN-OF-CUSTODY RECORD**

PROJECT DATA MANAGER'S COPY  
**A 10645**  
FORM 0019 REV. 9-99

**PCB AZ**

IT'S LAB COORDINATOR <b>M. Conception</b>	LAB COORDINATOR'S PHONE <b>949-7060-7550</b>	LAB COORDINATOR'S FAX <b>949-475-5433</b>	LABORATORY SERVICE ID <b>A054</b>	LABORATORY CONTACT <b>EMAX</b>	MAIL REPORT (COMPANY NAME) <b>IT Group</b>
PROJECT NAME <b>E1 Torr-0070</b>	PROJECT LOCATION <b>MCAE E1 Torr, CA</b>	PROJECT NUMBER <b>18609</b>	LABORATORY PHONE <b>310-618-8884</b>	LABORATORY FAX	RECIPIENT NAME <b>Wayne Ishida</b>
PROJECT CONTACT <b>M. Conception</b>	PROJECT PHONE NUMBER <b>949-451-1667</b>	PROJECT FAX <b>949-475-5433</b>	LABORATORY ADDRESS <b>630 Maple</b>	ADDRESS <b>3347 Michelson #200</b>	
PROJECT ADDRESS	CITY, STATE AND ZIP CODE	CLIENT <b>SWDIV</b>	CITY, STATE AND ZIP CODE <b>Torrance CA</b>	CITY, STATE AND ZIP CODE <b>Irvine, CA</b>	
PROJECT MANAGER <b>B. Sedlak</b>	PROJECT MANAGER'S PHONE <b>949-660-8446</b>	PROJECT MANAGER'S FAX	Analyze from 'x' Analyzes PCB-AZ-01-02 PCB-AZ-03-04 PCB-AZ-05-06 PCB-AZ-07-08 PCB-AZ-09-10		

Item	Sample Identifier	Matrix	2000 Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyzes	Comments	Sample Type			
											G	C	F	QC
1	18609-2576	S	1-17-1335	40C	1	3	5day	X	X					
2	18609-2577	S	1-17-1345	40C	1	3	5day							
3	18609-2578	S	1-17-1400	40C	1	3	5day							
4	18609-2579	S	1-17-1410	40C	1	3	5day							
5	18609-2580	S	1-17-1425	40C	1	3	5day							
6	18609-2581	S	1-17-1430	40C	1	3	5day							
7	18609-2582	S	1-17-1440	40C	1	3	5day							
8	18609-2583	S	1-17-1450	40C	1	3	5day							
9	18609-2584	S	1-17-1455	40C	1	3	5day							
10	18609-2585	S	1-17-1455	40C	1	3	5day							

SAMPLES COLLECTED BY: <b>M. Jellison</b>	COURIER AND AIR BILL NUMBER: <b>Chunier</b>	COOLER TEMPERATURE UPON RECEIPT:
RELINQUISHED BY: <b>Wayne Ishida</b>	RECEIVED BY: <b>Wayne Ishida</b>	SAMPLE'S CONDITION UPON RECEIPT:
	DATE: <b>1-17-00</b>	TIME: <b>6:30</b>

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - Project Data Manager

**Project Information Section  
For Project Personnel Only  
Do Not Submit to Laboratory**

**PCB AZ**

Sample Point Location	Sample Type			
	G	C	F	QC
① PCB AZ-01 18" bgs + 10-15'	X			
② PCB AZ-01 26" bgs 2.5'-3.0'	X			
③ PCB AZ-02 1.5'-2.0' bgs	X			
④ PCB AZ-02 3.0'-3.5' bgs	X			
⑤ PCB AZ-03 1.5'-2.0' bgs	X			
⑥ PCB AZ-03 3.0'-3.5' bgs	X			
⑦ PCB AZ-04 0.5'-1.5' bgs	X			
⑧ PCB AZ-04 3.0'-3.5' bgs	X			
⑨ PCB AZ-08 3.5'-4.0' bgs (Dup)	X			

Comments

4667

XU



4539H

**EMAX**  
LABORATORIES, INC.

630 Maple Ave.  
Torrance, CA 90503  
Telephone: (310) 618-8889  
Fax: (310) 618-0818

Date: 02-16-2000  
EMAX Batch No.: 00A054

Attn: Dwayne Ishida

IT Corporation  
3347 Michelson Dr. # 200  
Irvine CA 92612

Subject: Laboratory Report  
Project: MCAS El Toro/18609/D.O. 70

-----  
Enclosed is the Laboratory report for samples received on  
01/17/00. The data reported include :

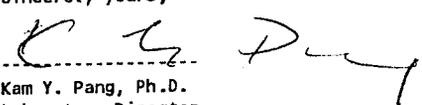
Sample ID	Control #	Col Date	Matrix	Analysis
18609-2576	A054-01	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2577	A054-02	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2578	A054-03	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2579	A054-04	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2580	A054-05	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2581	A054-06	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2582	A054-07	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2583	A054-08	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2584	A054-09	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2585	A054-10	01/17/00	Soil	Modified 8015 by Extraction

Sample ID	Control #	Col Date	Matrix	Analysis
18609-2586	A054-11	01/17/00	Soil	Pesticides and PCBs by GC Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2587	A054-12	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2588	A054-13	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2589	A054-14	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2590	A054-15	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2591	A054-16	01/17/00	Soil	Modified 8015 by Extraction Pesticides and PCBs by GC
18609-2592	A054-17	01/17/00	Soil	Pesticides and PCBs by GC Modified 8015 by Extraction
18609-2593	A054-18	01/17/00	Water	Modified 8015 by Extraction Pesticides and PCBs by GC

The results are summarized on the following pages.

Please feel free to call if you have any questions concerning these results.

Sincerely yours,

  
 -----  
 Kam Y. Pang, Ph.D.  
 Laboratory Director

1001

METHOD M8015  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : IT CORPORATION  
Project : MCAS EL TORO/18609/D.O. 70  
Batch No. : 00A054

Matrix : SOIL  
Instrument ID : GCT043

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SUR1 (%)	DLF	MOIST	PQL (mg/kg)	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1S	DSA043SB	ND	84	1	NA	50	25.2	01/27/0022:10	01/25/0013:30	DA25018A	DA25016A	DSA043S	NA	01/25/00
LCS1S	DSA043SL	470	85	1	NA	50	25.2	01/27/0022:52	01/25/0013:30	DA25019A	DA25016A	DSA043S	NA	01/25/00
18609-2576	A054-01	280	93	1	12.0	56.8	28.6	01/27/0023:33	01/25/0013:30	DA25020A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2577	A054-02	60	95	1	11.9	56.8	28.6	01/28/0000:15	01/25/0013:30	DA25021A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2578	A054-03	360	102	1	12.2	56.9	28.7	01/28/0000:56	01/25/0013:30	DA25022A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2579	A054-04	160	91	1	10.6	55.9	28.1	01/28/0001:38	01/25/0013:30	DA25023A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2580	A054-05	ND	93	1	8.9	54.9	27.6	01/28/0002:19	01/25/0013:30	DA25024A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2581	A054-06	ND	95	1	8.9	54.9	27.6	01/28/0003:01	01/25/0013:30	DA25025A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2582	A054-07	150	97	1	14.4	58.4	29.4	01/28/0003:42	01/25/0013:30	DA25026A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2583	A054-08	200	97	1	15.5	59.2	29.8	01/28/0004:24	01/25/0013:30	DA25027A	DA25016A	DSA043S	01/17/00	01/17/00
18609-2584	A054-09	40J	96	1	17.6	60.7	30.5	01/28/0006:28	01/25/0013:30	DA25030A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2585	A054-10	ND	98	1	10.4	55.8	28.1	01/28/0007:10	01/25/0013:30	DA25031A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2585MS	A054-10M	533	89	1	10.4	55.8	28.1	01/28/0007:51	01/25/0013:30	DA25032A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2585MSD	A054-10S	549	89	1	10.4	55.8	28.1	01/28/0008:32	01/25/0013:30	DA25033A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2586	A054-11	ND	96	1	16.3	59.7	30.1	01/28/0009:14	01/25/0013:30	DA25034A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2587	A054-12	ND	99	1	11.4	56.4	28.4	01/28/0009:56	01/25/0013:30	DA25035A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2588	A054-13	ND	97	1	12.4	57.1	28.7	01/28/0010:37	01/25/0013:30	DA25036A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2589	A054-14	56	101	1	9.3	55.1	27.7	01/28/0011:19	01/25/0013:30	DA25037A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2590	A054-15	ND	96	1	10.1	55.6	28	01/28/0012:01	01/25/0013:30	DA25038A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2591	A054-16	270	96	1	12.2	56.9	28.7	01/28/0012:42	01/25/0013:30	DA25039A	DA25028A	DSA043S	01/17/00	01/17/00
18609-2592	A054-17	160	99	1	8.9	54.9	27.6	01/28/0014:48	01/25/0013:30	DA25042A	DA25040A	DSA043S	01/17/00	01/17/00

PQL: Practical Quantitation Limit  
SUR1 : Bromobenzene

5003

METHOD M8015  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : IT CORPORATION  
Project : MCAS EL TORO/18609/D.O. 70  
Batch No. : 00A054

Matrix : WATER  
Instrument ID : GCT019

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SUR1 (%)	DLF	MOIST	PQL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSA028WB	ND	69	1	NA	.5	.246	01/24/0009:43	01/19/0015:30	TA10103A	TA10096A	DSA028W	NA	01/19/00
LCS1W	DSA028WL	4.95	76	1	NA	.5	.246	01/24/0010:21	01/19/0015:30	TA10104A	TA10096A	DSA028W	NA	01/19/00
LCD1W	DSA028WC	5.16	74	1	NA	.5	.246	01/24/0010:58	01/19/0015:30	TA10105A	TA10096A	DSA028W	NA	01/19/00
18609-2593	A054-18	ND	68	.94	NA	.47	.231	01/26/0001:20	01/19/0015:30	TA11024A	TA11012A	DSA028W	01/17/00	01/17/00

PQL: Practical Quantitation Limit  
SUR1 : Bromobenzene

5004

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2576             Date Analyzed: 01/24/00 22:38
Lab Samp ID : A054-01                Dilution Factor: 20
Lab File ID : WA20150A              Matrix          : SOIL
Ext Btch ID : CPA012S               % Moisture     : 12.0
Calib. Ref. : WA20141A             Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	.011J (ND)	.043	.0091 .0077
GAMMA-BHC (LINDANE)	(ND) ND	.45	.0072 .0092
BETA-BHC	(ND) ND	.75	.0058 .0039
HEPTACHLOR	(ND) ND	.45	.0083 .0089
DELTA-BHC	(ND) ND	.25	.005 .0048
ALDRIN	(ND) ND	.34	.0054 .0044
HEPTACHLOR EPOXIDE	(ND) ND	.48	.0067 .0067
GAMMA-CHLORDANE	(ND) ND	.34	.0094 .017
ALPHA-CHLORDANE	(ND) ND	.34	.014 .0088
ENDOSULFAN I	(ND) ND	.48	.011 .0096
4,4'-DDE	(.51J) .51J	.95	.01 .011
DIELDRIN	(ND) ND	.8	.0065 .005
ENDRIN	(ND) ND	.82	.0054 .0049
4,4'-DDD	.16 (.)	.068	.0074 .0078
ENDOSULFAN II	(ND) ND	.55	.01 .0097
4,4'-DDT	(1E) 1E	.068	.0051 .0051
ENDRIN ALDEHYDE	(ND) ND	.36	.0045 .003
ENDOSULFAN SULFATE	(ND) ND	.82	.009 .0078
METHOXYCHLOR	(ND) ND	1.3	.005 .0045
TOXAPHENE	(ND) ND	16	.027 .047
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(DO) DO	35-135	
DECACHLOROBIPHENYL	(DO) DO	25-143	

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2576DL          Date Analyzed: 01/24/00 23:03
Lab Samp ID: A054-01T              Dilution Factor: 40
Lab File ID: WA20151A              Matrix          : SOIL
Ext Btch ID: CPA012S              % Moisture     : 12.0
Calib. Ref.: WA20141A              Instrument ID   : GCT016
=====

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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.086	.018 .015
GAMMA-BHC (LINDANE)	(ND) ND	.91	.014 .019
BETA-BHC	(ND) ND	1.5	.012 .0079
HEPTACHLOR	(ND) ND	.91	.017 .018
DELTA-BHC	(ND) ND	.5	.01 .0095
ALDRIN	(ND) ND	.68	.011 .0087
HEPTACHLOR EPOXIDE	(ND) ND	.95	.013 .014
GAMMA-CHLORDANE	(ND) ND	.68	.019 .034
ALPHA-CHLORDANE	(ND) ND	.68	.027 .018
ENDOSULFAN I	(ND) ND	.95	.022 .019
4,4'-DDE	(.48J) .45J	1.9	.02 .021
DIELDRIN	(ND) ND	1.6	.013 .010
ENDRIN	(ND) ND	1.6	.011 .0097
4,4'-DDD	(.13J) .096J	.14	.015 .016
ENDOSULFAN II	(ND) ND	1.1	.02 .019
4,4'-DDT	(.96) .91	.14	.01 .01
ENDRIN ALDEHYDE	(ND) ND	.73	.009 .0059
ENDOSULFAN SULFATE	(ND) ND	1.6	.018 .016
METHOXYCHLOR	(ND) ND	2.6	.01 .0089
TOXAPHENE	(ND) ND	32	.055 .094
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(DO) DO	35-135	
DECACHLOROBIPHENYL	(DO) DO	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2577                Date Analyzed: 01/24/00 23:29
Lab Samp ID: A054-02                   Dilution Factor: 1
Lab File ID: WA20152A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture     : 11.9
Calib. Ref.: WA20141A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	.0009J (ND)	.0022	.00046 .00039
GAMMA-BHC (LINDANE)	(ND) ND	.023	.00036 .00046
BETA-BHC	(ND) ND	.037	.00029 .0002
HEPTACHLOR	.0029J (.00068J)	.023	.00041 .00044
DELTA-BHC	(ND) ND	.012	.00025 .00024
ALDRIN	(ND) ND	.017	.00027 .00022
HEPTACHLOR EPOXIDE	(ND) ND	.024	.00033 .00034
GAMMA-CHLORDANE	(ND) ND	.017	.00047 .00084
ALPHA-CHLORDANE	.0017J (.00056J)	.017	.00068 .00044
ENDOSULFAN I	(ND) ND	.024	.00054 .00048
4,4'-DDE	.066E (.07E)	.048	.00051 .00052
DIELDRIN	(ND) .0027J	.04	.00033 .00025
ENDRIN	(ND) ND	.041	.00027 .00024
4,4'-DDD	(.016) .014	.0034	.00037 .00039
ENDOSULFAN II	(ND) ND	.027	.00051 .00048
4,4'-DDT	(.15E) .15E	.0034	.00026 .00025
ENDRIN ALDEHYDE	(ND) ND	.018	.00023 .00015
ENDOSULFAN SULFATE	(ND) ND	.041	.00045 .00039
METHOXYCHLOR	.0079J (.0027J)	.065	.00025 .00022
TOXAPHENE	(ND) ND	.79	.0014 .0024
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	87 (88)	35-135	
DECACHLOROBIPHENYL	(99) 168*	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/B081  
PESTICIDES/PCBS

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2577DL           Date Analyzed: 01/24/00 23:54
Lab Samp ID: A054-02T                Dilution Factor: 5
Lab File ID: WA20153A                Matrix       : SOIL
Ext Btch ID: CPA012S                 % Moisture   : 11.9
Calib. Ref.: WA20141A                Instrument ID : GCT016
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PARAMETERS	RESULTS	PQL	MDL
	(mg/kg)	(mg/kg)	(mg/kg)
ALPHA-BHC	(ND) ND	.011	.0023 .0019
GAMMA-BHC (LINDANE)	(ND) ND	.11	.0018 .0023
BETA-BHC	(ND) ND	.19	.0015 .00098
HEPTACHLOR	(ND) ND	.11	.0021 .0022
DELTA-BHC	(ND) .0033J	.062	.0013 .0012
ALDRIN	(ND) ND	.085	.0014 .0011
HEPTACHLOR EPOXIDE	(ND) ND	.12	.0017 .0017
GAMMA-CHLORDANE	(ND) ND	.085	.0023 .0042
ALPHA-CHLORDANE	(ND) ND	.085	.0034 .0022
ENDOSULFAN I	(ND) ND	.12	.0027 .0024
4,4'-DDE	(.11J) .11J	.24	.0025 .0026
DIELDRIN	(ND) .0042J	.2	.0016 .0012
ENDRIN	(ND) ND	.2	.0013 .0012
4,4'-DDD	.039 (.023)	.017	.0019 .002
ENDOSULFAN II	(ND) ND	.14	.0025 .0024
4,4'-DDT	(.24) .24	.017	.0013 .0013
ENDRIN ALDEHYDE	(ND) ND	.091	.0011 .00074
ENDOSULFAN SULFATE	(ND) ND	.2	.0022 .0019
METHOXYCHLOR	(ND) ND	.32	.0013 .0011
TOXAPHENE	(ND) ND	4	.0068 .012
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	149* (142*)	35-135	
DECACHLOROBIPHENYL	(158*) 438*	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2578                Date Analyzed: 01/25/00 00:20
Lab Samp ID: A054-03                   Dilution Factor: 2
Lab File ID: WA20154A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture     : 12.2
Calib. Ref.: WA20141A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	.023 .028)	.0043	.00092 .00077
GAMMA-BHC (LINDANE)	(ND) .0043J	.046	.00072 .00093
BETA-BHC	(ND) ND	.075	.00058 .00039
HEPTACHLOR	.016J (ND)	.046	.00083 .00089
DELTA-BHC	(.021J) .016J	.025	.00051 .00048
ALDRIN	(ND) .0011J	.034	.00054 .00044
HEPTACHLOR EPOXIDE	(ND) ND	.048	.00067 .00068
GAMMA-CHLORDANE	.0044J (ND)	.034	.00094 .0017
ALPHA-CHLORDANE	(ND) .0015J	.034	.0014 .00088
ENDOSULFAN I	(ND) ND	.048	.0011 .00097
4,4'-DDE	(.02J) .019J	.096	.001 .0011
DIELDRIN	(ND) .0031J	.08	.00065 .0005
ENDRIN	(ND) ND	.082	.00054 .00049
4,4'-DDD	(.03) .023	.0068	.00074 .00079
ENDOSULFAN II	(ND) ND	.055	.001 .00097
4,4'-DDT	(.071) .063	.0068	.00051 .00051
ENDRIN ALDEHYDE	(ND) .0015J	.036	.00045 .0003
ENDOSULFAN SULFATE	(ND) ND	.082	.0009 .00078
METHOXYCHLOR	(ND) .0029J	.13	.00051 .00045
TOXAPHENE	(ND) ND	1.6	.0027 .0047
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	78 (80)	35-135	
DECACHLOROBIPHENYL	(112) 113	25-143	

PQL: Practical Quantitation Limit

left of | is related to first column ; right of | related to second column

( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2579                Date Analyzed: 01/25/00 00:45
Lab Samp ID: A054-04                   Dilution Factor: 1
Lab File ID: WA20155A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture      : 10.6
Calib. Ref.: WA20141A                  Instrument ID    : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	.0095   (.01)	.0021	.00045   .00038
GAMMA-BHC (LINDANE)	(ND)   .0055J	.022	.00035   .00046
BETA-BHC	.0068J   (ND)	.037	.00029   .00019
HEPTACHLOR	.0083J   (ND)	.022	.00041   .00044
DELTA-BHC	.0085J   (.0088J)	.012	.00025   .00023
ALDRIN	(ND)   ND	.017	.00027   .00021
HEPTACHLOR EPOXIDE	(ND)   ND	.023	.00033   .00033
GAMMA-CHLORDANE	(ND)   ND	.017	.00046   .00083
ALPHA-CHLORDANE	(ND)   ND	.017	.00067   .00043
ENDOSULFAN I	(ND)   ND	.023	.00053   .00047
4,4'-DDE	(.0071J)   .007J	.047	.0005   .00052
DIELDRIN	(ND)   .0038J	.039	.00032   .00024
ENDRIN	(ND)   ND	.04	.00026   .00024
4,4'-DDD	(.011)   .0078	.0034	.00036   .00039
ENDOSULFAN II	(ND)   ND	.027	.0005   .00048
4,4'-DDT	(.024)   .022	.0034	.00025   .00025
ENDRIN ALDEHYDE	(ND)   ND	.018	.00022   .00015
ENDOSULFAN SULFATE	(ND)   .00091J	.04	.00044   .00038
METHOXYCHLOR	.014J   (.0025J)	.064	.00025   .00022
TOXAPHENE	(ND)   ND	.78	.0013   .0023

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(93)   90	35-135
DECACHLOROBIPHENYL	(91)   181*	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2580               Date Analyzed: 01/25/00 01:10
Lab Samp ID : A054-05                   Dilution Factor: 1
Lab File ID : WA20156A                  Matrix          : SOIL
Ext Btch ID : CPA012S                    % Moisture      : 8.9
Calib. Ref. : WA20141A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	.0014J (ND)	.0021	.00044   .00037
GAMMA-BHC (LINDANE)	(ND)   ND	.022	.00035   .00045
BETA-BHC	.0043J (ND)	.036	.00028   .00019
HEPTACHLOR	.0032J (ND)	.022	.0004   .00043
DELTA-BHC	(ND)   ND	.012	.00024   .00023
ALDRIN	(ND)   ND	.016	.00026   .00021
HEPTACHLOR EPOXIDE	(ND)   ND	.023	.00032   .00033
GAMMA-CHLORDANE	(ND)   ND	.016	.00045   .00081
ALPHA-CHLORDANE	(ND)   ND	.016	.00066   .00043
ENDOSULFAN I	(ND)   ND	.023	.00052   .00047
4,4'-DDE	(.011J)   .011J	.046	.00049   .00051
DIELDRIN	(ND)   .004J	.038	.00032   .00024
ENDRIN	(ND)   ND	.04	.00026   .00023
4,4'-DDD	(.021)   .02	.0033	.00036   .00038
ENDOSULFAN II	(ND)   ND	.026	.00049   .00047
4,4'-DDT	(.018)   .017	.0033	.00025   .00024
ENDRIN ALDEHYDE	(ND)   ND	.018	.00022   .00014
ENDOSULFAN SULFATE	(ND)   ND	.04	.00043   .00038
METHOXYCHLOR	.0087J (ND)	.063	.00024   .00022
TOXAPHENE	(ND)   ND	.77	.0013   .0023
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(85)   82	35-135	
DECACHLOROBIPHENYL	84   (97)	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                  Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2581              Date Analyzed: 01/22/00 11:13
Lab Samp ID: A054-06                 Dilution Factor: 1
Lab File ID: WA20043A                Matrix      : SOIL
Ext Btch ID: CPAD12S                 % Moisture  : 8.9
Calib. Ref.: WA20028A                Instrument ID: GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND)   ND	.0021	.00044   .00037
GAMMA-BHC (LINDANE)	(ND)   ND	.022	.00035   .00045
BETA-BHC	(ND)   ND	.036	.00028   .00019
HEPTACHLOR	(ND)   ND	.022	.0004   .00043
DELTA-BHC	(ND)   ND	.012	.00024   .00023
ALDRIN	(ND)   ND	.016	.00026   .00021
HEPTACHLOR EPOXIDE	(ND)   ND	.023	.00032   .00033
GAMMA-CHLORDANE	(ND)   ND	.016	.00045   .00081
ALPHA-CHLORDANE	(ND)   ND	.016	.00066   .00043
ENDOSULFAN I	(ND)   ND	.023	.00052   .00047
4,4'-DDE	(ND)   ND	.046	.00049   .00051
DIELDRIN	(ND)   ND	.038	.00032   .00024
ENDRIN	(ND)   ND	.04	.00026   .00023
4,4'-DDD	(ND)   ND	.0033	.00036   .00038
ENDOSULFAN II	(ND)   ND	.026	.00049   .00047
4,4'-DDT	.0073   (.0022J)	.0033	.00025   .00024
ENDRIN ALDEHYDE	(ND)   ND	.018	.00022   .00014
ENDOSULFAN SULFATE	(ND)   ND	.04	.00043   .00038
METHOXYCHLOR	(ND)   ND	.063	.00024   .00022
TOXAPHENE	(ND)   ND	.77	.0013   .0023
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	42   (45)	35-135	
DECACHLOROBIPHENYL	69   (75)	25-143	

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2582               Date Analyzed: 01/25/00 01:36
Lab Samp ID: A054-07                  Dilution Factor: 1
Lab File ID: WA20157A                 Matrix          : SOIL
Ext Btch ID: CPA012S                  % Moisture     : 14.4
Calib. Ref.: WA20141A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0022	.00047 .0004
GAMMA-BHC (LINDANE)	(ND) ND	.023	.00037 .00048
BETA-BHC	(ND) .07E	.039	.0003 .0002
HEPTACHLOR	.0084J (ND)	.023	.00043 .00046
DELTA-BHC	(ND) ND	.013	.00026 .00024
ALDRIN	(ND) ND	.018	.00028 .00022
HEPTACHLOR EPOXIDE	(ND) ND	.025	.00034 .00035
GAMMA-CHLORDANE	(ND) ND	.018	.00048 .00086
ALPHA-CHLORDANE	(ND) ND	.018	.0007 .00045
ENDOSULFAN I	(ND) ND	.025	.00055 .0005
4,4'-DDE	(ND) ND	.049	.00052 .00054
DIELDRIN	(ND) ND	.041	.00034 .00026
ENDRIN	(ND) ND	.042	.00028 .00025
4,4'-DDD	(ND) ND	.0035	.00038 .0004
ENDOSULFAN II	(ND) ND	.028	.00052 .0005
4,4'-DDT	(ND) ND	.0035	.00026 .00026
ENDRIN ALDEHYDE	(ND) ND	.019	.00023 .00015
ENDOSULFAN SULFATE	(ND) ND	.042	.00046 .0004
METHOXYCHLOR	(ND) ND	.067	.00026 .00023
TOXAPHENE	(ND) ND	.82	.0014 .0024
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	84 (84)	35-135	
DECACHLOROBIPHENYL	(72) 69	25-143	

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2583                Date Analyzed: 01/25/00 02:01
Lab Samp ID: A054-08                   Dilution Factor: 1
Lab File ID: WA20158A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture     : 15.5
Calib. Ref.: WA20141A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0022	.00048 .0004
GAMMA-BHC (LINDANE)	(ND) ND	.024	.00037 .00048
BETA-BHC	(ND) .1E	.039	.0003 .0002
HEPTACHLOR	.0066J .0011J)	.024	.00043 .00046
DELTA-BHC	(ND) ND	.013	.00026 .00025
ALDRIN	(ND) ND	.018	.00028 .00023
HEPTACHLOR EPOXIDE	(ND) ND	.025	.00035 .00035
GAMMA-CHLORDANE	(ND) ND	.018	.00049 .00088
ALPHA-CHLORDANE	(ND) ND	.018	.00071 .00046
ENDOSULFAN I	(ND) ND	.025	.00056 .0005
4,4'-DDE	(.0035J) .0031J	.05	.00053 .00055
DIELDRIN	(ND) ND	.041	.00034 .00026
ENDRIN	(ND) ND	.043	.00028 .00025
4,4'-DDD	(ND) ND	.0036	.00039 .00041
ENDOSULFAN II	(ND) ND	.028	.00053 .0005
4,4'-DDT	(.011) .0082	.0036	.00027 .00026
ENDRIN ALDEHYDE	(ND) ND	.019	.00024 .00015
ENDOSULFAN SULFATE	(ND) ND	.043	.00047 .0004
METHOXYCHLOR	(ND) ND	.067	.00026 .00023
TOXAPHENE	(ND) ND	.83	.0014 .0025
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	88 (90)	35-135	
DECACHLOROBIPHENYL	(72) 66	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2584               Date Analyzed: 01/22/00 11:38
Lab Samp ID: A054-09                  Dilution Factor: 1
Lab File ID: WA20044A                 Matrix          : SOIL
Ext Btch ID: CPA012S                  % Moisture     : 17.6
Calib. Ref.: WA20028A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0023	.00049 .00041
GAMMA-BHC (LINDANE)	(ND) ND	.024	.00038 .00049
BETA-BHC	(ND) ND	.04	.00031 .00021
HEPTACHLOR	.0029J (ND)	.024	.00044 .00047
DELTA-BHC	(ND) ND	.013	.00027 .00025
ALDRIN	(ND) ND	.018	.00029 .00023
HEPTACHLOR EPOXIDE	(ND) ND	.025	.00036 .00036
GAMMA-CHLORDANE	(ND) ND	.018	.0005 .0009
ALPHA-CHLORDANE	(ND) ND	.018	.00073 .00047
ENDOSULFAN I	(ND) ND	.025	.00058 .00051
4,4'-DDE	(ND) ND	.051	.00054 .00056
DIELDRIN	(ND) ND	.042	.00035 .00027
ENDRIN	(ND) ND	.044	.00029 .00026
4,4'-DDD	(ND) ND	.0036	.0004 .00042
ENDOSULFAN II	(ND) ND	.029	.00054 .00052
4,4'-DDT	(ND) ND	.0036	.00027 .00027
ENDRIN ALDEHYDE	(ND) ND	.019	.00024 .00016
ENDOSULFAN SULFATE	(ND) .0014J	.044	.00048 .00042
METHOXYCHLOR	(ND) ND	.069	.00027 .00024
TOXAPHENE	(ND) ND	.85	.0015 .0025

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	77 (84)	35-135
DECACHLOROBIPHENYL	94 (96)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2585                Date Analyzed: 01/22/00 07:49
Lab Samp ID: A054-10                   Dilution Factor: 1
Lab File ID: WA20035A                  Matrix      : SOIL
Ext Btch ID: CPA012S                   % Moisture  : 10.4
Calib. Ref.: WA20028A                  Instrument ID: GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0021	.00045 .00038
GAMMA-BHC (LINDANE)	(ND) ND	.022	.00035 .00045
BETA-BHC	(ND) ND	.037	.00029 .00019
HEPTACHLOR	.0035J (ND)	.022	.00041 .00044
DELTA-BHC	(ND) ND	.012	.00025 .00023
ALDRIN	(ND) ND	.017	.00027 .00021
HEPTACHLOR EPOXIDE	(ND) ND	.023	.00033 .00033
GAMMA-CHLORDANE	(ND) ND	.017	.00046 .00083
ALPHA-CHLORDANE	(ND) ND	.017	.00067 .00043
ENDOSULFAN I	(ND) ND	.023	.00053 .00047
4,4'-DDE	(ND) ND	.047	.0005 .00052
DIELDRIN	(ND) ND	.039	.00032 .00024
ENDRIN	(ND) ND	.04	.00026 .00024
4,4'-DDD	(ND) ND	.0033	.00036 .00039
ENDOSULFAN II	(ND) ND	.027	.0005 .00047
4,4'-DDT	(ND) ND	.0033	.00025 .00025
ENDRIN ALDEHYDE	(ND) ND	.018	.00022 .00015
ENDOSULFAN SULFATE	(ND) ND	.04	.00044 .00038
METHOXYCHLOR	(ND) ND	.064	.00025 .00022
TOXAPHENE	(ND) ND	.78	.0013 .0023
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	68 (83)	35-135	
DECACHLOROBIPHENYL	76 (82)	25-143	

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2586                Date Analyzed: 01/22/00 08:15
Lab Samp ID: A054-11                   Dilution Factor: 1
Lab File ID: WA20036A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture     : 16.3
Calib. Ref.: WA20028A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0023	.00048 .00041
GAMMA-BHC (LINDANE)	(ND) ND	.024	.00038 .00049
BETA-BHC	(ND) ND	.039	.00031 .00021
HEPTACHLOR	.003J (ND)	.024	.00043 .00047
DELTA-BHC	(ND) ND	.013	.00027 .00025
ALDRIN	(ND) ND	.018	.00029 .00023
HEPTACHLOR EPOXIDE	(ND) ND	.025	.00035 .00035
GAMMA-CHLORDANE	(ND) ND	.018	.00049 .00088
ALPHA-CHLORDANE	(ND) ND	.018	.00072 .00046
ENDOSULFAN I	(ND) ND	.025	.00057 .00051
4,4'-DDE	(ND) ND	.05	.00054 .00055
DIELDRIN	(ND) ND	.042	.00034 .00026
ENDRIN	(ND) ND	.043	.00028 .00026
4,4'-DDD	(ND) ND	.0036	.00039 .00041
ENDOSULFAN II	(ND) ND	.029	.00053 .00051
4,4'-DDT	(ND) ND	.0036	.00027 .00027
ENDRIN ALDEHYDE	(ND) ND	.019	.00024 .00016
ENDOSULFAN SULFATE	(ND) ND	.043	.00047 .00041
METHOXYCHLOR	(ND) ND	.068	.00027 .00023
TOXAPHENE	(ND) ND	.84	.0014 .0025
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	71 (87)	35-135	
DECACHLOROBIPHENYL	77 (83)	25-143	

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2587             Date Analyzed: 01/22/00 10:22
Lab Samp ID : A054-12                Dilution Factor: 1
Lab File ID : WA20041A              Matrix          : SOIL
Ext Btch ID: CPA012S                % Moisture     : 11.4
Calib. Ref.: WA20028A              Instrument ID   : GCT016
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PARAMETERS	RESULTS		PQL (mg/kg)	MDL (mg/kg)
	(mg/kg)	(mg/kg)		
ALPHA-BHC	(ND)	ND	.0021	.00045 .00038
GAMMA-BHC (LINDANE)	(ND)	ND	.023	.00036 .00046
BETA-BHC	(ND)	ND	.037	.00029 .0002
HEPTACHLOR	(ND)	ND	.023	.00041 .00044
DELTA-BHC	(ND)	ND	.012	.00025 .00024
ALDRIN	(ND)	ND	.017	.00027 .00022
HEPTACHLOR EPOXIDE	(ND)	ND	.024	.00033 .00034
GAMMA-CHLORDANE	(ND)	ND	.017	.00047 .00084
ALPHA-CHLORDANE	(ND)	ND	.017	.00068 .00044
ENDOSULFAN I	(ND)	ND	.024	.00053 .00048
4,4'-DDE	(ND)	ND	.047	.00051 .00052
DIELDRIN	(ND)	ND	.04	.00032 .00025
ENDRIN	(ND)	ND	.041	.00027 .00024
4,4'-DDD	(ND)	ND	.0034	.00037 .00039
ENDOSULFAN II	(ND)	ND	.027	.0005 .00048
4,4'-DDT	.0082	(.0053)	.0034	.00026 .00025
ENDRIN ALDEHYDE	(ND)	ND	.018	.00022 .00015
ENDOSULFAN SULFATE	(ND)	ND	.041	.00044 .00039
METHOXYCHLOR	(ND)	ND	.064	.00025 .00022
TOXAPHENE	(ND)	ND	.79	.0014 .0023
SURROGATE PARAMETERS				
	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	78 (93)		35-135	
DECACHLOROBIPHENYL	74 (79)		25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2588                Date Analyzed: 01/22/00 10:47
Lab Samp ID: A054-13                   Dilution Factor: 1
Lab File ID: WA20042A                   Matrix          : SOIL
Ext Btch ID: CPA012S                    % Moisture      : 12.4
Calib. Ref.: WA20028A                   Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0022	.00046 .00039
GAMMA-BHC (LINDANE)	(ND) ND	.023	.00036 .00046
BETA-BHC	(ND) ND	.038	.00029 .0002
HEPTACHLOR	.0034J (.0012J)	.023	.00042 .00045
DELTA-BHC	(ND) ND	.013	.00025 .00024
ALDRIN	(ND) ND	.017	.00027 .00022
HEPTACHLOR EPOXIDE	(ND) ND	.024	.00034 .00034
GAMMA-CHLORDANE	(ND) ND	.017	.00047 .00084
ALPHA-CHLORDANE	(ND) ND	.017	.00069 .00044
ENDOSULFAN I	(ND) ND	.024	.00054 .00048
4,4'-DDE	(ND) ND	.048	.00051 .00053
DIELDRIN	(ND) ND	.04	.00033 .00025
ENDRIN	(ND) ND	.041	.00027 .00024
4,4'-DDD	(ND) ND	.0034	.00037 .00039
ENDOSULFAN II	(ND) ND	.027	.00051 .00049
4,4'-DDT	(ND) ND	.0034	.00026 .00025
ENDRIN ALDEHYDE	(ND) ND	.018	.00023 .00015
ENDOSULFAN SULFATE	(ND) ND	.041	.00045 .00039
METHOXYCHLOR	(ND) ND	.065	.00025 .00022
TOXAPHENE	(ND) ND	.8	.0014 .0024

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	70 (82)	35-135
DECACHLOROBIPHENYL	70 (74)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2589              Date Analyzed: 01/22/00 12:29
Lab Samp ID: A054-14              Dilution Factor: 1
Lab File ID: WA20046A             Matrix          : SOIL
Ext Btch ID: CPA012S              % Moisture     : 9.3
Calib. Ref.: WA20028A             Instrument ID   : GCT016
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PARAMETERS	RESULTS		PQL (mg/kg)	MDL (mg/kg)
	(mg/kg)			
ALPHA-BHC	(ND)	ND	.0021	.00044 .00037
GAMMA-BHC (LINDANE)	(ND)	ND	.022	.00035 .00045
BETA-BHC	(ND)	ND	.036	.00028 .00019
HEPTACHLOR	(ND)	ND	.022	.0004 .00043
DELTA-BHC	(ND)	ND	.012	.00024 .00023
ALDRIN	(ND)	ND	.017	.00026 .00021
HEPTACHLOR EPOXIDE	(ND)	ND	.023	.00032 .00033
GAMMA-CHLORDANE	(ND)	ND	.017	.00046 .00082
ALPHA-CHLORDANE	(ND)	ND	.017	.00066 .00043
ENDOSULFAN I	(ND)	ND	.023	.00052 .00047
4,4'-DDE	.0077J	(.0084J)	.046	.0005 .00051
DIELDRIN	(ND)	ND	.039	.00032 .00024
ENDRIN	(ND)	ND	.04	.00026 .00024
4,4'-DDD	(.005)	.0044	.0033	.00036 .00038
ENDOSULFAN II	(ND)	ND	.026	.00049 .00047
4,4'-DDT	.05E	(.052E)	.0033	.00025 .00025
ENDRIN ALDEHYDE	(ND)	ND	.018	.00022 .00014
ENDOSULFAN SULFATE	(ND)	ND	.04	.00043 .00038
METHOXYCHLOR	(ND)	ND	.063	.00024 .00022
TOXAPHENE	(ND)	ND	.77	.0013 .0023
SURROGATE PARAMETERS				
-----				
	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	63 (82)		35-135	
DECACHLOROBIPHENYL	72 (85)		25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2589DL             Date Analyzed: 01/25/00 02:27
Lab Samp ID: A054-14T                 Dilution Factor: 2
Lab File ID: WA20159A                 Matrix          : SOIL
Ext Btch ID: CPA012S                  % Moisture      : 9.3
Calib. Ref.: WA20141A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS		PQL		MDL
	(mg/kg)		(mg/kg)		(mg/kg)
ALPHA-BHC	(ND)	ND	.0042	.00089	.00075
GAMMA-BHC (LINDANE)	(ND)	ND	.044	.00069	.0009
BETA-BHC	(ND)	ND	.073	.00056	.00038
HEPTACHLOR	(ND)	ND	.044	.0008	.00086
DELTA-BHC	(ND)	ND	.024	.00049	.00046
ALDRIN	(ND)	ND	.033	.00053	.00042
HEPTACHLOR EPOXIDE	(ND)	ND	.046	.00065	.00065
GAMMA-CHLORDANE	(ND)	ND	.033	.00091	.0016
ALPHA-CHLORDANE	(ND)	ND	.033	.0013	.00086
ENDOSULFAN I	(ND)	ND	.046	.001	.00093
4,4'-DDE	(.0092J)	.0089J	.093	.00099	.001
DIELDRIN	(ND)	.0021J	.077	.00063	.00048
ENDRIN	(ND)	ND	.079	.00052	.00047
4,4'-DDD	(.0088)	.0068	.0066	.00072	.00076
ENDOSULFAN II	(ND)	ND	.053	.00098	.00094
4,4'-DDT	(.04)	.039	.0066	.0005	.00049
ENDRIN ALDEHYDE	(ND)	ND	.035	.00044	.00029
ENDOSULFAN SULFATE	(ND)	ND	.079	.00087	.00075
METHOXYCHLOR	(ND)	ND	.13	.00049	.00043
TOXAPHENE	(ND)	ND	1.5	.0026	.0046
SURROGATE PARAMETERS			% RECOVERY		QC LIMIT
TETRACHLORO-M-XYLENE			77 (93)		35-135
DECACHLOROBIPHENYL			72 (95)		25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2590                Date Analyzed: 01/22/00 12:55
Lab Samp ID: A054-15                 Dilution Factor: 1
Lab File ID: WA20047A                Matrix          : SOIL
Ext Btch ID: CPA012S                 % Moisture      : 10.1
Calib. Ref.: WA20028A                Instrument ID   : GCT016
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PARAMETERS	RESULTS		PQL (mg/kg)	MDL (mg/kg)	
	(mg/kg)				
ALPHA-BHC	(ND)	ND	.0021	.00045	.00038
GAMMA-BHC (LINDANE)	(ND)	ND	.022	.00035	.00045
BETA-BHC	(ND)	ND	.037	.00028	.00019
HEPTACHLOR	.0033J	(ND)	.022	.0004	.00043
DELTA-BHC	(ND)	ND	.012	.00025	.00023
ALDRIN	(ND)	ND	.017	.00027	.00021
HEPTACHLOR EPOXIDE	(ND)	ND	.023	.00033	.00033
GAMMA-CHLORDANE	(ND)	ND	.017	.00046	.00082
ALPHA-CHLORDANE	(ND)	ND	.017	.00067	.00043
ENDOSULFAN I	(ND)	ND	.023	.00053	.00047
4,4'-DDE	(.0039J)	.0039J	.047	.0005	.00051
DIELDRIN	(ND)	ND	.039	.00032	.00024
ENDRIN	(ND)	ND	.04	.00026	.00024
4,4'-DDD	(.0025J)	.0021J	.0033	.00036	.00038
ENDOSULFAN II	(ND)	ND	.027	.00049	.00047
4,4'-DDT	(.025)	.025	.0033	.00025	.00025
ENDRIN ALDEHYDE	(ND)	ND	.018	.00022	.00014
ENDOSULFAN SULFATE	(ND)	ND	.04	.00044	.00038
METHOXYCHLOR	(ND)	ND	.063	.00025	.00022
TOXAPHENE	(ND)	ND	.78	.0013	.0023
SURROGATE PARAMETERS					
	% RECOVERY		QC LIMIT		
TETRACHLORO-M-XYLENE	71 (83)		35-135		
DECACHLOROBIPHENYL	70 (90)		25-143		

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client   : IT CORPORATION           Date Collected: 01/17/00
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No. : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2591              Date Analyzed: 01/25/00 02:52
Lab Samp ID: A054-16               Dilution Factor: 1
Lab File ID: WA20160A              Matrix          : SOIL
Ext Btch ID: CPA012S               % Moisture      : 12.2
Calib. Ref.: WA20141A              Instrument ID    : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.0022	.00046 .00039
GAMMA-BHC (LINDANE)	(ND) ND	.023	.00036 .00046
BETA-BHC	(ND) ND	.038	.00029 .0002
HEPTACHLOR	(ND) ND	.023	.00041 .00044
DELTA-BHC	(ND) ND	.013	.00025 .00024
ALDRIN	(ND) ND	.017	.00027 .00022
HEPTACHLOR EPOXIDE	(ND) .0012J	.024	.00033 .00034
GAMMA-CHLORDANE	(ND) ND	.017	.00047 .00084
ALPHA-CHLORDANE	(ND) ND	.017	.00069 .00044
ENDOSULFAN I	(ND) ND	.024	.00054 .00048
4,4'-DDE	.038J (.039J)	.048	.00051 .00053
DIELDRIN	(ND) ND	.04	.00033 .00025
ENDRIN	(ND) ND	.041	.00027 .00024
4,4'-DDD	(.012) .0092	.0034	.00037 .00039
ENDOSULFAN II	(ND) ND	.027	.00051 .00048
4,4'-DDT	(.11E) .1E	.0034	.00026 .00025
ENDRIN ALDEHYDE	(ND) .0022J	.018	.00023 .00015
ENDOSULFAN SULFATE	(ND) ND	.041	.00045 .00039
METHOXYCHLOR	(ND) ND	.065	.00025 .00022
TOXAPHENE	(ND) ND	.8	.0014 .0024
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(90) 89	35-135	
DECACHLOROBIPHENYL	64 (82)	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2591DL             Date Analyzed: 01/25/00 03:18
Lab Samp ID: A054-16T                 Dilution Factor: 5
Lab File ID: WA20161A                 Matrix          : SOIL
Ext Btch ID: CPA012S                  % Moisture     : 12.2
Calib. Ref.: WA20141A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.011	.0023 .0019
GAMMA-BHC (LINDANE)	(ND) ND	.11	.0018 .0023
BETA-BHC	(ND) ND	.19	.0015 .00099
HEPTACHLOR	(ND) ND	.11	.0021 .0022
DELTA-BHC	(ND) ND	.063	.0013 .0012
ALDRIN	(ND) ND	.085	.0014 .0011
HEPTACHLOR EPOXIDE	(ND) ND	.12	.0017 .0017
GAMMA-CHLORDANE	(ND) ND	.085	.0024 .0042
ALPHA-CHLORDANE	(ND) ND	.085	.0034 .0022
ENDOSULFAN I	(ND) ND	.12	.0027 .0024
4,4'-DDE	(.037J) .034J	.24	.0026 .0026
DIELDRIN	(ND) ND	.2	.0016 .0012
ENDRIN	(ND) ND	.21	.0013 .0012
4,4'-DDD	.019 (.011J)	.017	.0019 .002
ENDOSULFAN II	(ND) ND	.14	.0025 .0024
4,4'-DDT	(.083) .078	.017	.0013 .0013
ENDRIN ALDEHYDE	(ND) ND	.091	.0011 .00074
ENDOSULFAN SULFATE	(ND) ND	.21	.0022 .0019
METHOXYCHLOR	(ND) ND	.32	.0013 .0011
TOXAPHENE	(ND) ND	4	.0068 .012
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(92) 86	35-135	
DECACHLOROBIPHENYL	(86) 411*	25-143	

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2592                Date Analyzed: 01/25/00 03:43
Lab Samp ID: A054-17                   Dilution Factor: 1
Lab File ID: WA20162A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture     : 8.9
Calib. Ref.: WA20141A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS		PQL	MDL	
	(mg/kg)			(mg/kg)	
ALPHA-BHC	(ND)	ND	.0021	.00044	.00037
GAMMA-BHC (LINDANE)	(ND)	ND	.022	.00035	.00045
BETA-BHC	(ND)	ND	.036	.00028	.00019
HEPTACHLOR	(ND)	.0014J	.022	.0004	.00043
DELTA-BHC	(ND)	ND	.012	.00024	.00023
ALDRIN	(ND)	ND	.016	.00026	.00021
HEPTACHLOR EPOXIDE	(ND)	ND	.023	.00032	.00033
GAMMA-CHLORDANE	(ND)	ND	.016	.00045	.00081
ALPHA-CHLORDANE	(ND)	ND	.016	.00066	.00043
ENDOSULFAN I	(ND)	ND	.023	.00052	.00047
4,4'-DDE	(.032J)	.032J	.046	.00049	.00051
DIELDRIN	(ND)	ND	.038	.00032	.00024
ENDRIN	(ND)	ND	.04	.00026	.00023
4,4'-DDD	(.01)	.0082	.0033	.00036	.00038
ENDOSULFAN II	(ND)	ND	.026	.00049	.00047
4,4'-DDT	(.076E)	.073E	.0033	.00025	.00024
ENDRIN ALDEHYDE	(ND)	ND	.018	.00022	.00014
ENDOSULFAN SULFATE	(ND)	ND	.04	.00043	.00038
METHOXYCHLOR	(ND)	ND	.063	.00024	.00022
TOXAPHENE	(ND)	ND	.77	.0013	.0023
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT		
TETRACHLORO-M-XYLENE	(93)	89	35-135		
DECACHLOROBIPHENYL	69	(129)	25-143		

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/B081  
PESTICIDES/PCBS

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Client   : IT CORPORATION           Date Collected: 01/17/00
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No. : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2592DL            Date Analyzed: 01/25/00 04:08
Lab Samp ID: A054-17T              Dilution Factor: 5
Lab File ID: WA20163A              Matrix       : SOIL
Ext Btch ID: CPA012S               % Moisture   : 8.9
Calib. Ref.: WA20141A              Instrument ID : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) ND	.01	.0022 .0019
GAMMA-BHC (LINDANE)	(ND) ND	.11	.0017 .0022
BETA-BHC	(ND) ND	.18	.0014 .00095
HEPTACHLOR	(ND) ND	.11	.002 .0021
DELTA-BHC	(ND) ND	.06	.0012 .0011
ALDRIN	(ND) ND	.082	.0013 .0011
HEPTACHLOR EPOXIDE	(ND) ND	.12	.0016 .0016
GAMMA-CHLORDANE	(ND) ND	.082	.0023 .0041
ALPHA-CHLORDANE	(ND) ND	.082	.0033 .0021
ENDOSULFAN I	(ND) ND	.12	.0026 .0023
4,4'-DDE	(.031J) .028J	.23	.0025 .0025
DIELDRIN	(ND) ND	.19	.0016 .0012
ENDRIN	(ND) ND	.2	.0013 .0012
4,4'-DDD	.017 (.011J)	.016	.0018 .0019
ENDOSULFAN II	(ND) ND	.13	.0024 .0023
4,4'-DDT	(.062) .056	.016	.0012 .0012
ENDRIN ALDEHYDE	(ND) ND	.088	.0011 .00071
ENDOSULFAN SULFATE	(ND) ND	.2	.0022 .0019
METHOXYCHLOR	(ND) ND	.31	.0012 .0011
TOXAPHENE	(ND) ND	3.8	.0066 .011
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(94) 89	35-135	
DECACHLOROBIPHENYL	(72) 137	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW35208/B081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                  Date Extracted: 01/19/00 16:00
Sample ID   : 18609-2593              Date Analyzed: 01/22/00 03:35
Lab Samp ID: A054-18                  Dilution Factor: .96
Lab File ID: WA20025A                 Matrix          : WATER
Ext Btch ID: CPA016W                  % Moisture      : NA
Calib. Ref.: WA20013A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS (ug/L)	PQL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) ND	.34	.014 .019
GAMMA-BHC (LINDANE)	(ND) ND	.24	.012 .02
BETA-BHC	(ND) ND	.22	.017 .024
HEPTACHLOR	(ND) ND	.38	.014 .031
DELTA-BHC	(ND) ND	.23	.012 .012
ALDRIN	(ND) ND	.029	.012 .011
HEPTACHLOR EPOXIDE	(ND) ND	.31	.019 .045
GAMMA-CHLORDANE	(ND) ND	.36	.021 .019
ALPHA-CHLORDANE	(ND) ND	.77	.024 .026
ENDOSULFAN I	(ND) ND	.29	.03 .017
4,4'-DDE	(ND) ND	.48	.021 .02
DIELDRIN	(ND) ND	.42	.011 .012
ENDRIN	(ND) ND	.37	.015 .11
4,4'-DDD	(ND) ND	.48	.032 .019
ENDOSULFAN II	(ND) ND	.38	.02 .024
4,4'-DDT	(ND) ND	.096	.017 .022
ENDRIN ALDEHYDE	(ND) ND	.48	.023 .023
ENDOSULFAN SULFATE	(ND) ND	.34	.018 .019
METHOXYCHLOR	(ND) ND	.83	.012 .012
TOXAPHENE	(ND) ND	1.9	.12 .11
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	85 (85)	45-125	
DECACHLOROBIPHENYL	89 (92)	34-133	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3520B/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: NA
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/19/00
Batch No.  : 00A054                   Date Extracted: 01/19/00 16:00
Sample ID  : MBLK1W                   Date Analyzed: 01/22/00 01:02
Lab Samp ID: CPA016WB                 Dilution Factor: 1
Lab File ID: WA20019A                 Matrix          : WATER
Ext Btch ID: CPA016W                  % Moisture      : NA
Calib. Ref.: WA20013A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS (ug/L)	PQL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND) ND	.35	.015 .02
GAMMA-BHC (LINDANE)	(ND) ND	.25	.013 .021
BETA-BHC	(ND) ND	.23	.018 .025
HEPTACHLOR	(ND) ND	.4	.015 .032
DELTA-BHC	(ND) ND	.24	.013 .012
ALDRIN	(ND) ND	.03	.012 .011
HEPTACHLOR EPOXIDE	(ND) ND	.32	.02 .047
GAMMA-CHLORDANE	(ND) ND	.37	.022 .02
ALPHA-CHLORDANE	(ND) ND	.8	.025 .027
ENDOSULFAN I	(ND) ND	.3	.031 .018
4,4'-DDE	(ND) ND	.5	.022 .021
DIELDRIN	(ND) ND	.44	.011 .012
ENDRIN	(ND) ND	.39	.016 .12
4,4'-DDD	(ND) ND	.5	.033 .02
ENDOSULFAN II	(ND) ND	.4	.021 .025
4,4'-DDT	(ND) ND	.1	.018 .023
ENDRIN ALDEHYDE	(ND) ND	.5	.024 .024
ENDOSULFAN SULFATE	(ND) ND	.35	.019 .02
METHOXYCHLOR	(ND) ND	.86	.012 .013
TOXAPHENE	(ND) ND	2	.12 .12

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	79 (79)	45-125
DECACHLOROBIPHENYL	88 (91)	34-133

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

SW3550A/8081  
PESTICIDES/PCBS

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Client      : IT CORPORATION           Date Collected: NA
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/18/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : MBLK1S                 Date Analyzed: 01/22/00 06:33
Lab Samp ID : CPA012SB               Dilution Factor: 1
Lab File ID : WA20032A              Matrix          : SOIL
Ext Btch ID : CPA012S                % Moisture      : NA
Calib. Ref. : WA20028A              Instrument ID    : GCT016
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PARAMETERS	RESULTS		PQL	MDL
	(mg/kg)		(mg/kg)	(mg/kg)
ALPHA-BHC	(ND)	ND	.0019	.0004 .00034
GAMMA-BHC (LINDANE)	(ND)	ND	.02	.00032 .00041
BETA-BHC	(ND)	ND	.033	.00026 .00017
HEPTACHLOR	(ND)	ND	.02	.00036 .00039
DELTA-BHC	(ND)	ND	.011	.00022 .00021
ALDRIN	(ND)	ND	.015	.00024 .00019
HEPTACHLOR EPOXIDE	(ND)	ND	.021	.00029 .0003
GAMMA-CHLORDANE	(ND)	ND	.015	.00041 .00074
ALPHA-CHLORDANE	(ND)	ND	.015	.0006 .00039
ENDOSULFAN I	(ND)	ND	.021	.00047 .00042
4,4'-DDE	(ND)	ND	.042	.00045 .00046
DIELDRIN	(ND)	ND	.035	.00029 .00022
ENDRIN	(ND)	ND	.036	.00024 .00021
4,4'-DDD	(ND)	ND	.003	.00033 .00035
ENDOSULFAN II	(ND)	ND	.024	.00045 .00042
4,4'-DDT	(ND)	ND	.003	.00023 .00022
ENDRIN ALDEHYDE	(ND)	ND	.016	.0002 .00013
ENDOSULFAN SULFATE	(ND)	ND	.036	.00039 .00034
METHOXYCHLOR	(ND)	ND	.057	.00022 .0002
TOXAPHENE	(ND)	ND	.7	.0012 .0021
SURROGATE PARAMETERS	% RECOVERY		QC LIMIT	
TETRACHLORO-M-XYLENE	81 (102)		35-135	
DECACHLOROBIPHENYL	76 (82)		25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

EMAX QUALITY CONTROL DATA  
LCS ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 00A054  
METHOD: SW3550A/8081

MATRIX: SOIL % MOISTURE: NA  
DILUTION FACTOR: 1  
SAMPLE ID: MBLK1S  
LAB SAMP ID: CPA012SB CPA012SL  
LAB FILE ID: WA20032A WA20033A  
DATE EXTRACTED: 01/18/0018:00 01/18/0018:00 DATE COLLECTED: NA  
DATE ANALYZED: 01/22/0006:33 01/22/0006:58 DATE RECEIVED: 01/18/00  
PREP. BATCH: CPA012S CPA012S  
CALIB. REF: WA20028A WA20028A

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT ( % )
gamma-BHC (Lindane)	(ND) (ND)	.00667	.00577J (.00587J)	87 (88)	33-130
Heptachlor	(ND) (ND)	.00667	.00569J (.00576J)	85 (86)	35-138
Aldrin	(ND) (ND)	.00667	.00616J (.00636J)	92 (95)	37-126
Dieldrin	(ND) (ND)	.0133	.0123J (.0129J)	92 (97)	32-142
Endrin	(ND) (ND)	.0133	.0127J (.014J)	95 (105)	33-144
4,4'-DDT	(ND) (ND)	.0133	(.0176) .0137	(132) 103	25-153

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT ( % )
Tetrachloro-m-xylene	.0133	.0103 (.0108)	78 (81)	35-133
Decachlorobiphenyl	.0133	.0102 (.011)	77 (83)	25-143

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
ATCH NO.: 00A054  
METHOD: SW3520B/8081

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1  
SAMPLE ID: MBLK1W  
LAB SAMP ID: CPA016WB CPA016WL CPA016WC  
LAB FILE ID: WA20019A WA20020A WA20021A  
DATE EXTRACTED: 01/19/0016:00 01/19/0016:00 01/19/0016:00 DATE COLLECTED: NA  
DATE ANALYZED: 01/22/0001:02 01/22/0001:28 01/22/0001:53 DATE RECEIVED: 01/19/00  
REP. BATCH: CPA016W CPA016W CPA016W  
ALIB. REF: WA20013A WA20013A WA20013A

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
gamma-BHC (Lindane)	(ND)   ND	.2	.17J   (.173J)	85   (86)	.2	.193J   (.203J)	96   (101)	13   (16)	43-125	30
heptachlor	(ND)   ND	.2	(.185J)   .174J	(92)   87	.2	(.207J)   .2J	(104)   100	(11)   14	45-128	30
dieldrin	(ND)   ND	.2	(.176)   .175	(88)   88	.2	.201   (.203)	100   (101)	13   (15)	47-125	30
ieldrin	(ND)   ND	.4	.391J   (.397J)	98   (99)	.4	.426J   (.44J)	106   (110)	9   (10)	42-132	30
indrin	(ND)   ND	.4	.392   (.411)	98   (103)	.4	.421   (.445)	105   (111)	7   (8)	43-134	30
,4'-DDT	(ND)   ND	.4	.428   (.441)	107   (110)	.4	(.476)   .471	(119)   118	(11)   7	34-143	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
tetrachloro-m-xylene	.2	.146   (.179)	73   (89)	.2	.162   (.166)	81   (83)	45-125
ecachlorobiphenyl	.2	.181   (.188)	91   (94)	.2	.173   (.178)	86   (89)	34-133

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: ODA054  
METHOD: SW3550A/8081

MATRIX: SOIL % MOISTURE: 16.3  
DILUTION FACTOR: 1 1  
SAMPLE ID: 18609-2586  
LAB SAMP ID: A054-11 A054-11M A054-11S  
LAB FILE ID: WA20036A WA20037A WA20038A  
DATE EXTRACTED: 01/18/0018:00 01/18/0018:00 01/18/0018:00 DATE COLLECTED: 01/17/00  
DATE ANALYZED: 01/22/0008:15 01/22/0008:40 01/22/0009:06 DATE RECEIVED: 01/17/00  
REP. BATCH: CPA012S CPA012S CPA012S  
CALIB. REF: WA20028A WA20028A WA20028A

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
gamma-BHC (Lindane)	(ND) ND	.00797	.0058J .006J	73 (75)	.00797	.006J .0063J	75 (79)	3 (5)	33-130	50
heptachlor	.003J (ND)	.00797	.0081J .0067J	(64) 84	.00797	.008J .0069J	(63) 87	(1) 3	35-138	50
dieldrin	(ND) ND	.00797	.0055J .0061J	69 (77)	.00797	.0069J .0064J	(87) 80	(23) 5	37-126	50
ieldrin	(ND) ND	.0159	.014J .014J	(88) 88	.0159	.013J .013J	(82) 82	(7) 7	32-142	50
indrin	(ND) ND	.0159	.015J .015J	(94) 94	.0159	.014J .014J	(88) 88	(7) 7	33-144	50
1,4'-DDT	(ND) ND	.0159	.018 .017	(113) 107	.0159	.019 .016	(119) 100	(5) 6	25-153	50

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	QC LIMIT (%)
tetrachloro-m-xylene	.0159	.0092 .010	58 (63)	.0159	.0092 .012	58 (74)	35-133
decachlorobiphenyl	.0159	.012 .013	73 (80)	.0159	.011 .012	71 (77)	25-143

5144

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2576             Date Analyzed: 01/24/00 04:31
Lab Samp ID : A054-01                Dilution Factor: 1
Lab File ID : WA20130A               Matrix          : SOIL
Ext Btch ID : CPA012S                % Moisture      : 12.0
Calib. Ref.: WA20122A               Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.8	.0092 .0081
PCB-1221	(ND) ND	.8	.038 .042
PCB-1232	(ND) ND	.8	.016 .015
PCB-1242	(ND) ND	.8	.031 .036
PCB-1248	(ND) ND	.8	.04 .044
PCB-1254	(ND) ND	.8	.0065 .0068
PCB-1260	(ND) ND	.8	.0071 .01

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	84 (99)	35-135
DECACHLOROBIPHENYL	(69) 65	25-143

PQL: Practical Quantitation Limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column  
 \* Out side of QC Limit

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2577               Date Analyzed: 01/24/00 04:57
Lab Samp ID: A054-02                Dilution Factor: 1
Lab File ID: WA20131A               Matrix          : SOIL
Ext Btch ID: CPA012S                % Moisture     : 11.9
Calib. Ref.: WA20122A               Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.79	.0092 .0081
PCB-1221	(ND) ND	.79	.038 .042
PCB-1232	(ND) ND	.79	.016 .015
PCB-1242	(ND) ND	.79	.031 .036
PCB-1248	(ND) ND	.79	.04 .044
PCB-1254	(ND) ND	.79	.0065 .0068
PCB-1260	(ND) ND	.79	.0071 .01
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	82 (87)	35-135	
DECACHLOROBIPHENYL	(77) 177*	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2578                Date Analyzed: 01/24/00 05:22
Lab Samp ID: A054-03                   Dilution Factor: 1
Lab File ID: WA20132A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture      : 12.2
Calib. Ref.: WA20122A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.8	.0092 .0082
PCB-1221	(ND) ND	.8	.038 .042
PCB-1232	(ND) ND	.8	.016 .015
PCB-1242	(ND) ND	.8	.031 .036
PCB-1248	(ND) ND	.8	.04 .044
PCB-1254	(ND) ND	.8	.0065 .0069
PCB-1260	(ND) ND	.8	.0071 .01

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	72 (80)	35-135
DECACHLOROBIPHENYL	58 (62)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2579             Date Analyzed: 01/24/00 05:48
Lab Samp ID : A054-04                Dilution Factor: 1
Lab File ID : WA20133A              Matrix          : SOIL
Ext Btch ID : CPA012S               % Moisture      : 10.6
Calib. Ref.: WA20122A              Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.78	.009 .008
PCB-1221	(ND) ND	.78	.037 .041
PCB-1232	(ND) ND	.78	.015 .015
PCB-1242	(ND) ND	.78	.03 .036
PCB-1248	(ND) ND	.78	.039 .043
PCB-1254	(ND) ND	.78	.0064 .0067
PCB-1260	(ND) ND	.78	.007 .010
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	84 (90)	35-135	
DECACHLOROBIPHENYL	(68) 64	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2580             Date Analyzed: 01/24/00 06:13
Lab Samp ID : A054-05                Dilution Factor: 1
Lab File ID : WA20134A               Matrix          : SOIL
Ext Btch ID : CPA012S                % Moisture      : 8.9
Calib. Ref.: WA20122A               Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.77	.0089 .0079
PCB-1221	(ND) ND	.77	.036 .041
PCB-1232	(ND) ND	.77	.015 .014
PCB-1242	(ND) ND	.77	.03 .035
PCB-1248	(ND) ND	.77	.038 .043
PCB-1254	(ND) ND	.77	.0063 .0066
PCB-1260	(ND) ND	.77	.0068 .0098

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	78 (109)	35-135
DECACHLOROBIPHENYL	(72) 66	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : ODA054                  Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2581              Date Analyzed: 01/23/00 09:50
Lab Samp ID : A054-06                  Dilution Factor: 1
Lab File ID : WA20086A                 Matrix          : SOIL
Ext Btch ID : CPA012S                  % Moisture      : 8.9
Calib. Ref.: WA20072A                 Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.77	.0089 .0079
PCB-1221	(ND) ND	.77	.036 .041
PCB-1232	(ND) ND	.77	.015 .014
PCB-1242	(ND) ND	.77	.03 .035
PCB-1248	(ND) ND	.77	.038 .043
PCB-1254	(ND) ND	.77	.0063 .0066
PCB-1260	(ND) ND	.77	.0068 .0098

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	44 (49)	35-135
DECACHLOROBIPHENYL	74 (79)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW35508/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                  Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2582              Date Analyzed: 01/24/00 06:39
Lab Samp ID : A054-07                 Dilution Factor: 1
Lab File ID : WA20135A                Matrix          : SOIL
Ext Btch ID : CPA012S                 % Moisture      : 14.4
Calib. Ref.: WA20122A                Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.82	.0094 .0084
PCB-1221	(ND) ND	.82	.039 .043
PCB-1232	(ND) ND	.82	.016 .015
PCB-1242	(ND) ND	.82	.032 .037
PCB-1248	(ND) ND	.82	.041 .045
PCB-1254	(ND) ND	.82	.0067 .007
PCB-1260	(ND) ND	.82	.0073 .01

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	83 (98)	35-135
DECACHLOROBIPHENYL	(72) 67	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

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Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : ODA054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2583                Date Analyzed: 01/24/00 07:04
Lab Samp ID: A054-08                   Dilution Factor: 1
Lab File ID: WA20136A                  Matrix          : SOIL
Ext Btch ID: CPA012S                    % Moisture     : 15.5
Calib. Ref.: WA20122A                  Instrument ID   : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.83	.0096 .0085
PCB-1221	(ND) ND	.83	.039 .044
PCB-1232	(ND) ND	.83	.016 .016
PCB-1242	(ND) ND	.83	.032 .038
PCB-1248	(ND) ND	.83	.041 .046
PCB-1254	(ND) ND	.83	.0067 .0071
PCB-1260	(ND) ND	.83	.0074 .011

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	88 (95)	35-135
DECACHLOROBIPHENYL	(72) 67	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082

PCBs

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Client   : IT CORPORATION           Date Collected: 01/17/00
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No. : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2584             Date Analyzed: 01/23/00 10:15
Lab Samp ID: A054-09             Dilution Factor: 1
Lab File ID: WA20087A           Matrix       : SOIL
Ext Btch ID: CPA012S           % Moisture   : 17.6
Calib. Ref.: WA20072A         Instrument ID : GCT016
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PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.85	.0098 .0087
PCB-1221	(ND) ND	.85	.04 .045
PCB-1232	(ND) ND	.85	.017 .016
PCB-1242	(ND) ND	.85	.033 .039
PCB-1248	(ND) ND	.85	.042 .047
PCB-1254	(ND) ND	.85	.0069 .0073
PCB-1260	(ND) ND	.85	.0076 .011
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	81 (90)	35-135	
DECACHLOROBIPHENYL	102 (99)	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

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=====
Client      : IT CORPORATION          Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2585            Date Analyzed: 01/23/00 07:17
Lab Samp ID : A054-10               Dilution Factor: 1
Lab File ID : WA20080A              Matrix          : SOIL
Ext Btch ID : CPA012S                % Moisture      : 10.4
Calib. Ref. : WA20072A              Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS	PQL	MDL
	(mg/kg)	(mg/kg)	(mg/kg)
PCB-1016	(ND) ND	.78	.009 .008
PCB-1221	(ND) ND	.78	.037 .041
PCB-1232	(ND) ND	.78	.015 .015
PCB-1242	(ND) ND	.78	.03 .035
PCB-1248	(ND) ND	.78	.039 .043
PCB-1254	(ND) ND	.78	.0064 .0067
PCB-1260	(ND) ND	.78	.007 .010
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	72 (86)	35-135	
DECACHLOROBIPHENYL	80 (86)	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2586             Date Analyzed: 01/23/00 07:43
Lab Samp ID: A054-11                Dilution Factor: 1
Lab File ID: WA20081A               Matrix          : SOIL
Ext Btch ID: CPA012S                % Moisture      : 16.3
Calib. Ref.: WA20072A               Instrument ID   : GCT016
=====
  
```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.84	.0096 .0086
PCB-1221	(ND) ND	.84	.04 .044
PCB-1232	(ND) ND	.84	.016 .016
PCB-1242	(ND) ND	.84	.032 .038
PCB-1248	(ND) ND	.84	.042 .046
PCB-1254	(ND) ND	.84	.0068 .0072
PCB-1260	(ND) ND	.84	.0075 .011

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	74 (97)	35-135
DECACHLOROBIPHENYL	82 (88)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW35508/8082  
PCBs

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2587               Date Analyzed: 01/23/00 08:59
Lab Samp ID: A054-12                Dilution Factor: 1
Lab File ID: WA20084A               Matrix          : SOIL
Ext Btch ID: CPA012S                % Moisture      : 11.4
Calib. Ref.: WA20072A               Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS	PQL	MDL
	(mg/kg)	(mg/kg)	(mg/kg)
PCB-1016	(ND) ND	.79	.0091 .0081
PCB-1221	(ND) ND	.79	.037 .042
PCB-1232	(ND) ND	.79	.016 .015
PCB-1242	(ND) ND	.79	.031 .036
PCB-1248	(ND) ND	.79	.04 .044
PCB-1254	(ND) ND	.79	.0064 .0068
PCB-1260	(ND) ND	.79	.007 .01
SURROGATE PARAMETERS	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	82 (105)	35-135	
DECACHLOROBIPHENYL	78 (84)	25-143	

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID   : 18609-258B             Date Analyzed: 01/23/00 09:24
Lab Samp ID : A054-13                Dilution Factor: 1
Lab File ID : WA20085A               Matrix          : SDIL
Ext Btch ID : CPA012S                % Moisture     : 12.4
Calib. Ref.: WA20072A               Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.8	.0092 .0082
PCB-1221	(ND) ND	.8	.038 .042
PCB-1232	(ND) ND	.8	.016 .015
PCB-1242	(ND) ND	.8	.031 .036
PCB-1248	(ND) ND	.8	.04 .044
PCB-1254	(ND) ND	.8	.0065 .0069
PCB-1260	(ND) ND	.8	.0071 .01

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	74 (93)	35-135
DECACHLOROBIPHENYL	74 (78)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

\* Out side of QC Limit

SW35508/8082  
PCBs

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.  : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID  : 18609-2589                Date Analyzed: 01/23/00 11:06
Lab Samp ID: A054-14                   Dilution Factor: 1
Lab File ID: WA20089A                  Matrix          : SOIL
Ext Btch ID: CPA012S                   % Moisture      : 9.3
Calib. Ref.: WA20072A                  Instrument ID   : GCT016
=====
  
```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.77	.0089 .0079
PCB-1221	(ND) ND	.77	.036 .041
PCB-1232	(ND) ND	.77	.015 .015
PCB-1242	(ND) ND	.77	.03 .035
PCB-1248	(ND) ND	.77	.039 .043
PCB-1254	(ND) ND	.77	.0063 .0066
PCB-1260	(ND) ND	.77	.0069 .0098

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	69 (76)	35-135
DECACHLOROBIPHENYL	78 (91)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column  
( ) included the reported column

\* Out side of QC Limit

SW3550B/8082

PCBs

```
=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2590                Date Analyzed: 01/23/00 11:32
Lab Samp ID: A054-15                    Dilution Factor: 1
Lab File ID: WA20090A                   Matrix      : SOIL
Ext Btch ID: CPA012S                     % Moisture  : 10.1
Calib. Ref.: WA20072A                    Instrument ID : GCT016
=====
```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.78	.009 .008
PCB-1221	(ND) ND	.78	.037 .041
PCB-1232	(ND) ND	.78	.015 .015
PCB-1242	(ND) ND	.78	.03 .035
PCB-1248	(ND) ND	.78	.039 .043
PCB-1254	(ND) ND	.78	.0063 .0067
PCB-1260	(ND) ND	.78	.0069 .0099

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	76 (88)	35-135
DECACHLOROBIPHENYL	77 (95)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW35508/8082

PCBs

```
=====
Client   : IT CORPORATION           Date Collected: 01/17/00
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No. : 00A054                 Date Extracted: 01/18/00 18:00
Sample ID: 18609-2591             Date Analyzed: 01/24/00 07:30
Lab Samp ID: A054-16              Dilution Factor: 1
Lab File ID: WA20137A             Matrix      : SOIL
Ext Btch ID: CPA012S              % Moisture   : 12.2
Calib. Ref.: WA20122A             Instrument ID : GCT016
=====
```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.8	.0092 .0082
PCB-1221	(ND) ND	.8	.038 .042
PCB-1232	(ND) ND	.8	.016 .015
PCB-1242	(ND) ND	.8	.031 .036
PCB-1248	(ND) ND	.8	.04 .044
PCB-1254	(ND) ND	.8	.0065 .0069
PCB-1260	(ND) ND	.8	.0071 .01

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	83 (89)	35-135
DECACHLOROBIPHENYL	73 (84)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3550B/8082  
PCBs

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70   Date Received: 01/17/00
Batch No.   : 00A054                   Date Extracted: 01/18/00 18:00
Sample ID   : 18609-2592                Date Analyzed: 01/24/00 07:55
Lab Samp ID: A054-17                     Dilution Factor: 1
Lab File ID: WA20138A                    Matrix          : SOIL
Ext Btch ID: CPA012S                      % Moisture     : 8.9
Calib. Ref.: WA20122A                     Instrument ID   : GCT016
=====
  
```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.77	.0089 .0079
PCB-1221	(ND) ND	.77	.036 .041
PCB-1232	(ND) ND	.77	.015 .014
PCB-1242	(ND) ND	.77	.03 .035
PCB-1248	(ND) ND	.77	.038 .043
PCB-1254	(ND) ND	.77	.0063 .0066
PCB-1260	(ND) ND	.77	.0068 .0098

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	83 (97)	35-135
DECACHLOROBIPHENYL	84 (89)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

SW3520C/8082  
PCBs

```

=====
Client      : IT CORPORATION           Date Collected: 01/17/00
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/17/00
Batch No.   : 00A054                  Date Extracted: 01/19/00 16:00
Sample ID   : 18609-2593              Date Analyzed: 01/23/00 06:01
Lab Samp ID : A054-18                 Dilution Factor: .94
Lab File ID : WA20077A                Matrix          : WATER
Ext Btch ID : CPA016W                 % Moisture      : NA
Calib. Ref. : WA20072A                Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS (ug/L)	PQL (ug/L)	MDL (ug/L)
PCB-1016	(ND) ND	1.9	.78 .57
PCB-1221	(ND) ND	1.9	1.1 .78
PCB-1232	(ND) ND	.94	.36 .54
PCB-1242	(ND) ND	.94	.44 .23
PCB-1248	(ND) ND	.94	.41 .33
PCB-1254	(ND) ND	.94	.28 .47
PCB-1260	(ND) ND	.94	.36 .32

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(89) 87	45-125
DECACHLOROBIPHENYL	95 (99)	34-133

PQL: Practical Quantitation Limit  
Left of | is related to first column ; Right of | related to second column  
(.) included the reported column  
\* Out side of QC Limit

EMAX QUALITY CONTROL DATA  
LCS ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 00A054  
METHOD: SW35508/8082

MATRIX: SOIL % MOISTURE: NA  
DILUTION FACTOR: 1  
SAMPLE ID: MBLK1S  
LAB SAMP ID: CPA012SB CPA013SL  
LAB FILE ID: WA20078A WA20079A  
DATE EXTRACTED: 01/18/0018:00 01/18/0018:00 DATE COLLECTED: NA  
DATE ANALYZED: 01/23/0006:27 01/23/0006:52 DATE RECEIVED: 01/18/00  
PREP. BATCH: CPA012S CPA012S  
CALIB. REF: WA20072A WA20072A

ACCESSION:

PARAMETER	BLNK RSLT (ug/kg)	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	QC LIMIT ( % )
PCB-1016	(ND) ND	167	(166J) 163J	(100) 98	50-150
PCB-1260	(ND) ND	167	174J (183J)	104 (110)	50-150

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	QC LIMIT ( % )
Tetrachloro-m-xylene	13.3	11.8 (12.2)	89 (92)	35-133
Decachlorobiphenyl	13.3	11.2 (11.9)	84 (89)	25-143

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 00A054  
METHOD: SW3550B/8082

MATRIX: SOIL % MOISTURE: 16.3  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: 18609-2586  
LAB SAMP ID: A054-11 A054-11M A054-11S  
LAB FILE ID: WA20081A WA20082A WA20083A  
DATE EXTRACTED: 01/18/0018:00 01/18/0018:00 01/18/0018:00 DATE COLLECTED: 01/17/00  
DATE ANALYZED: 01/23/0007:43 01/23/0008:08 01/23/0008:34 DATE RECEIVED: 01/17/00  
PREP. BATCH: CPA012S CPA012S CPA012S  
CALIB. REF: WA20072A WA20072A WA20072A

ACCESSION:

PARAMETER	SMPL RSLT (ug/kg)	SPIKE AMT (ug/kg)	MS RSLT (ug/kg)	MS % REC	SPIKE AMT (ug/kg)	MSD RSLT (ug/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
PCB-1016	(ND) ND	199	190J (200J)	95 (100)	199	190J (220J)	95 (110)	0 (10)	50-150	50
PCB-1260	(ND) ND	199	210J (220J)	105 (110)	199	(220J) 220J	(110) 110	(5) 0	50-150	50

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	MS RSLT (ug/kg)	MS % REC	SPIKE AMT (ug/kg)	MSD RSLT (ug/kg)	MSD % REC	QC LIMIT (%)
Tetrachloro-m-xylene	15.9	(12) 12	76 (76)	15.9	11 (13)	69 (81)	35-133
Decachlorobiphenyl	15.9	13 (14)	82 (87)	15.9	13 (14)	80 (86)	25-143

\* Out side of QC Limit.

5309

SW3520C/8082  
PCBs

```

=====
Client      : IT CORPORATION          Date Collected: NA
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 01/19/00
Batch No.   : 00A054                 Date Extracted: 01/19/00 16:00
Sample ID   : MBLK1W                 Date Analyzed: 01/23/00 04:20
Lab Samp ID : CPA016WB              Dilution Factor: 1
Lab File ID : WA20073A             Matrix          : WATER
Ext Btch ID : CPA016W              % Moisture     : NA
Calib. Ref. : WA20072A             Instrument ID   : GCT016
=====

```

PARAMETERS	RESULTS (ug/L)	PQL (ug/L)	MDL (ug/L)
PCB-1016	(ND) ND	2	.83 .6
PCB-1221	(ND) ND	2	1.1 .83
PCB-1232	(ND) ND	1	.39 .57
PCB-1242	(ND) ND	1	.47 .25
PCB-1248	(ND) ND	1	.43 .35
PCB-1254	(ND) ND	1	.3 .5
PCB-1260	(ND) ND	1	.39 .34
SURROGATE PARAMETERS			
	% RECOVERY	QC LIMIT	
TETRACHLORO-M-XYLENE	(84) 83	45-125	
DECACHLOROBIPHENYL	95 (97)	34-133	

PQL: Practical Quantitation Limit  
 Left of | is related to first column ; Right of | related to second column  
 ( ) included the reported column  
 \* Out side of QC Limit

SW3550B/8082  
PCBs

```

=====
Client      : IT CORPORATION      Date Collected: NA
Project    : MCAS EL TORO/18609/D.O. 70  Date Received: 01/18/00
Batch No.  : 00A054              Date Extracted: 01/18/00 18:00
Sample ID  : MBLK1S              Date Analyzed: 01/23/00 06:27
Lab Samp ID: CPA012SB           Dilution Factor: 1
Lab File ID: WA20078A          Matrix          : SOIL
Ext Btch ID: CPA012S           % Moisture      : NA
Calib. Ref.: WA20072A         Instrument ID   : GCT016
=====
  
```

PARAMETERS	RESULTS (mg/kg)	PQL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) ND	.7	.0081 .0072
PCB-1221	(ND) ND	.7	.033 .037
PCB-1232	(ND) ND	.7	.014 .013
PCB-1242	(ND) ND	.7	.027 .032
PCB-1248	(ND) ND	.7	.035 .039
PCB-1254	(ND) ND	.7	.0057 .006
PCB-1260	(ND) ND	.7	.0062 .0089

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	87 (96)	35-135
DECACHLOROBIPHENYL	82 (88)	25-143

PQL: Practical Quantitation Limit

Left of | is related to first column ; Right of | related to second column

( ) included the reported column

\* Out side of QC Limit

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 00A054  
METHOD: SW3520C/8082

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: MBLK1W  
LAB SAMP ID: CPA016WB CPA017WL CPA017WC  
LAB FILE ID: WA20073A WA20074A WA20075A  
DATE EXTRACTED: 01/19/0016:00 01/19/0016:00 01/19/0016:00 DATE COLLECTED: NA  
DATE ANALYZED: 01/23/0004:20 01/23/0004:45 01/23/0005:10 DATE RECEIVED: 01/19/00  
PREP. BATCH: CPA016W CPA016W CPA016W  
CALIB. REF: WA20072A WA20072A WA20072A

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD ( % )	QC LIMIT ( % )	MAX RPD ( % )
PCB-1016	(ND) ND	5	(4.75) 4.73	(95) 95	5	5.44 (5.58)	109 (112)	14 (16)	40-150	30
PCB-1260	(ND) ND	5	5.4 (5.62)	108 (112)	5	5.94 (6.22)	119 (124)	10 (10)	40-150	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT ( % )
tetrachloro-m-xylene	.2	.166 (174)	83 (87)	.2	(.186) .176	(93) 88	45-125
decachlorobiphenyl	.2	.197 (201)	99 (101)	.2	.195 (202)	98 (101)	34-133

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** January 17, 2000  
**LDC Report Date:** February 29, 2000  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Extractables  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 00A054

**Sample Identification**

18609-2576  
18609-2577  
18609-2578  
18609-2579  
18609-2580  
18609-2581  
18609-2582  
18609-2583  
18609-2584\*\*  
18609-2585  
18609-2586  
18609-2587  
18609-2588  
18609-2589  
18609-2590  
18609-2591  
18609-2592  
18609-2593  
18609-2585MS  
18609-2585MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 19 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

Initial calibration of compounds was performed as required by the method.

The percent relative standard deviations (%RSD) of calibration factors for compounds were less than or equal to 20.0% .

### **b. Calibration Verification**

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### **b. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **c. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **V. Target Compound Identification**

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## **VI. Compound Quantitation and CRQLs**

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## **VII. System Performance**

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## **VIII. Overall Assessment of Data**

Data flags have been summarized at the end of this report.

## **IX. Field Duplicates**

No field duplicates were identified in this SDG.

## **X. Field Blanks**

No field blanks were identified in this SDG.

**MCAS El Toro  
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG  
00A054**

No Sample Data Qualified in this SDG

**MCAS El Toro  
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification  
Summary - SDG 00A054**

No Sample Data Qualified in this SDG

LDC Report# 4539H3a

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** January 17, 2000  
**LDC Report Date:** February 29, 2000  
**Matrix:** Soil/Water  
**Parameters:** Chlorinated Pesticides  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 00A054

**Sample Identification**

18609-2576	18609-2592
18609-2576DL	18609-2592DL
18609-2577	18609-2593
18609-2577DL	18609-2586MS
18609-2578	18609-2586MSD
18609-2579	
18609-2580	
18609-2581	
18609-2582	
18609-2583	
18609-2584**	
18609-2585	
18609-2586	
18609-2587	
18609-2588	
18609-2589	
18609-2589DL	
18609-2590	
18609-2591	
18609-2591DL	

\*\*Indicates sample underwent NFESC Level D review.

## Introduction

This data review covers 24 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081 for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

## III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

## IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
1/21/00	WA20015A	Channel A	Toxaphene	26	18609-2593 CPA016WB	J	A
1/22/00	WA20030A	Channel A	Toxaphene	25	18609-2584** 18609-2585 18609-2586 18609-2587 18609-2588 18609-2589 18609-2590 18609-2581 18609-2586MS 18609-2586MSD CPA012SB	J	A

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
1/24/00	WA20142A	Channel A	gamma-BHC	17	18609-2576 18609-2576DL 18609-2577 18609-2577DL 18609-2578 18609-2579 18609-2580 18609-2582 18609-2583 18609-2589DL 18609-2591 18609-2591DL 18609-2592 18609-2592DL	J	A
1/24/00	WA20142B	Channel B	Methoxychlor	16	18609-2576 18609-2576DL 18609-2577 18609-2577DL 18609-2578 18609-2579 18609-2580 18609-2582 18609-2583 18609-2589DL 18609-2591 18609-2591DL 18609-2592 18609-2592DL	J	A

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0% .

#### V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

#### VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
18609-2577	Not specified	Decachlorobiphenyl	168 (25-143)	All TCL compounds	J (all detects)	A

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
18609-2579	Not specified	Decachlorobiphenyl	181 (25-143)	All TCL compounds	J (all detects)	P

### VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Pesticide Cleanup Checks

#### a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

#### b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

### XI. Target Compound Identification

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
18609-2576 18609-2577 18609-2589 18609-2591 18609-2592	4,4'-DDT	Sample result exceeded calibration range.	Reported result should be within calibration range.	J (all detects)	A

Raw data were not evaluated for the samples reviewed by Level C criteria.

### **XIII. Overall Assessment of Data**

Data flags are summarized at the end of this report.

### **XIV. Field Duplicates**

No field duplicates were identified in this SDG.

### **XV. Field Blanks**

No field blanks were identified in this SDG.

**MCAS EI Toro  
Chlorinated Pesticides - Data Qualification Summary - SDG 00A054**

SDG	Sample	Compound	Flag	A or P	Reason
00A054	18609-2593 18609-2584** 18609-2585 18609-2586 18609-2587 18609-2588 18609-2589 18609-2590 18609-2581 ✓	Toxaphene	J	A	Continuing calibration (%D)
00A054	18609-2576 18609-2576DL ✓ 18609-2577 18609-2577DL ✓ 18609-2578 18609-2579 18609-2580 18609-2582 18609-2583 18609-2589DL 18609-2591 18609-2591DL 18609-2592 18609-2592DL	gamma-BHC Methoxychlor	J	A	Continuing calibration (%D)
00A054	18609-2577 ✗	All TCL compounds	J (all detects)	A	Surrogate spikes (%R)
00A054	18609-2579	All TCL compounds	J (all detects)	P	Surrogate spikes (%R)
00A054	18609-2576 18609-2577 18609-2589 18609-2591 18609-2592	4,4'-DDT	J (all detects)	A	Compound quantitation and CRQLs

**MCAS EI Toro  
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG  
00A054**

No Sample Data Qualified in this SDG

LDC Report# 4539H3b

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** MCAS El Toro  
**Collection Date:** January 17, 2000  
**LDC Report Date:** February 29, 2000  
**Matrix:** Soil/Water  
**Parameters:** Polychlorinated Biphenyls  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 00A054

### Sample Identification

18609-2576  
18609-2577  
18609-2578  
18609-2579  
18609-2580  
18609-2581  
18609-2582  
18609-2583  
18609-2584\*\*  
18609-2585  
18609-2586  
18609-2587  
18609-2588  
18609-2589  
18609-2590  
18609-2591  
18609-2592  
18609-2593  
18609-2586MS  
18609-2586MSD

\*\*Indicates sample underwent NFESC Level D review.

## Introduction

This data review covers 19 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/ECD Instrument Performance Check**

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

## **III. Initial Calibration**

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

## **IV. Continuing Calibration**

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples on which a Level C review was performed.

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

**MCAS EI Toro**  
**Polychlorinated Biphenyls - Data Qualification Summary - SDG 00A054**

SDG	Sample	Compound	Flag	A or P	Reason
00A054	18609-2577	All TCL compounds	J (all detects)	P	Surrogate spikes (%R)

**MCAS EI Toro**  
**Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 00A054**

No Sample Data Qualified in this SDG

**Table 3-1  
Summary of Analytical Results — PCB A2**

Sample Identification					18609-2576	18609-2577	18609-2578	18609-2579	18609-2580
Location Code					PCB-A2-01	PCB-A2-01	PCB-A2-02	PCB-A2-02	PCB-A2-03
Date Sampled					01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
Depth (feet below ground surface)					1.5	3.0	1.5	3.0	1.5
	Unit	Background	Residential PRG	Industrial PRG					
<i>CA LUFT 8015M</i>									
C23-C30 (Motor Oil)	mg/kg	NE	NE	NE	280	60	360	160	54.9 U
<i>EPA 8081</i>									
4,4'-DDD	mg/kg	0.0361	2.4	17	.13 J B	.023	.03	.011 J	.021
4,4'-DDE	mg/kg	0.145	1.7	12	.48 J B	.11 J	.02 J	.0071 J	.011 J
4,4'-DDT	mg/kg	0.236	1.7	12	.96 J B	.24 J B	.071	.024 J	.018
Aldrin	mg/kg	NE	0.029	0.15	.68 U Y X	.085 U Y	.034 U Y	.017 U	.016 U
alpha-BHC	mg/kg	NE	0.09	0.59	.086 U	.011 U	.028	.01 J	.0021 U
alpha-Chlordane	mg/kg	0.00224	1.6	11	.68 U B	.085 U B	.034 U B	.017 U B	.016 U B
Beta-BHC	mg/kg	NE	0.32	2.1	1.5 U Y	.19 U	.075 U	.037 U	.036 U
Delta-BHC	mg/kg	NE	NE	NE	.5 U	.062 U	.021 J	.0088 J	.012 U
Dieldrin	mg/kg	0.0199	0.03	0.15	1.6 U B Y X	.2 U B Y X	.08 U B Y	.039 U B Y	.038 U B Y
Endosulfan I	mg/kg	0.000179	370	5300	.95 U B	.12 U B	.048 U B	.023 U B	.023 U B
Endosulfan II	mg/kg	0.00222	370	5300	1.1 U B	.14 U B	.055 U B	.027 U B	.026 U B
Endosulfan sulfate	mg/kg	0.0031	NE	NE	1.6 U B	.2 U B	.082 U B	.04 U B	.04 U B
Endrin	mg/kg	0.00222	18	260	1.6 U B	.2 U B	.082 U B	.04 U B	.04 U B
Endrin aldehyde	mg/kg	0.00222	NE	NE	.73 U B	.091 U B	.036 U B	.018 U B	.018 U B
gamma-BHC	mg/kg	NE	0.44	2.9	.91 UJ Y	.11 UJ	.046 UJ	.022 U	.022 UJ
gamma-Chlordane	mg/kg	0.0027	1.6	11	.68 U B	.085 U B	.034 U B	.017 U B	.016 U B
Heptachlor	mg/kg	NE	0.11	0.55	.91 U Y X	.11 UJ Y	.046 U	.022 UJ	.022 U
Heptachlor epoxide	mg/kg	NE	0.053	0.27	.95 U Y X	.12 U Y	.048 U	.023 U	.023 U
Methoxychlor	mg/kg	NE	310	4400	2.6 UJ	.32 UJ	.13 UJ	.0025 J	.063 UJ
Toxaphene	mg/kg	NE	0.44	2.2	32 U Y X	4 U Y X	1.6 U Y	.78 U Y	.77 U Y
<i>EPA 8082</i>									
Aroclor-1016	mg/kg	NE	3.9	29	.8 U	.79 U	.8 U	.78 U	.77 U
Aroclor-1221	mg/kg	NE	0.22	1	.8 U Y	.79 U Y	.8 U Y	.78 U Y	.77 U Y
Aroclor-1232	mg/kg	NE	0.22	1	.8 U Y	.79 U Y	.8 U Y	.78 U Y	.77 U Y
Aroclor-1242	mg/kg	NE	0.22	1	.8 U Y	.79 U Y	.8 U Y	.78 U Y	.77 U Y
Aroclor-1248	mg/kg	NE	0.22	1	.8 U Y	.79 U Y	.8 U Y	.78 U Y	.77 U Y
Aroclor-1254	mg/kg	NE	0.22	1	.8 U Y	.79 U Y	.8 U Y	.78 U Y	.77 U Y
Aroclor-1260	mg/kg	NE	0.22	1	.8 U Y	.79 U Y	.8 U Y	.78 U Y	.77 U Y

\*Laboratory method detection limits were below PRG levels for all analytes.

**Table 3-1**  
**Summary of Analytical Results — PCB A2**

Sample Identification					18609-2581	18609-2582	18609-2583	18609-2584 (Dup)	18609-2585
Location Code					PCB-A2-03	PCB-A2-04	PCB-A2-04	PCB-A2-04	PCB-A2-05
Date Sampled					01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
Depth (feet below ground surface)					3.0	1.5	3.0	3.5	1.5
	Unit	Background	Residential PRG	Industrial PRG					
<i>CA LUFT 8015M</i>									
C23-C30 (Motor Oil)	mg/kg	NE	NE	NE	54.9 U	150	200	40 J	55.8 U
<i>EPA 8081</i>									
4,4'-DDD	mg/kg	0.0361	2.4	17	.0033 U	.0035 U	.0036 U	.0036 U	.0033 U
4,4'-DDE	mg/kg	0.145	1.7	12	.046 U	.049 U	.0035 J	.051 U	.047 U
4,4'-DDT	mg/kg	0.236	1.7	12	.0022 J	.0035 U	.011	.0036 U	.0033 U
Aldrin	mg/kg	NE	0.029	0.15	.016 U	.018 U	.018 U	.018 U	.017 U
alpha-BHC	mg/kg	NE	0.09	0.59	.0021 U	.0022 U	.0022 U	.0023 U	.0021 U
alpha-Chlordane	mg/kg	0.00224	1.6	11	.016 U B	.018 U B	.018 U B	.018 U B	.017 U B
Beta-BHC	mg/kg	NE	0.32	2.1	.036 U	.039 U	.039 U	.04 U	.037 U
Delta-BHC	mg/kg	NE	NE	NE	.012 U	.013 U	.013 U	.013 U	.012 U
Dieldrin	mg/kg	0.0199	0.03	0.15	.038 U B Y	.041 U B Y	.041 U B Y	.042 U B Y	.039 U B Y
Endosulfan I	mg/kg	0.000179	370	5300	.023 U B	.025 U B	.025 U B	.025 U B	.023 U B
Endosulfan II	mg/kg	0.00222	370	5300	.026 U B	.028 U B	.028 U B	.029 U B	.027 U B
Endosulfan sulfate	mg/kg	0.0031	NE	NE	.04 U B	.042 U B	.043 U B	.044 U B	.04 U B
Endrin	mg/kg	0.00222	18	260	.04 U B	.042 U B	.043 U B	.044 U B	.04 U B
Endrin aldehyde	mg/kg	0.00222	NE	NE	.018 U B	.019 U B	.019 U B	.019 U B	.018 U B
gamma-BHC	mg/kg	NE	0.44	2.9	.022 U	.023 UJ	.024 UJ	.024 U	.022 U
gamma-Chlordane	mg/kg	0.0027	1.6	11	.016 U B	.018 U B	.018 U B	.018 U B	.017 U B
Heptachlor	mg/kg	NE	0.11	0.55	.022 U	.023 U	.0011 J	.024 U	.022 U
Heptachlor epoxide	mg/kg	NE	0.053	0.27	.023 U	.025 U	.025 U	.025 U	.023 U
Methoxychlor	mg/kg	NE	310	4400	.063 U	.067 UJ	.067 UJ	.069 U	.064 U
Toxaphene	mg/kg	NE	0.44	2.2	.77 UJ Y	.82 U Y	.83 UJ Y	.85 UJ Y	.78 UJ Y
<i>EPA 8082</i>									
Aroclor-1016	mg/kg	NE	3.9	29	.77 U	.82 U	.83 U	.85 U	.78 U
Aroclor-1221	mg/kg	NE	0.22	1	.77 U Y	.82 U Y	.83 U Y	.85 U Y	.78 U Y
Aroclor-1232	mg/kg	NE	0.22	1	.77 U Y	.82 U Y	.83 U Y	.85 U Y	.78 U Y
Aroclor-1242	mg/kg	NE	0.22	1	.77 U Y	.82 U Y	.83 U Y	.85 U Y	.78 U Y
Aroclor-1248	mg/kg	NE	0.22	1	.77 U Y	.82 U Y	.83 U Y	.85 U Y	.78 U Y
Aroclor-1254	mg/kg	NE	0.22	1	.77 U Y	.82 U Y	.83 U Y	.85 U Y	.78 U Y
Aroclor-1260	mg/kg	NE	0.22	1	.77 U Y	.82 U Y	.83 U Y	.85 U Y	.78 U Y

\*Laboratory method detection limits were below PRG levels for all analytes.

**Table 3-1  
Summary of Analytical Results — PCB A2**

Sample Identification					18609-2586	18609-2587	18609-2588	18609-2589	18609-2590
Location Code					PCB-A2-05	PCB-A2-06	PCB-A2-06	PCB-A2-07	PCB-A2-07
Date Sampled					01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
Depth (feet below ground surface)					3.0	1.5	3.0	1.5	3.0
	Unit	Background	Residential PRG	Industrial PRG					
<b>CA LUFT 8015M</b>									
C23-C30 (Motor Oil)	mg/kg	NE	NE	NE	59.7 U	56.4 U	57.1 U	56	55.6 U
<b>EPA 8081</b>									
4,4'-DDD	mg/kg	0.0361	2.4	17	.0036 U	.0034 U	.0034 U	.0088	.0025 J
4,4'-DDE	mg/kg	0.145	1.7	12	.05 U	.047 U	.048 U	.0092 J	.0039 J
4,4'-DDT	mg/kg	0.236	1.7	12	.0036 U	.0053	.0034 U	.04 J	.025
Aldrin	mg/kg	NE	0.029	0.15	.018 U	.017 U	.017 U	.033 U Y	.017 U
alpha-BHC	mg/kg	NE	0.09	0.59	.0023 U	.0021 U	.0022 U	.0042 U	.0021 U
alpha-Chlordane	mg/kg	0.00224	1.6	11	.018 U B	.017 U B	.017 U B	.033 U B	.017 U B
Beta-BHC	mg/kg	NE	0.32	2.1	.039 U	.037 U	.038 U	.073 U	.037 U
Delta-BHC	mg/kg	NE	NE	NE	.013 U	.012 U	.013 U	.024 U	.012 U
Dieldrin	mg/kg	0.0199	0.03	0.15	.042 U B Y	.04 U B Y	.04 U B Y	.077 U B Y	.039 U B Y
Endosulfan I	mg/kg	0.000179	370	5300	.025 U B	.024 U B	.024 U B	.046 U B	.023 U B
Endosulfan II	mg/kg	0.00222	370	5300	.029 U B	.027 U B	.027 U B	.053 U B	.027 U B
Endosulfan sulfate	mg/kg	0.0031	NE	NE	.043 U B	.041 U B	.041 U B	.079 U B	.04 U B
Endrin	mg/kg	0.00222	18	260	.043 U B	.041 U B	.041 U B	.079 U B	.04 U B
Endrin aldehyde	mg/kg	0.00222	NE	NE	.019 U B	.018 U B	.018 U B	.035 U B	.018 U B
gamma-BHC	mg/kg	NE	0.44	2.9	.024 U	.023 U	.023 U	.044 UJ	.022 U
gamma-Chlordane	mg/kg	0.0027	1.6	11	.018 U B	.017 U B	.017 U B	.033 U B	.017 U B
Heptachlor	mg/kg	NE	0.11	0.55	.024 U	.023 U	.0012 J	.044 U	.022 U
Heptachlor epoxide	mg/kg	NE	0.053	0.27	.025 U	.024 U	.024 U	.046 U	.023 U
Methoxychlor	mg/kg	NE	310	4400	.068 U	.064 U	.065 U	.13 UJ	.063 U
Toxaphene	mg/kg	NE	0.44	2.2	.84 UJ Y	.79 UJ Y	.8 UJ Y	1.5 UJ Y	.78 UJ Y
<b>EPA 8082</b>									
Aroclor-1016	mg/kg	NE	3.9	29	.84 U	.79 U	.8 U	.77 U	.78 U
Aroclor-1221	mg/kg	NE	0.22	1	.84 U Y	.79 U Y	.8 U Y	.77 U Y	.78 U Y
Aroclor-1232	mg/kg	NE	0.22	1	.84 U Y	.79 U Y	.8 U Y	.77 U Y	.78 U Y
Aroclor-1242	mg/kg	NE	0.22	1	.84 U Y	.79 U Y	.8 U Y	.77 U Y	.78 U Y
Aroclor-1248	mg/kg	NE	0.22	1	.84 U Y	.79 U Y	.8 U Y	.77 U Y	.78 U Y
Aroclor-1254	mg/kg	NE	0.22	1	.84 U Y	.79 U Y	.8 U Y	.77 U Y	.78 U Y
Aroclor-1260	mg/kg	NE	0.22	1	.84 U Y	.79 U Y	.8 U Y	.77 U Y	.78 U Y

\*Laboratory method detection limits were below PRG levels for all analytes.

**Table 3-1**  
**Summary of Analytical Results — PCB A2**

Sample Identification					18609-2591	18609-2592
Location Code					PCB-A2-08	PCB-A2-08
Date Sampled					01/17/00	01/17/00
Depth (feet below ground surface)					1.5	3.0
	Unit	Background	Residential PRG	Industrial PRG		
<i>CA LUFT 8015M</i>						
C23-C30 (Motor Oil)	mg/kg	NE	NE	NE	270	160
<i>EPA 8081</i>						
4,4'-DDD	mg/kg	0.0361	2.4	17	.011 J	.011 J
4,4'-DDE	mg/kg	0.145	1.7	12	.037 J	.031 J
4,4'-DDT	mg/kg	0.236	1.7	12	.083 J	.062 J
Aldrin	mg/kg	NE	0.029	0.15	.085 U Y	.082 U Y
alpha-BHC	mg/kg	NE	0.09	0.59	.011 U	.01 U
alpha-Chlordane	mg/kg	0.00224	1.6	11	.085 U B	.082 U B
Beta-BHC	mg/kg	NE	0.32	2.1	.19 U	.18 U
Delta-BHC	mg/kg	NE	NE	NE	.063 U	.06 U
Dieldrin	mg/kg	0.0199	0.03	0.15	.2 U B Y X	.19 U B Y X
Endosulfan I	mg/kg	0.000179	370	5300	.12 U B	.12 U B
Endosulfan II	mg/kg	0.00222	370	5300	.14 U B	.13 U B
Endosulfan sulfate	mg/kg	0.0031	NE	NE	.21 U B	.2 U B
Endrin	mg/kg	0.00222	18	260	.21 U B	.2 U B
Endrin aldehyde	mg/kg	0.00222	NE	NE	.091 U B	.088 U B
gamma-BHC	mg/kg	NE	0.44	2.9	.11 UJ	.11 UJ
gamma-Chlordane	mg/kg	0.0027	1.6	11	.085 U B	.082 U B
Heptachlor	mg/kg	NE	0.11	0.55	.11 U Y	.11 U Y
Heptachlor epoxide	mg/kg	NE	0.053	0.27	.12 U Y	.12 U Y
Methoxychlor	mg/kg	NE	310	4400	.32 UJ	.31 UJ
Toxaphene	mg/kg	NE	0.44	2.2	4 U Y X	3.8 U Y X
<i>EPA 8082</i>						
Aroclor-1016	mg/kg	NE	3.9	29	.8 U	.77 U
Aroclor-1221	mg/kg	NE	0.22	1	.8 U Y	.77 U Y
Aroclor-1232	mg/kg	NE	0.22	1	.8 U Y	.77 U Y
Aroclor-1242	mg/kg	NE	0.22	1	.8 U Y	.77 U Y
Aroclor-1248	mg/kg	NE	0.22	1	.8 U Y	.77 U Y
Aroclor-1254	mg/kg	NE	0.22	1	.8 U Y	.77 U Y
Aroclor-1260	mg/kg	NE	0.22	1	.8 U Y	.77 U Y

\*Laboratory method detection limits were below PRG levels for all analytes.

OHM Remediation Services Corp.

**Table 3-1**  
**Summary of Analytical Results — PCB A2**

Explanation:

B - result exceeds established background limits

CA LUFT - California Leaking Underground Fuel Tank

EPA - United States Environmental Protection Agency

J - estimated

M - Modified

MDL - method detection limit

mg/kg - milligrams per kilogram

NA - not analyzed

NE - not established

OHM - OHM Remediation Services Corp.

PCB - polychlorinated biphenyls

PRG - Preliminary Remediation Goal, EPA Region IX, October 1999

RDL - reporting detection limit

U - not detected above or equal to the stated reporting limit. In cases where RDL exceeded the target cleanup level, the MDL, rather than the RDL, was used to assess the data.

When concentrations exceeded the MDLs but were below the RDLs, the laboratory flagged the results with the qualifier "J". When the concentrations were below the MDLs, the results were reported at the RDLs and flagged with the qualifier "U". The MDLs for all analytes met the target cleanup levels.

UJ - not detected above or equal to the stated reporting limit. The sample detection limit is an estimated value.

X - result exceeds industrial PRGs

Y - result exceeds residential PRGs

µg/kg - micrograms per kilogram

**Table 3-2**  
**Summary of QC Analytical Results — PCB A2**

Sample Identification		18609-2593
Location Code		Equipment Rinsate
Date Sampled		01/17/00
	Unit	
<i>CA LUFT 8015M</i>		
TPH as Diesel	mg/L	.47 U
<i>EPA 8081</i>		
4,4'-DDD	µg/L	.48 U
4,4'-DDE	µg/L	.48 U
4,4'-DDT	µg/L	.096 U
Aldrin	µg/L	.029 U
alpha-BHC	µg/L	.34 U
alpha-Chlordane	µg/L	.77 U
Beta-BHC	µg/L	.22 U
Delta-BHC	µg/L	.23 U
Endosulfan I	µg/L	.29 U
Endosulfan sulfate	µg/L	.34 U
Endrin	µg/L	.37 U
Endrin aldehyde	µg/L	.48 U
gamma-BHC	µg/L	.24 U
gamma-Chlordane	µg/L	.36 U
Heptachlor	µg/L	.38 U
Heptachlor epoxide	µg/L	.31 U
Methoxychlor	µg/L	.83 U
Toxaphene	µg/L	1.9 U
<i>EPA 8082</i>		
Aroclor-1016	µg/L	1.9 U
Aroclor-1221	µg/L	1.9 U
Aroclor-1232	µg/L	.94 U
Aroclor-1242	µg/L	.94 U
Aroclor-1248	µg/L	.94 U
Aroclor-1254	µg/L	.94 U
Aroclor-1260	µg/L	.94 U

OHM Remediation Services Corp.

**Table 3-2**  
**Summary of QC Analytical Results — PCB A2**

Explanation:

CA LUFT - California Leaking Underground Fuel Tank

EPA - United States Environmental Protection Agency

J - estimated

M - Modified

mg/l - milligrams per liter

OHM - OHM Remediation Services Corp.

PCB - polychlorinated biphenyls

QC - quality control

RDL - reporting detection limit

U - not detected above or equal to the stated reporting limit

µg/l - micrograms per liter

EXTRACTS FROM BRAC BUSINESS PLAN

SUMMARY REPORT

FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

**United States Marine Corps**

# **Base Realignment and Closure Business Plan**

**EXTRACTS**



**For  
Marine Corps Air Station  
El Toro, CA**

**March 2000**

**Table 2**  
**Site Summary**  
(Sheet 24 of 35)

Database Tracking	Reuse Parcel	Description	Material Disposed	Date of Operation	Status	Regulatory Mechanism	NFA	Comments	ECP Area Type	Approx. ECP Area (acres)
PCB A1	8	Transformer storage area near water tank 175			Inactive				7	0
→ PCB A2	11A	PCB equipment storage area near Bldg. 324			Inactive				7	0.18
PCB T1	9B	Transformer - F503496-65P, Pad 1311-Bldg. 6			Replaced		X		1	0
PCB T2	9B	Transformer-5KL505, Bldg. 12			Replaced		X		1	0.18
PCB T3	9B	Transformer-1350660, Pole 507B-Bldg. 19			Replaced		X		1	0
PCB T4	9B	Transformer- Pole 599-Bldg. 35			Removed		X		1	0
PCB T5	9B	Transformer-23971, Pole 157-Bldg. 58			Replaced		X		1	0
PCB T6	9B	Transformer-6954405, Pad 142-Bldg. 59			Replaced		X		1	0
PCB T7	9B	Transformer-6954539, Pad 142-Bldg. 59			Replaced		X		1	0
PCB T8	9B	Transformer-6956179, Pad 142-Bldg. 59			Replaced		X		1	0
PCB T9	9B	Transformer-7092522, Pole 80-Bldg. 60			Replaced		X		1	0
PCB T10	9B	Transformer-645B17826, Pole 654-Bldg. 65			Removed		X		1	0
PCB T11	9B	Transformer-645B17827, Pole 654-Bldg. 65			Removed		X		1	0
PCB T12	9B	Transformer-645B17855, Pole 654-Bldg. 65			Removed		X		1	0
PCB T13	12B	Transformer-7093890, Pole 904-Bldg. 105			Removed		X		1	0
PCB T14	12D	Transformer-177072, Pad 412-Bldg. 114			Replaced		X		1	0
PCB T15	12D	Transformer-177071, Pad 4112-Bldg. 115			Replaced		X		1	0
PCB T16	12B	Transformer-681549, Pole 812-Bldg. 118			Replaced		X		1	0
PCB T17	12B	Transformer-7093966, Pole 823A-Bldg. 120			Replaced		X		1	0
PCB T18	12B	Transformer-7092506P, Pole 823A-Bldg. 120			Replaced		X		1	0
PCB T19	12B	Transformer-7093966P, Pole 823A-Bldg. 120			Replaced		X		1	0
PCB T20	12B	Transformer-53233, Pad 4111-Bldg. 125			Replaced		X		1	0
PCB T21	12B	Transformer-6160963, Pad 4111-Bldg. 125			Replaced		X		1	0

**Table 3**  
**Site Summary by Reuse Parcel**  
(Sheet 21 of 35)

Database Tracking	Reuse Parcel	Description	Material Disposed	Date of Operation	Status	Regulatory Mechanism	NFA	Comments	ECP Area Type	Approx. ECP Area (acres)
IRP 22	11A	Tactical Air Fuel Dispensing System (TAFDS) (OU-3)	Air fueling station with history of undocumented fuel spills and leaks; location of several fuel bladder revetments.	1980 to 1986	ROD signed in September 1997.	FFA	X		3	2
IRP 24	11A	VOC Source Area <sup>a</sup> (OU-2A)	Various activities in this area, including former metal plating operations, may have contributed to the regional VOC groundwater contamination.		Interim ROD-Vadose Zone-signed in September 1997. RA in progress.	FFA		Includes SWMU/AOC 265	5	200
OWS 297B	11A	100 gal.	Oil/water (stored)	Inst. 1982	Closed	OCHCA	X	SWMU/AOC 76	4	0
OWS 298C	11A	100 gal.	Oil/water (stored)	Inst. 1982	Inactive			SWMU/AOC 84	4	0
OWS 314C	11A	2,200 gal.	Oil/water (stored)	Unknown	Closed	OCHCA	X		4	0.18
OWS 324-1	11A	1,000 gal.	Oil/water (stored)	Unknown	Closed	RWQCB	X		4	0.18
OWS 324-2	11A	1,000 gal.	Oil/water (stored)	Unknown	Closed	RWQCB	X		4	0.18
OWS 357	11A	200 gal.	Oil/water (stored)	Unknown	Closed		X	SWMU/AOC 296	4	0.18
OWS 386B	11A	100 gal.	Oil/water (stored)	Inst. 1982	Inactive			SWMU/AOC 112	2	0
OWS 445	11A	size unknown	Oil/water (stored)	Unknown	Closed	OCHCA	X		4	0.18
OWS 655C	11A	1,250 gal.	Oil/water (stored)		Inactive				2	0.18
OWS 672A	11A	400 gal.	Oil/water (stored)	Inst. 1982	Inactive	RWQCB		SWMU/AOC 174	6	0.18
OWS 758A	11A	100 gal.	Oil/water (stored)	Inst. 1982	Removed	RWQCB		SWMU/AOC 196	2	0
OWS 759A	11A	100 gal.	Oil/water (stored)	Inst. 1982	Removed	RWQCB		SWMU/AOC 199	2	0
OWS 760B	11A	100 gal.	Oil/water (stored)	Inst. 1982	Closed	OCHCA	X	SWMU/AOC 203	4	0
OWS 862	11A	150 gal.	Wastewater (stored)	Unknown	Inactive	RWQCB			1	0.18
OWS 896	11A	550 gal.	Oil/water (stored)	Inst. 1982	Inactive	RWQCB			1	0.18
OWS 897	11A	150 gal.	Oil/water (stored)	Unknown	Inactive	RWQCB			1	0.18
→ PCB A2	11A	PCB equipment storage area near Bldg. 324			Inactive				7	0.18
PCB T26	11A	Transformer-5638241, Pole 802-Bldg. 203			Replaced		X		1	0
PCB T27	11A	Transformer-6455115, Pole 802-Bldg. 203			Replaced		X		1	0
PCB T45	11A	Transformer-B58240, Pad 263-Bldg. 311			Replaced		X		1	0
PCB T49	11A	Transformer-1888163, Pad 254-Bldg. 335			Replaced		X		1	0
PCB T53	11A	Transformer-62220, Pad 259-Bldg. 368			Removed		X		1	0
PCB T54	11A	Transformer-62221, Pad 2510-Bldg. 369			Replaced		X		1	0

M60050.000641  
MCAS EL TORO  
SSIC # 5090.3

EXTRACTS FROM ENVIRONMENTAL BASELINE  
SURVEY REPORT

SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

# EXTRACTS

## MARINE CORPS AIR STATION EL TORO EL TORO, CALIFORNIA INSTALLATION RESTORATION PROGRAM FINAL ENVIRONMENTAL BASELINE SURVEY REPORT

01 April 1995

Revision 0

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

**THROUGH:**  
CONTRACT #N68711-89-D-9296  
CTO #284  
DOCUMENT CONTROL NO:  
CLE-C01-01F284-S2-0004

**WITH:**  
Jacobs Engineering Group Inc.  
401 West A Street, Suite 1905  
San Diego, California 92101

In association with:  
International Technology Corporation  
CH2M HILL

No evidence of releases was observed at these locations. Information on these transformers is provided in Table 3-8.

One transformer location was investigated in the RFA performed at the Station. A PCB release reportedly occurred from the transformer located on the southern side of Building 457 (Database Tracking No. PCBT74). Identified as SWMU/AOC 244, shallow soil samples were collected at this location and PCBs were detected in one out of seven samples. This SWMU/AOC is scheduled for additional field investigation in 1995.

→ **PCB Transformer and Equipment Storage Areas.** Four locations at MCAS El Toro have been used in the past as storage areas for inactive PCB-containing transformers and/or equipment. All four storage areas are located in the southwest quadrant of the Station (refer to Figure 3-1) and include the following:

- o A former transformer storage area is located southwest of South Marine Way, east of Bee Canyon Wash. This area was investigated as SWMU/AOC 7 in the RFA. The storage area was intended to temporarily store transformers until they could be disposed off-Station. Approximately 20 to 30 transformers were stored in this area at the time of the RFA VSI in 1991. No transformers are currently stored in this area. This area is scheduled to be further investigated in 1995.

- o A former transformer storage area is located on the north side of Building 369. Portions of the area are paved. A portion of this storage area is being investigated in the IRP. IRP Site 11 (Transformer Storage Area) is a 30-square-foot concrete pad located in the south-central portion of the storage area where leaks from PCB transformers have been documented. Approximately 50 to 75 transformers were stored on this pad from 1968 to 1983 (Jacobs, 1993a). The IRP boundaries encompass the storage pad, the unpaved areas bordering and to the north of the pad, and a lined drainage ditch south of the pad along the north side of Building 369. Non-PCB transformers are still stored in the area behind Building 369.
  
- o A transformer storage area is located adjacent to Tank 175 (water reservoir). This area was constructed in 1991 and consists of a concrete pad with concrete berms. This area is currently used for storage of non-PCB transformers only. However, according to MCAS El Toro AC/S Installations staff, one PCB-containing transformer was stored in this area for a short time in the past (personal communication, P. Sherwood/MCAS El Toro Installations, February 1994).
  
- o A PCB equipment storage area was identified at the equipment and drum storage area located on the north side of Building 324. During a routine site visit to MCAS El Toro, the Jacobs Team discovered miscellaneous electronic equipment (e.g., switches, capacitors) being

stored in the vicinity of a less than 90-day accumulation area. The items were labelled with hazardous waste stickers indicating the contents as PCB-containing. The labels indicated that the items were in the custody of the Defense Reutilization Marketing Office (DRMO). These items have been removed and disposed of off-Station by an authorized disposal contractor.

### **3.1.7 Miscellaneous LOCs**

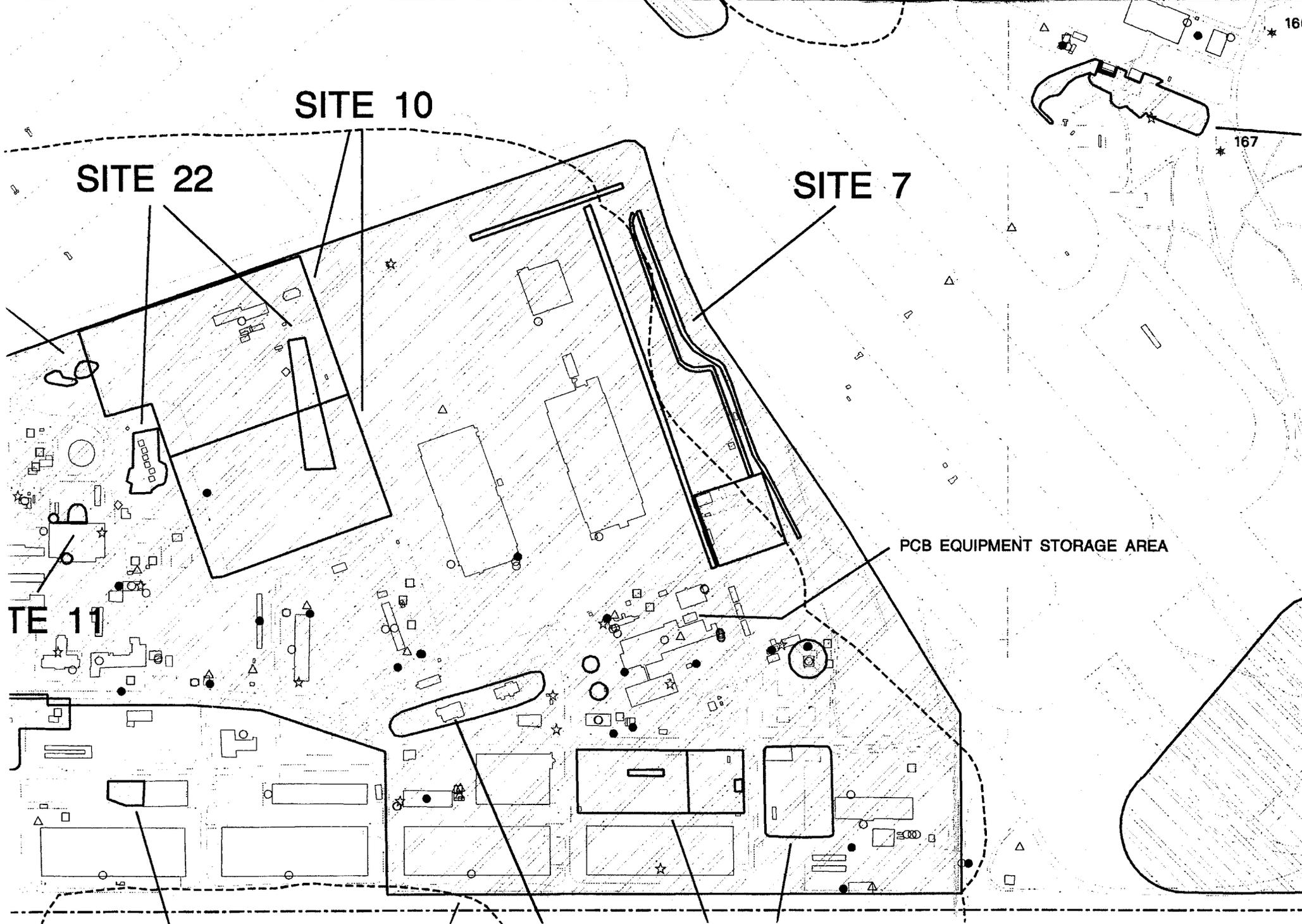
Several miscellaneous sites that do not fall under a general LOC type have been identified at MCAS El Toro. The locations of these LOCs are shown in Figure 3-1. Brief descriptions of these LOCs are provided below.

**Pesticide Storage Areas.** Pesticides and herbicides have historically been used at the Station to control rodents and weeds. The Station currently maintains a 6-month to 1-year supply of pesticides in Building 753. In addition, the golf course has stored pesticides in Building 1687 and, prior to 1959, in the area occupied by Building 464 (Brown and Caldwell, 1986). Building 1687 was demolished in 1987. The locations of these current and former pesticide storage areas are shown in Figure 3-1.

In addition to the pesticide storage areas used by Station personnel, pesticide storage areas are located at two of the areas leased out to agricultural operators. Figure 3-1 shows the locations of these pesticide storage areas. One pesticide storage area is located at Bordier's Nursery located in the

**FIGURE 3-1**  
**LOCATIONS OF LO**

**MCAS EL TORO EBS**  
**01 April 95**



SITE 10

SITE 22

SITE 7

PCB EQUIPMENT STORAGE AREA

TE 11

166

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EXTRACTS FROM RFA REPORT

SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

**EXTRACTS**

**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

**Table 5-4  
Hand Auger Borings  
MCAS EI Toro RFA**

<b>SWMU</b>	<b>TYPE</b>	<b>LOCATION/BUILDING</b>	<b># OF BORINGS</b>
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 Site	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 6-15**  
**Recommendations for SWMUs/AOCs**  
**MCAS EI Toro RFA**

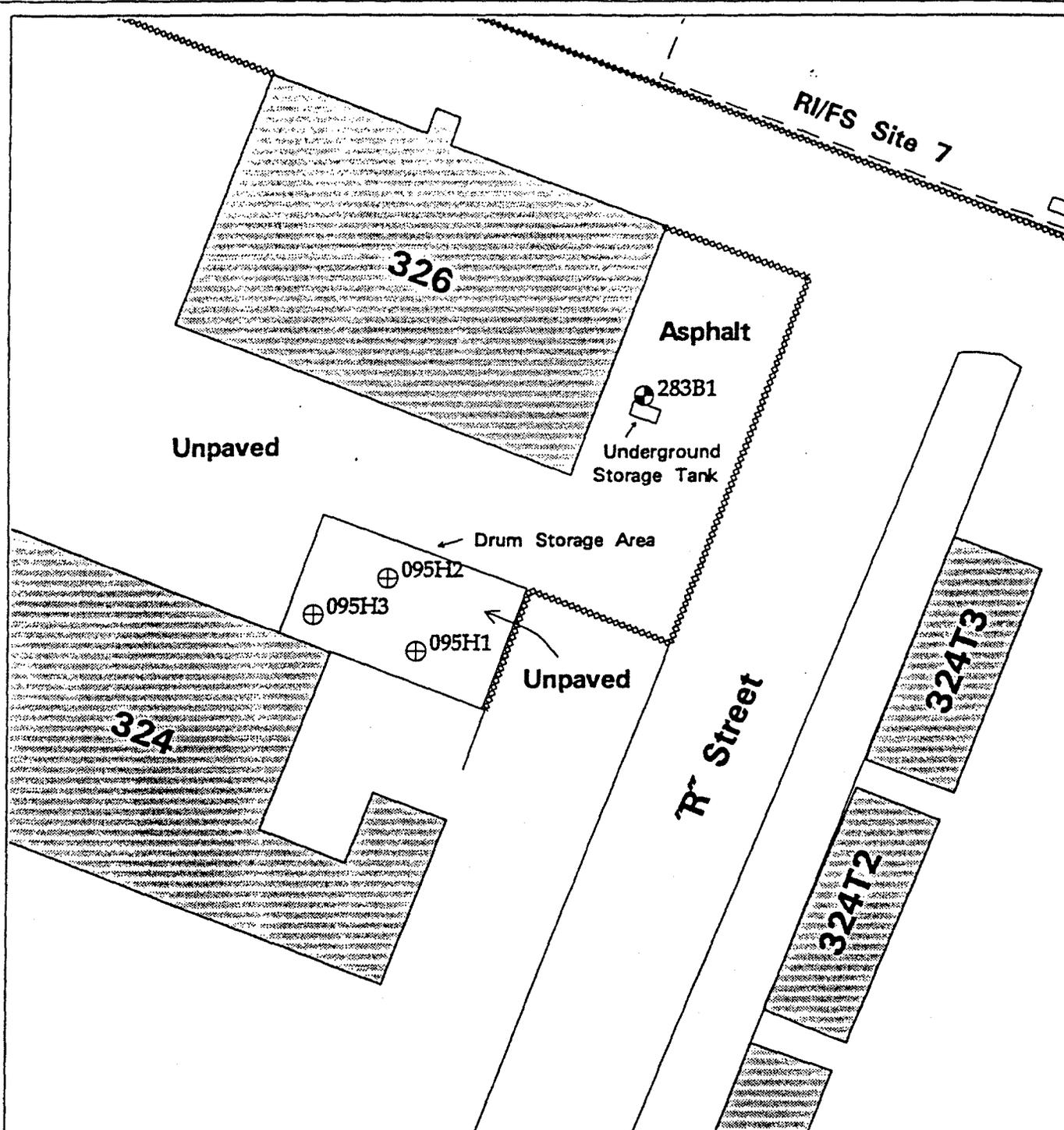
<b>SWMU No.</b>	<b>SWMU/AOC Type</b>	<b>Recommendation (FA/NFA)</b>	<b>Description of Further Action</b>	<b>Rationale for Further Action</b>
3	Marshburn Channel	NFA	--	--
4	Bee Canyon Wash	NFA	--	--
5	Borrego Canyon Wash	NFA	--	--
6	Landfarming site	NFA	--	--
7	Transformer storage area	NFA	--	--
8	Abandoned 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	--	--

6-55

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

<b>SWMU No.</b>	<b>SWMU/AOC Type</b>	<b>Recommendation (FA/NFA)</b>	<b>Description of Further Action</b>	<b>Rationale for Further Action</b>
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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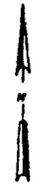
**Figure 32 Sample Location Map**

**Boring Location and Number:**

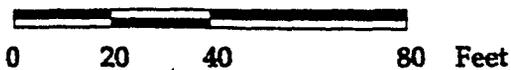
- ⊕ 123H4 5' Deep Boring
- ⊙ 123B4 25' Deep Boring
- ▲ 123A4 60' Long, Angle Boring

**Features:**

-  Building
-  Concrete
-  Fence
-  Railroad



**Scale**



**SWMU/AOC Number and Type:**

- 95 - Engine Test Cell
- 283 - Underground Storage Tank

**MCAS El Toro  
RCRA Facility Assessment**

**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						
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 P 4,4'-DDT-8.0	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	ND	ND	ND	Methylene Chloride-17 B * Acetone-23 * Toluene-2 J PCE-2 J	Di-n-butylphthalate-29 J *	ND	NAB		
		H2	2	ND	ND	ND	Methylene Chloride-13 B * Acetone-16 * Toluene-2 J	Di-n-butylphthalate-29 J *	ND	NAB		
			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	NAB		
		H3	2	47.2	ND	ND	Methylene Chloride-9 BJ * Acetone-12 *	Di-n-butylphthalate-28 J *	4,4'-DDT-3.0 JP	NAB		
			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	NAB		

MCAS EL TORO RCRA FACILITY ASSESSMENT - SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS						RECOMMENDATIONS		
				TPH (mg/kg)	TPH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Remarks
					Gasoline	Diesel						
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 S = ESR Vertical Boring A = BSI Angle Boring  The numbers designate the boring number at the site.	Depth below the ground surface, in feet, at which the sample was collected.  Duplication samples are listed directly below the original sample.	Total petroleum hydrocarbon concentration, 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 TPH.  M - Not analyzed for TPH.	Total fuel hydrocarbon concentration, 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 TPH.  Z - Unknown hydrocarbon.	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 CRELs. 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 CRELs. 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 CRELs. 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 a 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 analysis. Concentrations are only presented if at least one sample is above background threshold concentrations. The concentration is 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 CREL but greater than the IDL. E = Value was estimated due to interference. M = Duplicate injection precision not met. N = Split sample recovery not within control limits.	This column presents the recommended action for each site and describes the rationale that led to the recommendations.  NFA = No Further Action  CRQL = Contract Required Limit.  BQT = Background Threshold Value.  ETM = BQT Met.  FRG = Further Remedial Goals.		

PRVSI:CTO99

CLE-C01-01F099-B2-0004

**Evaluation Form  
SWMU/Area of Concern  
Number 95**

Name: Engine Test Cell

Location: Building 324

Size: Approximately 1 acre

Date of Site Visit: 25 April 1991



Period of Operation

Former Engine Test Cell  
Currently active as a training facility and storage warehouse

**Evaluation Form  
SWMU/Area of Concern  
Number 95**

Unit Characteristics

Building 324 is an old engine test cell. Since its use as a test cell, the building has been added onto and restored. Currently, the southern one-third of the building appeared to be used as a storage facility for the Station fire department. The other part of the building is an aircraft maintenance training facility for military personnel. The inside and outside area of this large building were inspected during the site visit.

Three 55-gallon drums of antifreeze were observed at the eastern side of the building on unpaved soil. There were no stains in this area. Near the southeastern corner of Building 324 is an area that appeared to be a possible former HWSA.

Waste Characteristics

Unknown

Possible Migration Pathways

Soil

Evidence of Release

None observed

Exposure Potential

On-Station personnel

Recommendations

A sampling visit is recommended for the possible HWSA on unpaved soil near Building 324

**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							
283	Underground Storage Tank (32)	B1	5	ND	ND	ND	Methylene Chloride-8 BJ *	NA	NA	NA	NFA      CRDL - Contract Required Detection Limit		
			10	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J TCE-2 J	NA	NA	NA			
			10 (Duplicate)	ND	ND	ND	Methylene Chloride-7 BJ * Toluene-2 J TCE-2 J	NA	NA	NA			
			15	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-2 J TCE-3 J Acetone-5 BJ *	NA	NA	NA			
			20	ND	ND	ND	Methylene Chloride-7 BJ * Acetone-4 BJ *	NA	NA	NA			
			25	ND	ND	ND	Methylene Chloride-8 BJ * Toluene-2 J TCE-1 J	NA	NA	NA			

**Evaluation Form  
SWMU/Area of Concern  
Number 283**

Unit Characteristics

Tank 326-B is located adjacent to the south side of Building 326. According to the Underground Storage Tank Survey Report by EG&G (1990), the tank was installed in 1945. The material of the tank and its contents are unknown. Building 326 is currently abandoned. The ground surrounding the building is mostly unpaved except for the area on the south side of the building. Tank 326-B is located approximately 30 ft east of the southwest corner of Building 326. The location of the tank is identified by a 3-ft-diameter steel cover. No staining was observed on the asphalt surface near the cover. Since the tank is located underground, the physical condition of the tank could not be visually observed.

Waste Characteristics

Unknown

Possible Migration Pathways

Subsurface soil

Evidence of Release

None observed

Exposure Potential

On-Station personnel

Recommendations

The contents of this tank are unknown. Although no evidence of a release was indicated from the records review or the site visit, it is difficult to assess the potential for release from this UST. A sampling visit is recommended for this SWMU/AOC.



<b>PROJECT NUMBER</b> LA070022.S0.10	<b>BORING NUMBER</b> 263A-2
SHEET 1 OF 2	
<b>SOIL BORING LOG</b>	

**PROJECT** NAVY CLEAN RCRA FACILITY ASSESSMENT      **LOCATION** MCAS-EL TORO  
**ELEVATION** \_\_\_\_\_ **DRILLING CONTRACTOR** BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA  
**DRILLING METHOD AND EQUIPMENT** HSA, 3-1/4" ID, 6-1/2" OD, GUS PECH BRAT-22  
**WATER LEVELS** \_\_\_\_\_ **START** 11/04/92      **FINISH** 11/04/92      **LOGGER** K. HUCKRIEDE

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS	SOIL DESCRIPTION	COMMENTS
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)			
5.0					<u>POORLY GRADED SAND WITH CLAY</u> (SP-SC), dark brown, moist.	Start drilling at 14:32.
10.0	10.0					
15.0	12.0	1-MC	1.5	10-15-20	<u>LEAN CLAY WITH SAND</u> (CL), dark brown, moist, very stiff, fine sand.	Headspace reading 1.5 ppm on OVA, between sleeves.
20.0	20.0					
25.0	22.0	2-MC	1.5	8-10-10	<u>POORLY GRADED SAND WITH CLAY</u> (SP-SC), brown, moist, medium dense, fine to medium grained.	Headspace reading 0.5 ppm on OVA.
30.0	30.0					
35.0	32.0	3-MC	1.5	20-32-40	<u>WELL GRADED SAND WITH CLAY</u> (SW-SC), light brown, moist, dense.	Headspace reading 2.0 ppm on OVA and 0.2 ppm on HNu.
40.0	32.0					



<b>PROJECT NUMBER</b> LA070022.S0.10	<b>BORING NUMBER</b> 263A-2
SHEET 2 OF 2	
<b>SOIL BORING LOG</b>	

**PROJECT** NAVY CLEAN RCRA FACILITY ASSESSMENT      **LOCATION** MCAS-EL TORO  
**ELEVATION** \_\_\_\_\_ **DRILLING CONTRACTOR** BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA  
**DRILLING METHOD AND EQUIPMENT** HSA, 3-1/4" ID, 6-1/2" OD, GUS PECH BRAT-22  
**WATER LEVELS** \_\_\_\_\_ **START** 11/04/92      **FINISH** 11/04/92      **LOGGER** K. HUCKRIEDE

DEPTH BELOW SURFACE (FT)	SAMPLE			STANDARD PENETRATION TEST RESULTS  6" - 6" - 6" (N)	SOIL DESCRIPTION  SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS  DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)			
40.0	40.0				POORLY GRADED SAND (SP), light brown, moist, very dense, fine to medium grained.	Headspace reading on OVA similar to background.
	42.0	4-MC	1.4	30-25-58		
45.0					WELL GRADED SAND (SW), yellow-brown, dry to moist, very dense.	Headspace reading on OVA similar to background.
	50.0					
	52.0	5-MC	1.3	50-58-88		
55.0					POORLY GRADED SAND WITH CLAY (SP-SC), brown, moist, very dense, fine to medium grained.	Headspace reading on OVA similar to background.
	60.0					
	62.0	6-MC	1.2	37-82-58		
					Total Depth at 62.0 Feet.	
65.0						

EXTRACTS FROM SWPPP  
SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

NOTE: ANNOTATIONS MADE BY THE  
WRITER OF THE PCB A2 REPORT  
ARE IDENTIFIED WITH AN ARROW OR  
A STAR SYMBOL: ☆

**EXTRACTS**

**STORM WATER POLLUTION PREVENTION PLAN  
(SWPPP)**

**FOR**

**MARINE CORPS AIR STATION EL TORO  
EL TORO, CALIFORNIA**

**CONTRACT NO. N68711-96-D-2059  
DELIVERY ORDER NO. 0002**

**VOLUME 1**

**JULY, 1997**

**INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.**

## 5. STORM WATER POLLUTION PREVENTION EVALUATION

Because of its mission as a part of the National Defense system, MCAS El Toro has numerous facilities and activities where there is potential for pollutants to contact storm water. These facilities include fueling operations, wash racks for aircraft, vehicles, and equipment, engine repair and maintenance, and support facilities that use or store significant quantities of materials containing potential pollutants.

Discharges from MCAS El Toro occur at various locations. Storm water run-off enters Agua Chion Wash, Bee Canyon Wash, Rifle Range Road Ditch, San Diego Creek, and Upper Newport Bay. A Site Topographic Map shows the locations of discharges leaving the air station. To provide a clearer understanding of the hydrologic conditions at MCAS El Toro, each drainage basin has been modeled using the U.S. Environmental Protection Agency's Storm Water Management Model, as described in the Watershed Characterization Report (Volume 3). The physical characteristics of each drainage basin (e.g., percent impermeability, etc.) are also discussed in that report.

The facilities at MCAS El Toro were investigated from field visits in 1993 to determine whether they were of limited concern or were more likely to be a possible threat to water quality. Addressed in the following sections are those buildings of concern within each Drainage Basin. Each building or activity observed during field observations is listed and discussed by drainage basin.

### → 5.1 DRAINAGE BASIN 1

This drainage basin comprises most of the buildings in Areas 27 and 28. It has a map area of about 188 acres.

#### 5.1.1 Buildings of Limited Concern

The buildings listed below in Table 5-1 do not use, handle, transport or store significant quantities of industrial materials nor do they generate significant amounts of liquid or solid industrial pollutants, and they do not appear to be of concern to the quality of storm water discharges:

<b>TABLE 5-1</b> <b>BASIN 1</b> <b>BUILDINGS OF LIMITED CONCERN</b>		
BLDG #	DESCRIPTION	TENANT
96	Transportation Office	Station/G-4
155	Grounds Equipment Shed	Installation
156	Storage Tank/Potable Water	Installation
174	Storage Tank/Potable Water	Installation
175	Storage Tank/Potable Water	Installation
299	GME/G-4	Installation
301	PW Administration/Labor Shop	Installation
304	Academic Instruction (EEO)	HRO
305	Group Headquarters	MWSG-37
309	Group Headquarters	MWSG-37
312	Photographic Building	Vacant
313*	Field Maintenance Shop	CSSD-14
	Storage out of Stores	MWSS-373
315	MWSS-473	
319	General Warehouse -MC (DRMO)	DRMO
	General Warehouse - Navy	Supply
321	General Warehouse - MC	Supply
324	Comm/MT/Const/TAFDS	MWSS-374
	Storage	Station/Fire
	CO2 Storage	Station/Fire
325*	Hazardous/Flammable Storehouse	FREST
326*	Hazardous/Flammable Storehouse	Environment
333	Field Maintenance Shop	CSSD-14
335	Water Distribution Building	Installation

**TABLE 5-1**

**BASIN 1**

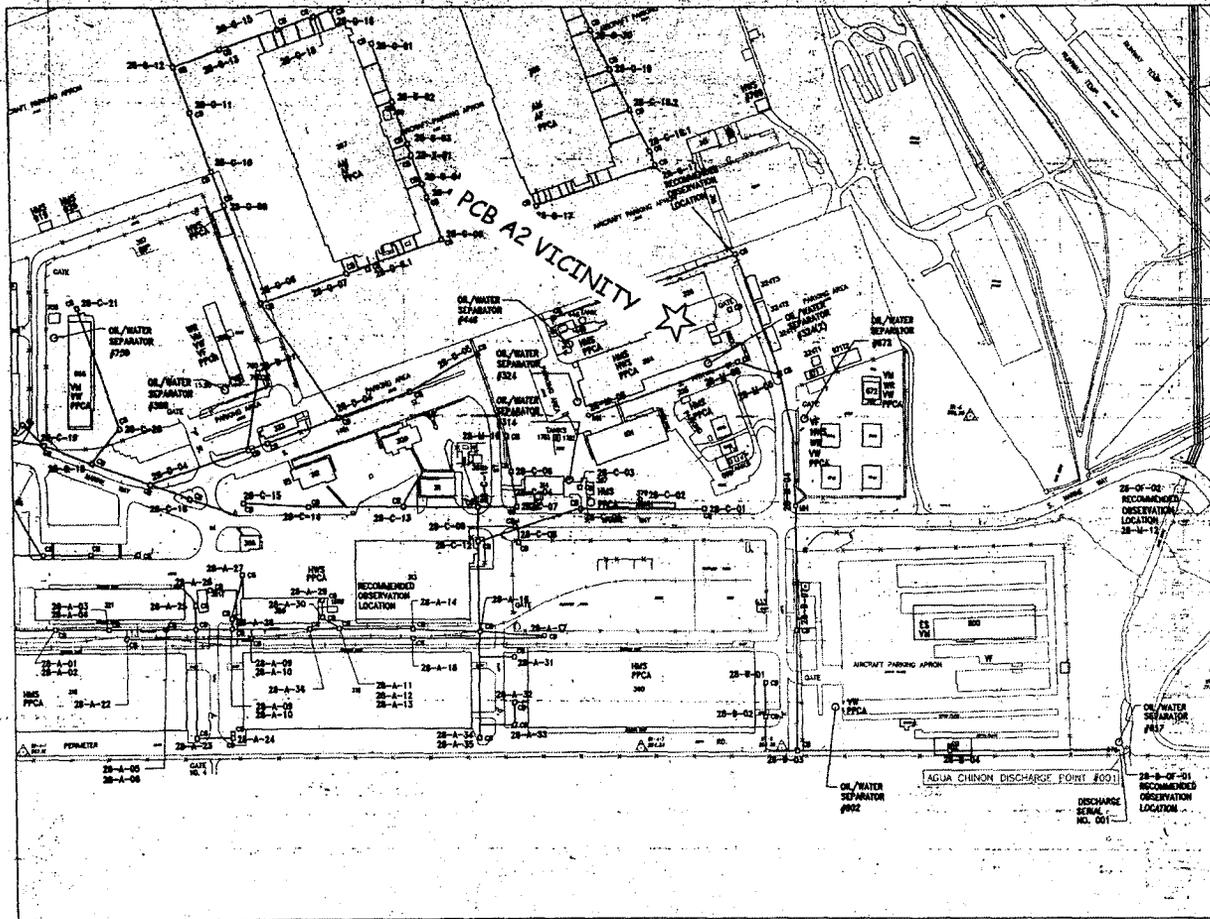
**BUILDINGS OF LIMITED CONCERN**

<b>BLDG #</b>	<b>DESCRIPTION</b>	<b>TENANT</b>
379	Truck Weighing Facility	Supply
383	Electrical Distribution Substation #2	Installation
387	Loading/Unloading Ramp	CSSD-14
435*	Aircraft Fire and Rescue Station	Station G-3
530	Storage Tank/Potable Water	Installation
616	Administration Office	Installation
700*	Filling Station C-Pool	Supply
742	Electrical Shop Storage	Installations
759*	Vehicle Washrack Utility Building	CSSD-14
760*	Vehicle Washrack Utility Building	CSSD-14
789	Sewage Monitoring Station	Installation
824	Crash Crew and Station Recovery	Station G-3
827	Supply Loading Ramp	Supply
853	Loading Ramp	Supply
859*	Recreational Vehicle Dump Site	MWR-Rec
862*	Hazardous Waste Storage Transfer Tank	Environment
866	Sentry House # 4	Security
867	Sentry House #5	Security
926	DRMO Office, Disposal Yard #1	DRMO
1703	Hazardous/Flammable Storehouse	Supply
1710*	Public Works Maintenance Storage	Installation

\* Buildings with an asterisk indicate facilities which were not involved in any industrial activities or did not store any hazardous materials at the time of our field observations. However, these facilities appear to have been involved in activities of potential concern in the past. If activities of concern resume in the future, site specific BMPs should be adopted. These facilities/activities should be reviewed on an annual basis in order to update this plan as necessary.

**TABLE 7-1**  
**MCAS EL TORO MATERIALS INVENTORY**

BLDG #	BASIN	BUILDING DESCRIPTION	TENANT	Concern Level	TRADE/COMMON NAME	MAX. DAY	AVE. Day	CONT.
320	01	Hazardous/Flammable Storage	Supply	Concern	Lubricating Oil, aircraft	11487 qt	2500 qt	1 qt
320	01	Hazardous/Flammable Storage	Supply	Concern	Lubricating/Gear Oil 80/90W	55 gal	5 gal	5 gal
320	01	Hazardous/Flammable Storage	Supply	Concern	Nitrogen	1288 cf	364 cf	187 cf
320	01	Hazardous/Flammable Storage	Supply	Concern	Sodium Hypochlorite	58 gal	5 gal	1 gal
322	01	EM Mess Open	Vacant	Concern	N/A			
324	02	Comm/MT/Const/ TAFDS	MWSS-374	Concern	N/A			
325	02	Haz/Flam Storehouse	FREST	Concern	N/A			
353	08	A/C Ready Fuel Storage Tank Farm #4	Supply	Concern	Aviation Gasoline	N/A	N/A	N/A
357	01	Haz/Flam Storehouse	Installation	Concern	Anticorrosion Liquid	N/A	N/A	55 gal
357	01	Haz/Flam Storehouse	Installation	Concern	Entec 702	N/A	N/A	55 gal
357	01	Haz/Flam Storehouse	Installation	Concern	Phosphoric Acid	N/A	N/A	55 gal
359	01	MTIS Building	Supply	Concern	Corrosive Cleaner	N/A	N/A	55 gal
359	01	MTIS Building	Supply	Concern	Desiccants	N/A	N/A	N/A

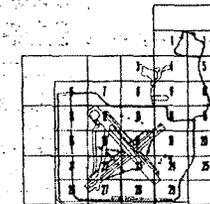


**'MCAS' EL TORO - AREA 28**  
SCALE: 1"=150'-0"

SYMBOL	DESCRIPTION	PREP'D BY	DATE	APPROVED

**LEGENDS**

- AST - ABOVE GROUND STORAGE TANK
- AM - AIRCRAFT MAINTENANCE
- AW - AIRCRAFT WASHING
- AF - AIRCRAFT FUELING
- AP - AIRCRAFT PAINTING
- CB - CATCH BASIN
- ES - EQUIPMENT STORAGE
- EM - EQUIPMENT MAINTENANCE
- HMS - HAZARDOUS MATERIAL STORAGE
- HWS - HAZARDOUS WASTE STORAGE
- HWTA - HAZARDOUS WASTE TRANSFER AREA
- MH - MANHOLE
- OWS - OIL/WATER SEPARATOR
- PCA - POLLUTANT CONTACT AREA
- PPCA - POTENTIAL POLLUTANT CONTACT AREA
- UGT - UNDERGROUND STORAGE TANK
- VP - VEHICLE PAINTING
- VE - VEHICLE FUELING
- VM - VEHICLE MAINTENANCE
- VW - VEHICLE WASHING
- WR - WASH RACK
- WTA - WASTE TRANSFER AREA



**KEY PLAN**  
SCALE: NONE



IF SHEET IS LESS THAN 22X34 IT IS A REDUCED PRINT SCALE ACCORDINGLY

<b>DEM</b> INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.			
PROJECT NO.		DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND	
EL TORO		SOUTHWEST DIVISION	
NAVAL AIR STATION		EL TORO, CA	
<b>'MCAS' EL TORO</b>			
<b>AREA 28 - STORM DRAINS</b>			
TITLE	DATE	CODE	ISSUE NO.
D			
APPROVED	DATE	CON. CODE NO.	2022
BY: [Signature]	DATE	SPEC.	SHEET OF

M60050.000641  
MCAS EL TORO  
SSIC # 5090.3

EXTRACTS FROM HM/HWMP  
SUMMARY REPORT  
FORMER ELECTRONIC EQUIPMENT STORAGE  
AREA PCB A2

DATED 24 JANUARY 2001

Final

Marine Corps Air Station El Toro  
Hazardous Material/Hazardous Waste  
Management Plan

EXTRACTS

August 1994



Prepared for:

Southwest Division Naval Facilities Engineering Command  
1220 Pacific Highway  
San Diego, CA 92132-5190

Prepared by:

Science Applications International Corporation  
Engineering Sciences Division  
10260 Campus Point Drive  
San Diego, CA 92121

Contract No. N68711-92-D-4658

Delivery Order No. 0004

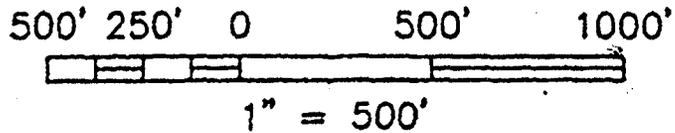
NOTE: ANNOTATIONS MADE BY THE  
WRITER OF THE PCB A2 REPORT  
ARE IDENTIFIED WITH AN ARROW OR  
A STAR SYMBOL:



MCAS El Toro  
Santa Ana, California

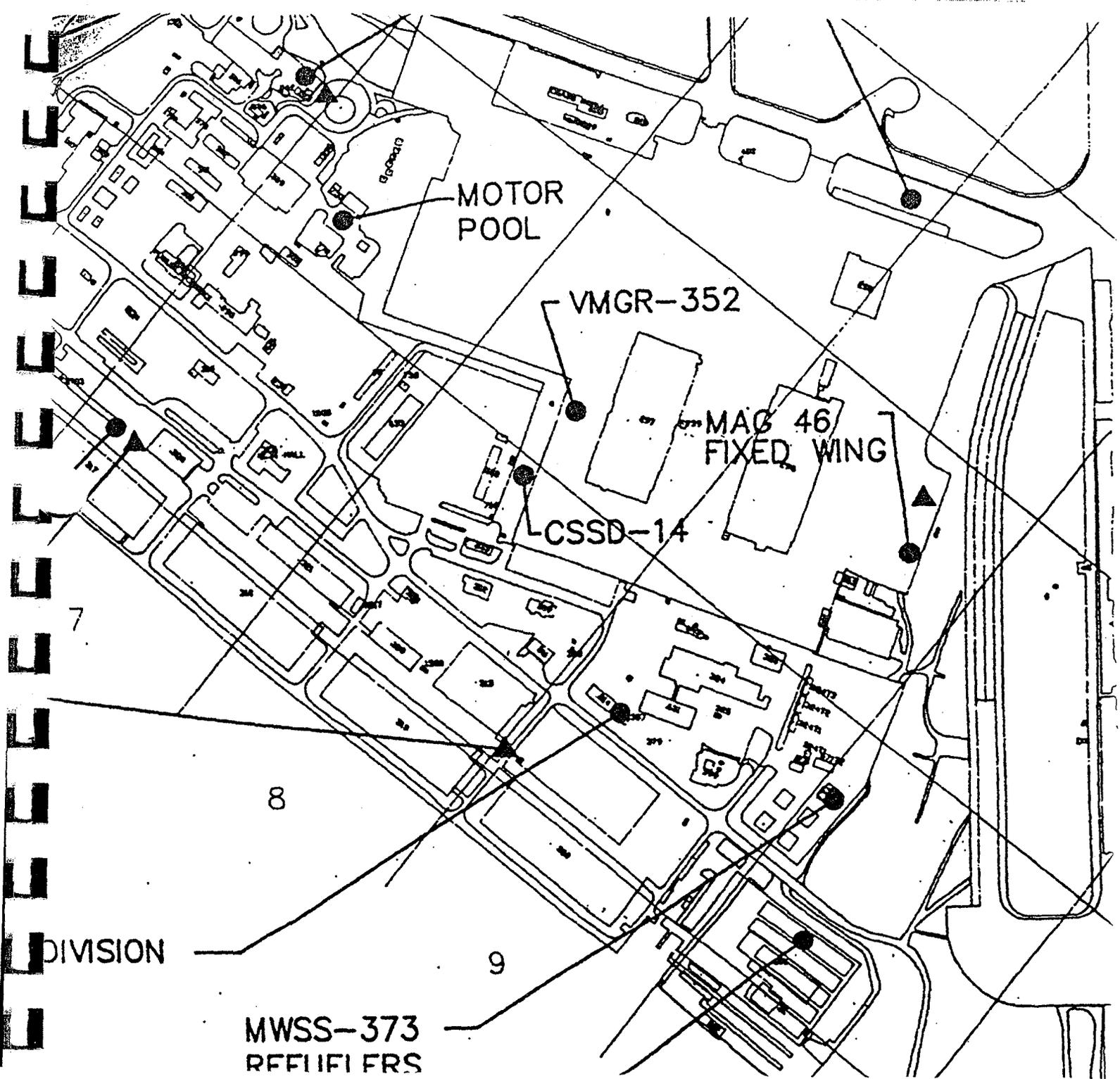
# HAZARDOUS WASTE ACCUMULATION POINTS AND HAZARDOUS MATERIAL STORAGE LOCATIONS

NOVEMBER 5, 1993



Science Applications  
International Corporation  
An Employee-Owned Company

EXTRACTS



MOTOR  
POOL

VMGR-352

MAG 46  
FIXED WING

CSSD-14

7

8

9

DIVISION

MWSS-373  
REFLIERS

Hazardous Waste Accumulation Point Summary		
Unit	Bldg #	Coordinates
Aero Club	10	R5
Armory	744	O2
Auto Hobby Shop	626	M3
CSSD-14	388	U8
Environmental Above Ground Storage Tank	n/a	U6
FMD Shops, Bldg 1601	370	T6
Fuels Division	314	U9
H&HS 38	22	R4
MACG-38 MWCS 38	HGR 5	R4
MAG-46	51	Q4
MAG-46 Fixed Wing	296	T9
MAG-46 Helo Mals-46	295	S8
MALS-11 Air Frames	130	M9
MALS-11 Avionics	856	Q12
MALS-11 Cryogenics (ALSS)	636	R12
MALS-11 GSE North	392	M9
MALS-11 Ordnance	673	P12
MALS-11 Power Plant	658	N10
MALS-11 Power Plant	634	N9
MALS-11 Supply	441	P12
Maytag Aircraft Corp	779	N10
MOD Team	115	N9
Motor Pool (G-4), Bldg 770	386	T7
MWHS-3	7	O5
MWR Auto #1	651	O2
MWR Golf Course	390	P13
MWSS-Utilities	31	S4
MWSS-373 HQ	800	U10
MWSS-373 Refuelers	671	U9
SOMS HQ	289	N5
SOMS Maintenance	HGR 2	O4
SOMS Recovery		
Supply	320	U7
VMFA (AW)-121	462	R11
VMFA (AW) 225	698	N9
VMFA (AW)-242	461	R11
VMFAT-101	371	Q10
VMFA-323	605	N8
VMGR-352	287	T8
VFMA-314	605	N7

No Further Action Decision Documents for Nearby Environmental  
Locations of Concern (LOCs), Extracts from Site 24 Progress Report,  
Extracts from 1994 Soil Gas Survey Report,  
And Selected Groundwater Information



September 6, 2000

**EXTRACTS**

Ms. Bozier H. Demaree, Code 02R.BD  
Contracting Officer  
Naval Facilities Engineering Command, Southwest Division  
1220 Pacific Highway  
San Diego, California 92132-5187

**Attn: Ms. Lynn Marie Hornecker**

**Re: Tank Closure Letter Report  
Underground Storage Tank (UST) 324 G at  
Marine Corps Air Station, El Toro, California  
SWDIV Contract Number: N68711-93-D-1459  
DCN SW 8799, Delivery Order Number: 0070**

This Tank Removal and Site Closure Report summarizes the field activities conducted and associated with the removal of an underground storage tank (UST) at Building 324. OHM Remediation Services Corp. (OHM) removed one UST and associated piping designated as UST 324G from the Building 324 (the Site) at Marine Corps Air Station, El Toro, California (hereinafter referred to as "the Station"). The location of the Site and Station is shown on Figure 1-1, Facility Location Map.

Building 324 is located in the southwest quadrant of the Station, south of Bee Canyon Wash and north of Agua Chinon Wash, near the cross section of South Marine Way and "R" street. UST 324G was located approximately 9-feet south of Building 324, former storage warehouse in an unpaved area. Building 324 and UST 324G locations are shown on Figure 1-2, Location Map.

### **Summary of Field Activities**

Field activities were conducted in accordance with the approved *Draft Work Plan, Remediation of Various Underground Tanks at the Marine Corps Air Station, El Toro, California, OHM 1995*. Details of the UST 324G field activities are described below

### **Review of Station Maps**

OHM consulted with Station's Caretaker Site Officer (CSO) to review Building 324G-construction maps. Station CSO provided following maps for Building 324G:

- Groundfloor, Testcells, Building 324, January 27, 1944. Drawing Number: 313593

**Table 1-1**  
**Summary of Analytical Results — UST 324G**

Sample Identification		18609-3093	18609-3094	18609-3095	18609-3096
Location Code		Tank-324G-EX-1	Tank-324G-Pipe 1	Tank-324G-Pipe 1	Tank-324G-Stockpile
Date Sampled		06/13/00	06/13/00	06/13/00	06/13/00
Depth (feet below ground surface)		10.0	4.0	4.0	Surface
	Unit				
<i>CA LUFT 8015M</i>					
TPH as Diesel	mg/kg	12 U	11.6 U	11.7 U	11.3 U
TPH as Gasoline	mg/kg	1.16 U	1.16 U	1.17 U	1.13 U
<i>EPA 418.1</i>					
Total Recoverable Petroleum Hydrocarbon	mg/kg	490	11.6 U	19	37
<i>EPA 8260A</i>					
1,1,1-Trichloroethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
1,1,2,2-Tetrachloroethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
1,1,2-Trichloroethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
1,1-Dichloroethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
1,1-Dichloroethene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
1,2-Dichloroethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
1,2-Dichloropropane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
2-Butanone (MEK)	µg/kg	58 U	58 U	58 U	56 U
2-Chloroethyl vinyl ether	µg/kg	58 U	58 U	58 U	56 U
2-Hexanone	µg/kg	58 U	58 U	58 U	56 U
4-Methyl-2-pentanone (MIBK)	µg/kg	58 U	58 U	58 U	56 U
Acetone	µg/kg	33 J	58 U	58 U	83
Benzene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Bromodichloromethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Bromoform	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Bromomethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Carbon disulfide	µg/kg	12 U	12 U	12 U	11 U
Carbon tetrachloride	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Chlorobenzene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Chloroethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Chloroform	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Chloromethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
cis-1,2-Dichloroethene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
cis-1,3-Dichloropropene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Dibromochloromethane	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Ethylbenzene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U

**Table 1-1  
Summary of Analytical Results — UST 324G**

Sample Identification		18609-3093	18609-3094	18609-3095	18609-3096
Location Code		Tank-324G-EX-1	Tank-324G-Pipe 1	Tank-324G-Pipe 1	Tank-324G-Stockpile
Date Sampled		06/13/00	06/13/00	06/13/00	06/13/00
Depth (feet below ground surface)		10.0	4.0	4.0	Surface
	Unit				
Methyl tert-butyl ether (MTBE)	µg/kg	12 U	12 U	12 U	11 U
Methylene chloride	µg/kg	12 U	12 U	12 U	11 U
Styrene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Tetrachloroethene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Toluene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
trans-1,2-Dichloroethene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
trans-1,3-Dichloropropene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Trichloroethene	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Vinyl acetate	µg/kg	58 U	58 U	58 U	56 U
Vinyl chloride	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U
Xylenes (total)	µg/kg	5.8 U	5.8 U	5.8 U	5.6 U

OHM Remediation Services Corp.

**Table 1-1**  
**Summary of Analytical Results — UST 324G**

Explanation:

CA LUFT - California Leaking Underground Fuel Tank

DCN - document control number

EPA - United States Environmental Protection Agency

HA - hand auger

J - estimated value

M - Modified

MDL - method detection limit

mg/kg - milligrams per kilogram

NA - not analyzed

OHM - OHM Remediation Services Corp.

PRG - Preliminary Remediation Goal, EPA Region IX, October 1999

R - data is not usable

RL - reporting limit

TPH - total petroleum hydrocarbons

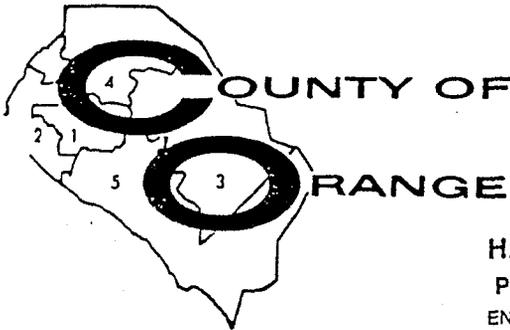
U - not detected above or equal to the stated reporting limit

UJ - the sample detection limit is an estimated value

µg/kg - micrograms per kilogram

UST - underground storage tanks





TOM DIR  
HUGH F. STALLWORTH  
HEALTH O

ENVIRONMENTAL HEALTH DI  
ROBERT E. MERRYMAN, REHS  
DEPUTY DIR

HEALTH CARE AGENCY  
PUBLIC HEALTH SERVICES  
ENVIRONMENTAL HEALTH DIVISION  
2009 E. EDINGER AVENUE  
SANTA ANA, CALIFORNIA 92705  
(714) 667-3700

FACILITY MODIFICATION  
APPLICATION  
(INSTALLATION/REMOVAL/REPAIR)  
(COMPLETE PAGES 1 & 2)

DATE: 6/6/00

FACILITY INFORMATION

NAME: Maxine Corps Air Station ELTORO  
STREET ADDRESS: 1613249, Building 324  
CITY: IRVINE CA

TOTAL NUMBER OF TANKS (AFTER INSTALLATION/REMOVAL)  
AT THIS LOCATION: 0

TYPE OF BUSINESS:

- GASOLINE STATION       FARM  
 GOVERNMENT             OTHER

OWNER NAME (CORP., INDIVIDUAL, PUBLIC AGENCY):

MCAS ELTORO / CSO  
STREET ADDRESS: P O Box 444  
CITY: EAST IRVINE  
STATE: CA      ZIP 92650  
TELEPHONE NO.: 949-726-2506

BILLING ADDRESS INFORMATION

BILL TO NAME: IT CORPORATION  
BILL TO ADDRESS: 8347 MICHELSON DRIVE  
CITY: IRVINE  
STATE: CA      ZIP 92612  
TELEPHONE NO.: 949-261-6441

TYPE OF CONSTRUCTION

INDICATE NO. OF TANK(S) BEING  
REMOVED/REPAIRED/INSTALLED BELOW: (COMPLETE  
PAGE 2 - INDICATING THE TANKS TO BE  
INSTALLED/REMOVED, OR AFFECTED BY THE REPAIR)

- INSTALLATION(S)  
 REPAIR(S)/RELINE(S) TO USTs  
 CLOSURE(S)/REMOVAL(S)  
 SYSTEM MODIFICATION (E.G. REPIPE, REPAIR TO PIPING)  
 OTHER (SPECIFY) \_\_\_\_\_

24 HOUR EMERGENCY CONTACT PERSON

DAYS: Scott Kehe <sup>OR - 949-726-2506</sup>  
NAME      TELEPHONE  
NIGHTS: IT/ohh <sup>24hr emergency</sup> 800-537-9540  
NAME      TELEPHONE

APPLICANT

NAME: Dhananjay Rawal  
PLEASE PRINT  
SIGNATURE: [Signature]

COMPANY NAME: IT CORPORATION  
TELEPHONE NO.: 949-660-7576

FACILITY OPERATOR (CONTACT PERSON)

NAME: Scott Kehe CSO  
BUSINESS TELEPHONE NO.: 949-726-2506

NOTES: NEW INSTALLATIONS, CLOSURES, REPAIRS AND SYSTEM MODIFICATIONS OF UNDERGROUND STORAGE TANKS REQUIRE SUBMITTAL OF (4) SETS OF PLANS TO THIS DIVISION. THESE PLANS MUST BE APPROVED PRIOR TO THE INITIATION OF CONSTRUCTION OR MODIFICATION. ALL PLANS OR REPORTS REQUIRED MUST ACCOMPANY THIS FORM AT THE TIME OF SUBMITTAL.

PLAN APPROVAL AND FEES ARE VALID FOR ONE YEAR. IF TANKS HAVE NOT BEEN REMOVED, INSTALLED OR MODIFIED WITHIN YEAR OF THE APPROVAL DATE, NEW PLANS AND FEES MUST BE SUBMITTED.

OFFICE USE ONLY

PLAN CHECK NO.: 00PM 34      FEES PAID: \_\_\_\_\_  
PLAN APPROVAL DATE: 6-12-00      BY: [Signature]

RCVD. BY: \_\_\_\_\_

NUMBER OF TANKS TO RECEIVE A SURCHARGE BILL: \_\_\_\_\_

NUMBER OF TANKS TO BE ADDED TO BILLING: \_\_\_\_\_

TANK INFORMATION

PROVIDE THE INFORMATION BELOW FOR ALL TANKS AND PIPING SYSTEMS TO BE INSTALLED, REMOVED OR REPAIRED. ALSO INDICATE THE UPGRADE/CHANGES TO BE MADE TO EACH TANK SYSTEM.

UST 3249

TANK I.D.			#1	#2	#3	#4	
MATERIAL STORED	MATERIAL OR WASTE STORED	CURRENTLY	Water				
		PROPOSED	None				
		PREVIOUSLY	Waste				
FUEL TYPE, I.E., UNLEADED			Unleaded				
CONTAINER	TYPE (TANK, SUMP, OTHERS)		SUMP TANK				
	DOUBLE WALL/SINGLE WALL		Single				
	UL NUMBER		N/A				
	YEAR INSTALLED						
	VAULTED/NOT VAULTED		Concrete Vault				
	PRIMARY	MANUFACTURER		Unknown	<p style="text-align: center;"><b>APPROVED</b></p> <p style="text-align: center;">ORANGE COUNTY HEALTH CARE AGENCY ENVIRONMENT HEALTH DIVISION HAZARDOUS MATERIALS MANAGEMENT SECTION THIS APPROVAL IS VALID FOR 12 MONTHS FROM THE APPROVAL DATE</p>		
		CAPACITY (GALLONS)		APP. 1500 gallons			
		CONSTRUCTION MATERIAL		Concrete			
		THICKNESS (UNITS)		Unknown			
		INTERIOR LINING		Unknown			
	SECONDARY	MANUFACTURER			AP	6/12/00	00PM 34
		CAPACITY (GALLONS)			Plan Reviewed By	Date	Plan #
		CONSTRUCTION MATERIAL		N/A	This approval shall not be construed to permit the violation of any law, nor does it prevent further corrections of errors found on the plans. Plans must be resubmitted for approval if any additional changes are made by the applicant.		
		THICKNESS (UNITS)			In addition to this approval, all applicable permits required by the local fire department, building department, and the Air Quality Management District must be obtained.		
	CORROSION PROTECTION						
TYPE OF LEAK DETECTION FOR USTs (LIQUID, PROBE, ETC.)			N/A				
MANUFACTURER OF LEAK DETECTOR							
PIPING	LOCATION (UNDER/ABOVE GROUND)		Underground	Underground tank installation, removal, and repair inspections are required and must be scheduled 48 hours in advance. Contact (714) 667-3800 for an appointment.			
	SUCTION/PRESSURE GRAVITY/UNKNOWN		gravity	A copy of these approved plans must be available at the site at all times.			
	PRIMARY	CONSTRUCTION MATERIAL	Steel				
		MANUFACTURER	N/A				
	SECONDARY	CONSTRUCTION MATERIAL	N/A				
		MANUFACTURER					
	TYPE OF LEAK DETECTION FOR PIPING (PRESSURE LOSS DEVICE, ETC.)		None				
	MANUFACTURER OF LEAK DETECTOR		None				
OVERFILL PROTECTION (TYPE)			N/A	All piping associated with underground storage tanks shall be removed and properly disposed			
PILL CONTAINMENT (TYPE)			N/A				





**COUNTY OF ORANGE  
HEALTH CARE AGENCY**

**TOM URAM**  
DIRECTOR

**HUGH F. STALLWORTH, M.D.**  
HEALTH OFFICER

**JACK MILLER, REHS**  
DEPUTY DIRECTOR

MAILING ADDRESS:  
2009 EAST EDINGER AVENUE  
SANTA ANA, CA 92705-4720

TELEPHONE: (714) 667-3000  
FAX: (714) 972-0743

**PUBLIC HEALTH  
DIVISION OF ENVIRONMENTAL HEALTH**

March 18, 1998

LT. Hope Katcharian  
Director, Environmental Engineering Division  
Commanding General  
AC/S Environmental 1AU  
Marine Corps Air Station El Toro  
P.O. Box 95001  
Santa Ana, CA 92709-5001

Subject: **Completion of Tank Removal Project**

RE: **Marine Corps Air Station El Toro  
Tanks #324A, 324B, 324C, 324D, and 324F  
Santa Ana, CA 92709**

Dear Lt. Katcharian:

This is in response to your request for a confirmation of the completion of the tank removal project. With the provision that the results for the soil samples obtained during the tank removal on September 24 and 29, 1997, were accurate and representative of existing conditions, it is the position of this office that no significant soil contamination has occurred at the above noted facility location.

It should be pointed out that this letter does not relieve you of any responsibilities mandated under the California Health and Safety Code if additional or previously unidentified contamination is discovered at the subject site.

If you have any questions regarding this matter, please contact Arghavan Rashidi-Fard at (714) 667-3713.

Sincerely,

William J. Dickmann, M.S., REHS  
Supervising Hazardous Waste Specialist  
Hazardous Materials Management Section  
Environmental Health Division

cc: **Larry Vitale, Santa Ana Regional Water Quality Control Board**

March 18, 1998

Contracting Officer  
Naval Facilities Engineering Command, Southwest Division  
Mr. Dave Jespersion 57 CS1.DJ  
Building 131, 1220 Pacific Highway  
San Diego, California 92132-5187

**Attn: Ms. Lynn Marie Hornecker, Code 56MC.LMH**

**Re: Tank Removal and Site Closure Report  
Underground Storage Tank (USTs) 326A and 326B  
at Marine Corps Air Station El Toro, California  
SWDIV Contract No. N68711-93-D-1459  
DCN SW 4631, Delivery Order No. 70**

This Tank Closure Report summarizes the field activities conducted and associated with the closure of two underground storage tanks (USTs) designated as UST 326A and UST 326B at Marine Corps Air Station, El Toro, California (hereinafter referred to as "the Station"). The location of the Station is shown on Figure 1-1, Facility Location Map.

USTs 326A and 326B were located in the south quadrant of the Station, west of Agua Chinon Wash. Both USTs were approximately 5 feet east of existing Building 326, Storage House and used for storage of JP-5. The UST locations are shown on Figure 1-2.

UST 326B is identified as Solid Waste Management Unit (SWMU) 283 in the Resource Conservation and Recovery Act Facility Assessment (RFA) report (Jacobs Engineering Group Inc. [JEG], 1993.)

As part of the RFA field work, one vertical soil boring was drilled by JEG in close proximity of UST 326B to a total depth of 25 feet below ground surface (bgs). No Petroleum hydrocarbons were detected in any of the six soil samples collected during the drilling of the boring. JEG recommended "No Further Action" for SWMU 283 (JEG 1993). Copies of the RFA report analytical data and sample location map are included in Appendix A, RFA Background Information.

#### **Summary of Field Activities**

Field activities were conducted in accordance with the approved *Draft Work Plan, Remediation of Various Underground Tanks at the Marine Corps Air Station El Toro, California, OHM 1995*. Details of the USTs 326A and 326B are described in the Tank Closure Summary Sheet provided as Appendix B.

### **Permitting and Utility Investigation**

Prior to initiating field activities, OHM completed an Orange County Health Care Agency (OCHCA) Facility Modification Application and received approval (Plan Check No. 97-069) for the removal of USTs 326A and 326B. The OCHCA Facility Modification Application and approval form is provided as Appendix C.

A geophysical survey of the UST 326 site was conducted by OHM subcontractor, Geovision Geophysical Services Inc., to locate the underground utilities in the area. The Geophysical Survey report is provided in Appendix D.

### **UST Gauging, Removal, and Disposal**

USTs 326A and 326B were identified as a 1,700-gallon, concrete UST and a 250-gallon, steel UST, respectively. On October 10, 1997 OHM initiated the initial excavation and exposure of the UST area. After exposure of the top of the UST area, it was discovered that there were two precast concrete vaults side by side. The first concrete vault had some product in it and the second concrete vault had a steel UST that was used as a sump/oil water separator. UST 326B also had some sludge in it. Both concrete vaults were inspected in place and no visible damage was evident. Approximately 270 gallons of liquid product was pumped from both the USTs 326A and 326B vaults. Figure 1-3 shows the schematic of USTs 326A and 326B.

On October 16, 1997, UST 326B was removed from the concrete vault and transported to the Station's central treatment facility (CTF) compound (operated and maintained by OHM under a different phase of the contract) for decontamination using steam water and Alconox detergent. The entire product and vent piping between the USTs 326A and 326B was cut and cement-grouted within the excavation boundary with the concurrence of an OCHCA field inspector. The bottom of concrete vault for UST 326B was at an approximate depth of 12 ½ feet bgs. The bottom of UST 326A vault was at an approximate depth of 9 feet bgs.

After the removal of the steel UST 326B and cleaning of the two vaults, OHM requested permission from the OCHCA field inspector for in-place closure of the precast concrete vaults. At the direction of an OCHCA field inspector, on October 17, 1997 both precast concrete vaults were filled with water and left for 3 days to verify the integrity of the concrete vaults and to check if there were any cracks.

On October 20, 1997, the OCHCA field inspector, Station's Resident Office In Charge of Construction (ROICC) and OHM superintendent visited the 326 site and observed that the water level remained the same and hence there were no leaks in the vaults. Therefore, OCHCA field inspector approved OHM's request to leave the vaults in-place and fill them with 3-inch rock to 2 feet bgs, followed by geotextile fabric, followed by ½-inch base rock to grade.

### **UST Content Sampling, Analysis, and Results**

Per OCHCA field inspector approval, no confirmation soil samples were collected and analyzed. Certified laboratory analytical reports for the content products provided by Applied Physics and Chemistry Laboratory are included in Appendix E, Certified Laboratory Analytical Reports. Photographs of the field activities are provided in Appendix F, Site Activity Photographs.

### **Waste Management**

On October 8, 1997, approximately 220 gallons of liquid was pumped from the two concrete vaults and 50 gallons of sludge from the UST 326B. The liquid content was sampled and the liquid was identified as water with diesel fuel and a range of petroleum hydrocarbons. The liquid from the concrete vaults was transported to the Station's Defense Reutilization and Marketing Office (DRMO) yard for recycling.

One 55-gallon drum containing UST 326B sludge was sampled and disposed off-site as non-RCRA waste to the Chemical Waste Management Facility in Kettleman City. A copy of the waste profile and manifest are included in Appendix G, Waste Profile and Manifest. During exposure of the tanks, two cubic yards of concrete and ¼ ton of steel rebar were removed and transferred to the Station's CTF compound for recycling.

UST 326B was decontaminated using steam water and Alconox detergent. UST 326B was tested to verify the absence of flammable vapors and then transported to Station's CTF compound. UST 326B was certified "clean" by a Marine Chemist prior to transportation to the Station's DRMO yard for recycling. The Marine Chemist Certification and the DRMO receipt are provided as Appendix H.

Approximately 2,500 gallons of rinse water was generated from triple-rinsing the UST 326B, cleaning of the vaults, and vault leak test. Rinse water was then transferred to the CTF compound for treatment through the carbon adsorption system (operated and maintained under another phase of this contract). The treated water was then transferred to the El Toro Golf Course holding tank for re-use.

### **Land Surveying**

After exposure of concrete vaults, a California-registered land surveyor from Cal Vada Surveying, Inc surveyed the excavation limits. The land surveying data for USTs 326A and 326B are presented in Appendix I, Land Survey Data.

### **Site Restoration**

Following the direction of the OCHCA field inspector and with the concurrence of the Station ROICC, the concrete vaults were backfilled in place. On October 22, 1997, OHM initiated the backfilling activities using 3-inch rock from bottom to 2 feet bgs, followed by geotextile fabric, followed by ½-inch base rock to finish grade. The site was restored to original grade. Compaction tests were not performed based on the nature of the materials used for backfill.

A Final Site Inspection was conducted and approved on October 29, 1997 by the Station ROICC and the Building 326 tenant. A copy of the Final Site Inspection Record is included in Appendix J.

### Conclusions and Recommendation

Based on the information presented in this report, the following conclusions are reached:

- UST 326B was removed and recycled.
- Post-inspection of the UST vaults showed no deterioration in the structures and the water leak test confirmed the integrity of the pre-cast concrete vaults.
- There was no evidence of spillage or areas of heavy stains observed in and around the excavation.
- There was no groundwater encountered in the excavation. The depth to groundwater is estimated to be approximately 103 feet bgs.
- The concrete vaults were backfilled in place as approved by the OCHCA field inspector.

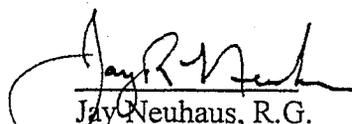
Based on the information provided in this report, OHM, on behalf of the Station, recommends that a "No Further Action" status be granted by OCHCA for UST 326A and UST 326B (also known as SWMU 283).

Should you have any questions or comments, please feel free to contact the undersigned at (714) 263-1146.

Sincerely,  
OHM Remediation Services Corporation



Dhananjay Rawal  
Project Engineer

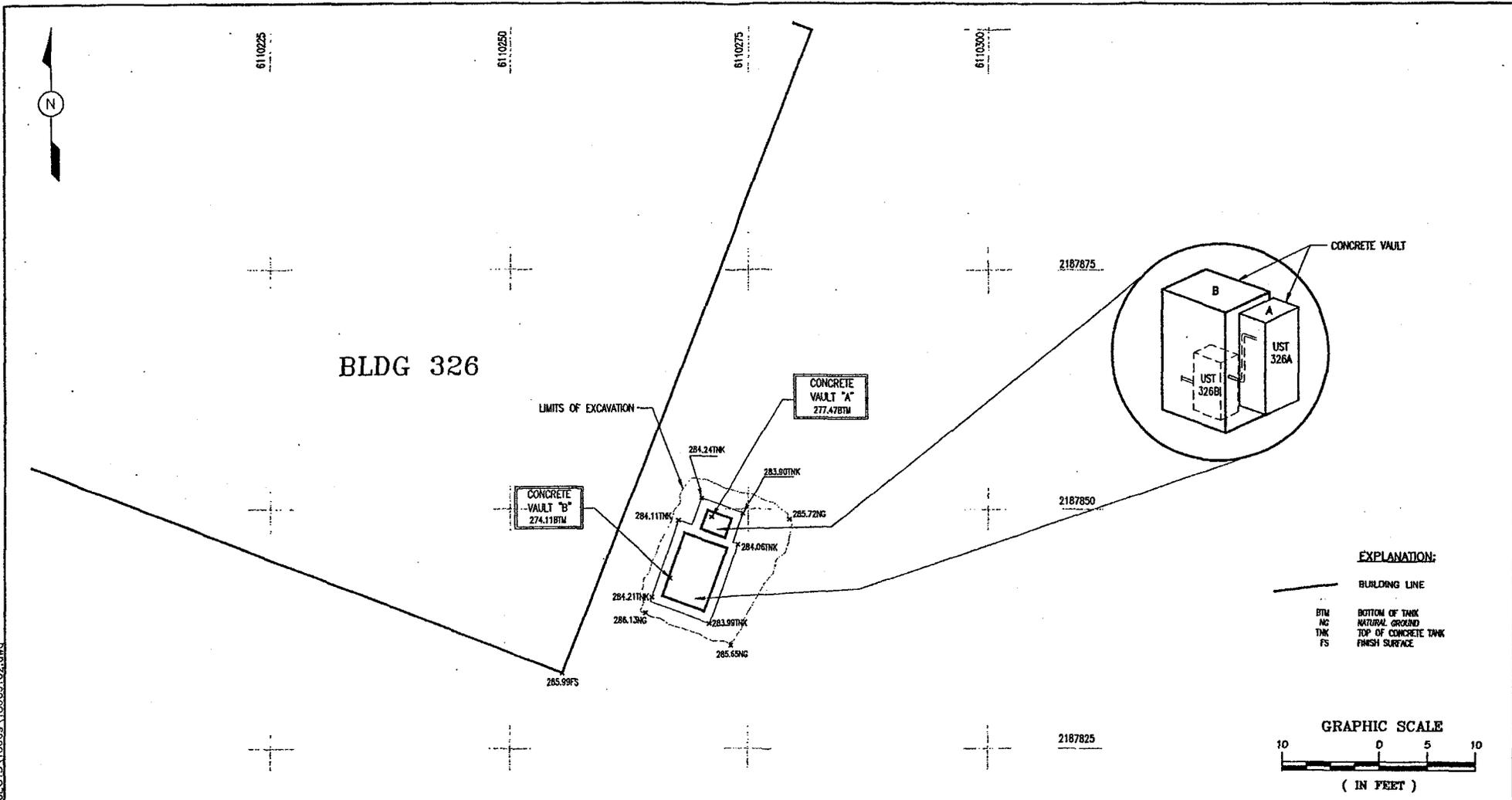


Jay Neuhaus, R.G.  
Project Manager

### Attachments:

- Appendix A RFA Background Information
- Appendix B Tank Closure Summary Sheet
- Appendix C OCHCA Facility Modification Application
- Appendix D Geophysical Survey Data
- Appendix E Laboratory Analytical Reports
- Appendix F Site Activity Photographs
- Appendix G Waste Profile and Manifest
- Appendix H Marine Chemist Certification and Tank Refuse Disposal Receipt
- Appendix I Land Survey Data
- Appendix J Final Site Inspection Record

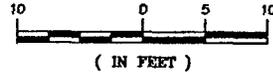
11/11/1998 - 18:45:48 G:\PROJECTS\18609\18609102.dwg



**EXPLANATION:**

- BUILDING LINE
- LIMITS OF EXCAVATION
- BTM BOTTOM OF TANK
- NG NATURAL GROUND
- TNK TOP OF CONCRETE TANK
- FS FINISH SURFACE

**GRAPHIC SCALE**

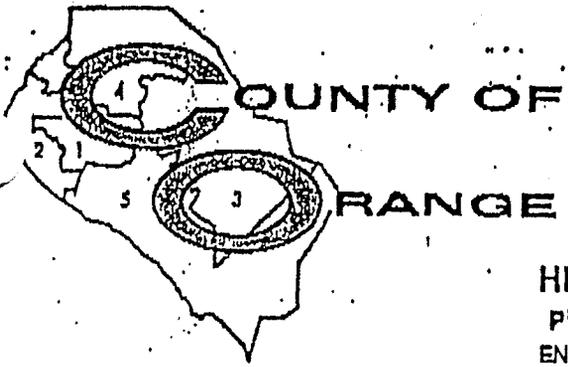


**SAMPLE COORDINATE LISTING**

DESCRIPTION	NORTHING	EASTING	ELEV.
226-SRD1	2194161.3850	6108615.5786	300.67
226-SRD2	2194160.0840	6108611.7491	300.63

REV. No.	DESCRIPTION	DATE	APPROVED
01	97102-38.DWG BY CALVADA	10/22/97	
02	OHM DRAWING 18609102.DWG BY R. PIRMORADIAN	02/11/98	

CONTRACT NAME <b>SWDIV</b>		<b>OHM Remediation Services Corp.</b> <small>A Subsidiary of OHM Corporation SAN DIEGO, CA</small>	
DESIGNED BY <b>R. PIRMORADIAN</b>	DATE <b>02/11/98</b>	<b>SCHEMATIC PLAN</b> <b>UST SITES 326A AND 326B</b>  <b>MARINE CORPS AIR STATION</b> <b>EL TORO, CALIFORNIA</b>	
CHECKED BY <b>DR</b>	DATE <b>3/1/98</b>		
APPROVED BY	DATE		
PROJECT MANAGER		AUTOCAD FILE No. <b>18609102.DWG</b>	OHM PROJECT No. <b>18609</b>
SCALE AS NOTED	SHEET <b>1</b>	OF <b>1</b>	DOCUMENT CONTROL No. <b>SW4631</b>
		DRAWING No. <b>FIG 1-3</b>	



TOM URAM  
DIRECTOR  
HUGH F. STALLWORTH, M.D.  
HEALTH OFFICER  
ENVIRONMENTAL HEALTH DIVISION  
ROBERT E. MERRYMAN, REHS, MPH  
DEPUTY DIRECTOR

HEALTH CARE AGENCY  
PUBLIC HEALTH SERVICES  
ENVIRONMENTAL HEALTH DIVISION  
2009 E. EDINGER AVENUE  
SANTA ANA, CALIFORNIA 92705  
(714) 687-3700

PC # 97-069 (1)

FACILITY MODIFICATION  
APPLICATION  
(INSTALLATION/REMOVAL/REPAIR)  
(COMPLETE PAGES 1 & 2)

DATE: 3/25/97

**FACILITY INFORMATION**

NAME: MARINE CORPS AIR STATION ELTORO  
STREET ADDRESS: P O Box 95001  
CITY: SANTA ANA CA 92709  
TOTAL NUMBER OF TANKS (AFTER INSTALLATION/REMOVAL)  
AT THIS LOCATION: 0

**TYPE OF BUSINESS:**

- GASOLINE STATION
- GOVERNMENT
- FARM
- OTHER

LINK OWNER NAME (CORP., INDIVIDUAL, PUBLIC AGENCY):

MCAS ELTORO M/C ENV. & SAFETY  
STREET ADDRESS: P O Box 95001  
CITY: SANTA ANA  
STATE: CA ZIP: 92709-5001  
TELEPHONE NO: 714-726-6607

**BILLING ADDRESS INFORMATION**

BILL TO NAME: OHM REMEDIATION SERVICES  
BILL TO ADDRESS: 2031 MAIN STREET  
CITY: IRVINE  
STATE: CA ZIP: 92714  
TELEPHONE NO.: 714-263-1146

NOTES: NEW INSTALLATIONS, CLOSURES, REPAIRS AND SYSTEM MODIFICATIONS OF UNDERGROUND STORAGE TANKS REQUIRE THE SUBMITTAL OF (4) SETS OF PLANS TO THIS DIVISION. THESE PLANS MUST BE APPROVED PRIOR TO THE INITIATION OF ANY CONSTRUCTION OR MODIFICATION. ALL PLANS OR REPORTS REQUIRED MUST ACCOMPANY THIS FORM AT THE TIME OF SUBMITTAL.

PLAN APPROVAL AND FEES ARE VALID FOR ONE YEAR. IF TANKS HAVE NOT BEEN REMOVED, INSTALLED OR MODIFIED WITHIN ONE YEAR OF THE APPROVAL DATE, NEW PLANS AND FEES MUST BE SUBMITTED.

**TYPE OF CONSTRUCTION**

INDICATE NO. OF TANK(S) BEING  
REMOVED/REPAIRED/INSTALLED BELOW: (COMPLETE  
PAGE 2 - INDICATING THE TANKS TO BE  
INSTALLED/REMOVED, OR AFFECTED BY THE REPAIR)

- INSTALLATION(S)
- REPAIR(S)/RELINING(S) TO USTs
- CLOSURE(S)/REMOVAL(S)
- SYSTEM MODIFICATION (E.G. REPIPE, REPAIR TO PIPING)
- OTHER (SPECIFY) \_\_\_\_\_

**24 HOUR EMERGENCY CONTACT PERSON**

DAYS: SCOTT KEHE 714-726-2506  
NAME TELEPHONE  
NIGHTS: OHM - 1-800-537-9540 (241)  
ELTORO - 714-726-9911/2172  
NAME TELEPHONE

**APPLICANT**

NAME: DHANANJAY RAWAL  
PLEASE PRINT

SIGNATURE: [Signature]  
COMPANY NAME: OHM REMEDIATION SERVC  
TELEPHONE NO.: 714-263-9124 x 203

**FACILITY OPERATOR (CONTACT PERSON)**

NAME: LJ HOPE KATHARIAN, M/CASENV  
BUSINESS TELEPHONE NO.: 714-726-3386

**OFFICE USE ONLY**

PLAN CHECK NO.: \_\_\_\_\_ FEES PAID: \_\_\_\_\_ RCVD. BY: \_\_\_\_\_  
PLAN APPROVAL DATE: \_\_\_\_\_ BY: \_\_\_\_\_  
NUMBER OF TANKS TO RECEIVE A SURCHARGE BILL: \_\_\_\_\_ NUMBER OF TANKS TO BE ADDED TO BILLING: \_\_\_\_\_

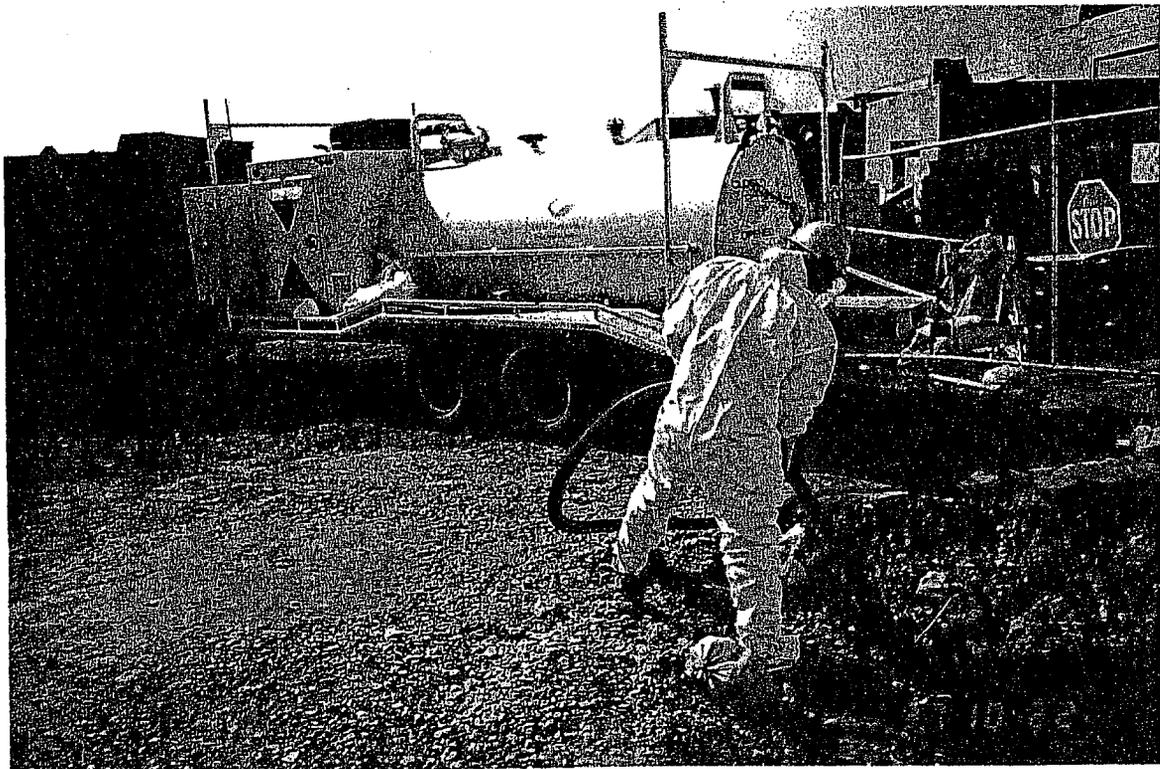
### TANK INFORMATION

PROVIDE THE INFORMATION BELOW FOR ALL TANKS AND PIPING SYSTEMS TO BE INSTALLED, REMOVED OR REPAIRED. ALSO INDICATE UPGRADE/CHANGES TO BE MADE TO EACH TANK SYSTEM.

TANK I.D.		651-6#1	651-7#2	326A#3	326B#4	
MATERIAL STORED	CURRENTLY	Motor oil	Motor oil	JP-5	JP-5	
	PROPOSED	None	None	None	None	
	PREVIOUSLY	Unknown	Unknown	Unknown	Unknown	
FUEL TYPE, I.E., UNLEADED		N/A	N/A	N/A	N/A	
TYPE (TANK, SUMP, OTHERS)		TANK	TANK	TANK <sup>2</sup> <sub>OUTS</sub>	TANK	
DOUBLE WALL/SINGLE WALL		N/A	N/A	N/A	N/A	
UL NUMBER		N/A	N/A	N/A	N/A	
YEAR INSTALLED		1971	1971	1945	1945	
VAULTED/NOT VAULTED		N/A	N/A	N/A	N/A	
PIPING	PRIMARY	MANUFACTURER	N/A	N/A	N/A	N/A
		CAPACITY (GALLONS)	500	500	1,700	250
		CONSTRUCTION MATERIAL	Steel	Steel	Concrete	Steel
		THICKNESS (UNITS)	N/A			
	SECONDARY	MANUFACTURER		NA	NA	NA
		CAPACITY (GALLONS)	NA	NA	NA	NA
		CONSTRUCTION MATERIAL				
		THICKNESS (UNITS)				
	CORROSION PROTECTION					
	TYPE OF LEAK DETECTION FOR USTs (LIQUID, PROBE, ETC.)		NA	NA	NA	NA
MANUFACTURER OF LEAK DETECTOR						
LOCATION (UNDER/ABOVE GROUND)		Underground				
SUCTION/PRESSURE GRAVITY/UNKNOWN		N/A				
PIPING	PRIMARY	CONSTRUCTION MATERIAL	NA	NA	NA	
	MANUFACTURER					
PIPING	SECONDARY	CONSTRUCTION MATERIAL	NA	NA	NA	
	MANUFACTURER					
TYPE OF LEAK DETECTION FOR PIPING (PRESSURE LOSS DEVICE, ETC.)		NA	NA	NA	NA	
MANUFACTURER OF LEAK DETECTOR						
OVERFILL PROTECTION (TYPE)		NA	NA	NA	NA	
SPILL CONTAINMENT (TYPE)						



Photograph No. 1: Exposure of UST 326A and 326B Concrete Vaults tops.



Photograph No. 2: Pumping of liquid products from the USTs 326A and 326B



# California Regional Water Quality Control Board

## Santa Ana Region



Winston H. Hickox  
Secretary for  
Environmental  
Protection

Internet Address: <http://www.swrcb.ca.gov/~rwqcb8>  
3737 Main Street, Suite 500, Riverside, California 92501-3339  
Phone (909) 782-4130 • FAX (909) 781-6288

Gray Davis  
Governor

April 7, 1999

Mr. Wayne D. Lee  
Assistant Chief of Staff  
Environment and Safety  
Marine Corps Air Station El Toro  
P. O. Box 95001  
Santa Ana CA 92709-5001

### ADDENDUM TO SITE ASSESSMENT REPORT, OIL/WATER SEPARATOR SITES 324-1 AND 324-2, MARINE CORPS AIR STATION, EL TORO

Dear Mr. Lee:

We have completed our review of the above report dated June 8, 1998. The investigation described in the addendum was completed in response to our April 9, 1998 letter, which requested the collection of soil samples near the oil/water separators in order to determine if releases had occurred. Based on the information provided in this addendum and the previous report, we do not require any further action and concur with your request to close these units.

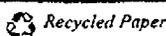
If you should have any questions please call me at (909) 782-4498.

Sincerely,

Patricia A. Hannon  
DoD Section

cc: Dept. of Toxic Substances Control - Tayseer Mahmoud  
Kutak Rock, Attorneys - Gregory F. Hurley  
Marine Corps Air Station El Toro - Capt. Jeff Matthews  
Naval Facility Engineering Command, SWDIV - Lynn Hornecker  
Orange County Hall of Administration - Courtney Wiercioch  
State Water Resources Control Board - John Adams  
U. S. EPA, Region IX - Glenn Kistner

*California Environmental Protection Agency*



# Department of Toxic Substances Control

Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 90630

Winston H. Hickox  
Secretary for  
Environmental  
Protection



Gray Davis  
Governor

August 20, 1999

Mr. Dean Gould  
BRAC Environmental Coordinator  
U.S. Marine Corps Air Station - El Toro  
P. O. Box 51718  
Irvine, California 92619-1718

## SUMMARY REPORT FOR AERIAL PHOTOGRAPH ANOMALY (APHO) 17, MARINE CORPS AIR STATION (MCAS) EI TORO

Dear Mr. Gould:

The Department of Toxic Substances Control (DTSC) has reviewed the above report dated July 9, 1999 and the Addendum inspection checklist dated July 20, 1999. The Report presents the results of the record search activities and a visual inspection of the APHO 17 (Also known as Science Applications International Corporation (SAIC) 139). The anomaly is described as stains in the vicinity of Building 325, between S 14<sup>th</sup> Street and R Street within the boundary of IRP Site 24. APHO 17 was identified on an aerial photograph dated 1964, and the surface area of the anomaly is approximately 350 feet long by 250 feet wide.

The report recommends a no further action status for APHO 17 based on evaluation of historical aerial photographs, Station maps and plans, Station property records, environmental program management plans, the results of previous environmental restoration program investigations, and visual site inspections conducted in June and July 1999.

DTSC concurs with the proposed no further action status designation for the APHO 17. The no further action status can be documented in the next BRAC Cleanup Plan updated. If you have any questions, please contact me at (714) 484-5418.

Sincerely,

A handwritten signature in black ink, appearing to read "Tayseer Mahmoud".

Tayseer Mahmoud  
Remedial Project Manager  
Southern California Operations  
Office of Military Facilities

cc: See next page

Mr. Dean Gould  
August 20, 1999  
Page 2

cc: Mr. Glenn Kistner, SFD-8-2  
Remedial Project Manager  
U. S. Environmental Protection Agency  
Region IX, Superfund Division  
75 Hawthorne Street  
San Francisco, California 94105-3901

Ms. Patricia Hannon  
Remedial Project Manager  
California Regional Water Quality Control Board  
Santa Ana Region  
3737 Main Street, Suite 500  
Riverside, California 92501-3339

Mr. Gregory F. Hurley  
Restoration Advisory Board Co-chair  
620 Newport Center Drive, Suite 450  
Newport Beach, California 92660-8019

Ms. Polin Modanlou  
MCAS El Toro Local Redevelopment Authority  
10 Civic Center Plaza, 2<sup>nd</sup> Floor  
Santa Ana, California 92703

Ms. Lynn Hornecker  
Remedial Project Manager  
Naval Facilities Engineering Command  
Southwest Division - Code 5BME.LH  
1220 Pacific Highway  
San Diego, California 92132-5187



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

October 6, 1999

Mr. Dean Gould  
BRAC Environmental Coordinator  
MCAS El Toro  
P. O. Box 51718  
Irvine, CA 92619-1718

Re: Department of Navy (DoN) No Further Action Recommendations for Seventeen (17)  
Aerial Photograph Anomaly (APHO) Sites at MCAS El Toro, CA

Dear Mr. Gould:

The United States Environmental Protection Agency (EPA) has received your letter of September 10, 1999, with the 17 APHO sites referenced above. EPA concurs with the DoN and with the State of California Department of Toxic Substances Control that no further action is necessary at those sites. We appreciate the opportunity to participate in this evaluation process.

Sincerely,

A handwritten signature in cursive script that reads "Glenn Kistner".

Glenn Kistner  
Remedial Project Manager  
Federal Facilities Cleanup Branch

cc: Alice Gimeno, DTSC  
Patricia Hannon, RWQCB  
Gregory Hurley, RAB Co -Chair  
Polin Modanlou, LRA  
Lynn Hornecker, SWDIV



**ston H. Hickox**  
 Secretary for  
 Environmental  
 Protection

# California Regional Water Quality Control Board

## Santa Ana Region



**Gray Davis**  
 Governor

Internet Address: <http://www.swrcb.ca.gov/~rwqcb8>  
 3737 Main Street, Suite 500, Riverside, California 92501-3339  
 Phone (909) 782-4130 ~ FAX (909) 781-6288

October 6, 1999

Mr. Dean Gould  
 BRAC Environmental Coordinator  
 Mail Code 05BM  
 Naval Facility Engineering Command, SWDIV  
 1220 Pacific Highway  
 San Diego, CA 92132-5190

**REPORTS ON AERIAL PHOTOGRAPH ANOMALY SITES - APHO 4, STABLE AREA ANOMALIES, APHO 19, APHO 33, APHO 28, APHO 9, APHO 35, APHO 17 AT MARINE CORPS AIR STATION, EL TORO**

Dear Mr. Gould:

We have completed our review of the reports for the above sites.

Report Date	Site	Report Date	Site
July 9, 1999	APHO 17	July 28, 1999	APHO 4, APHO 33
July 20, 1999	Stable Area Anomalies	August 24, 1999	APHO 28
July 23, 1999	APHO 19	August 31, 1999	APHO 9, APHO 35

We concur with your request for no further action for these aerial photograph anomaly sites. If you should have any questions, please call me at (909) 782-4498.

Sincerely,

Patricia A. Hannon  
 DoD Section

cc: Dept. of Toxic Substances Control - Alice Gimeno  
 Naval Facility Engineering Command, SWDIV - Lynn Hornecker  
 U. S. EPA, Region IX - Glenn Kistner  
 Kutak Rock, Attorneys - Gregory F. Hurley  
 Orange County Hall of Administration - Polin Modanlou

BRAC OFFICE

OCT 12 1 32 AM '99

California Environmental Protection Agency



Recycled Paper

Comprehensive Long-Term Environmental Action Navy (CLEAN) II  
Contract No. N62742-94-D-0048  
Contract Task Order No. 0068

**EXTRACTS**

Progress Report

**Vadose Zone Remediation  
Volatile Organic Compound  
Source Area  
Installation Restoration  
Program Site 24  
Marine Corps Air Station, El Toro**

Prepared for

Department of the Navy  
Commander, Pacific Division  
Naval Facilities Engineering Command  
San Diego, California 92132-5190

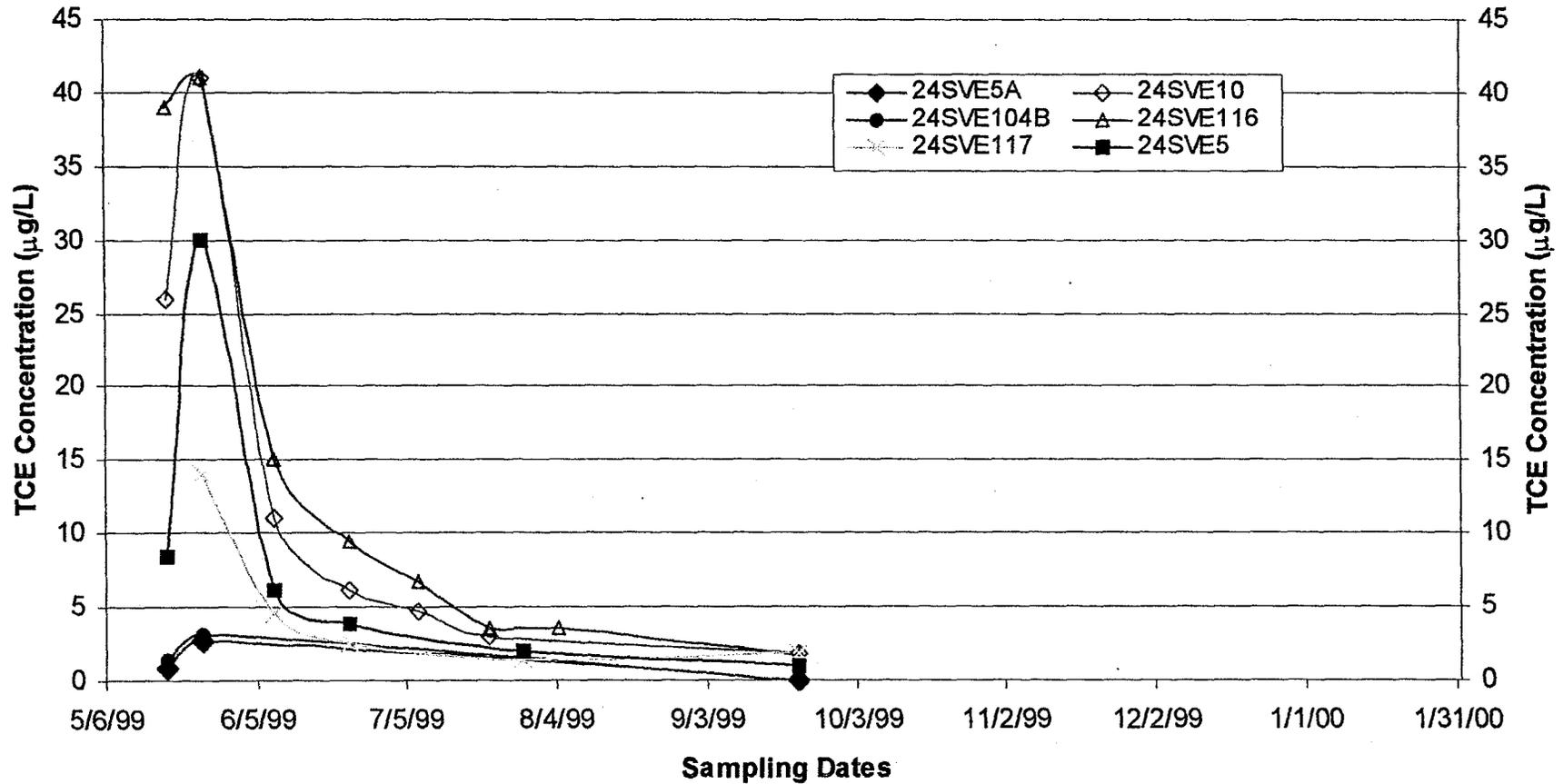
Prepared by

EARTH TECH, Inc.  
700 Bishop Street, Suite 900  
Honolulu, Hawaii 96813

February 2000

NOTE: ANNOTATIONS MADE BY THE  
WRITER OF THE PCB A2 REPORT  
ARE IDENTIFIED WITH AN ARROW OR  
A STAR SYMBOL: ☆

earthtech for the planet.  
engineering and technology

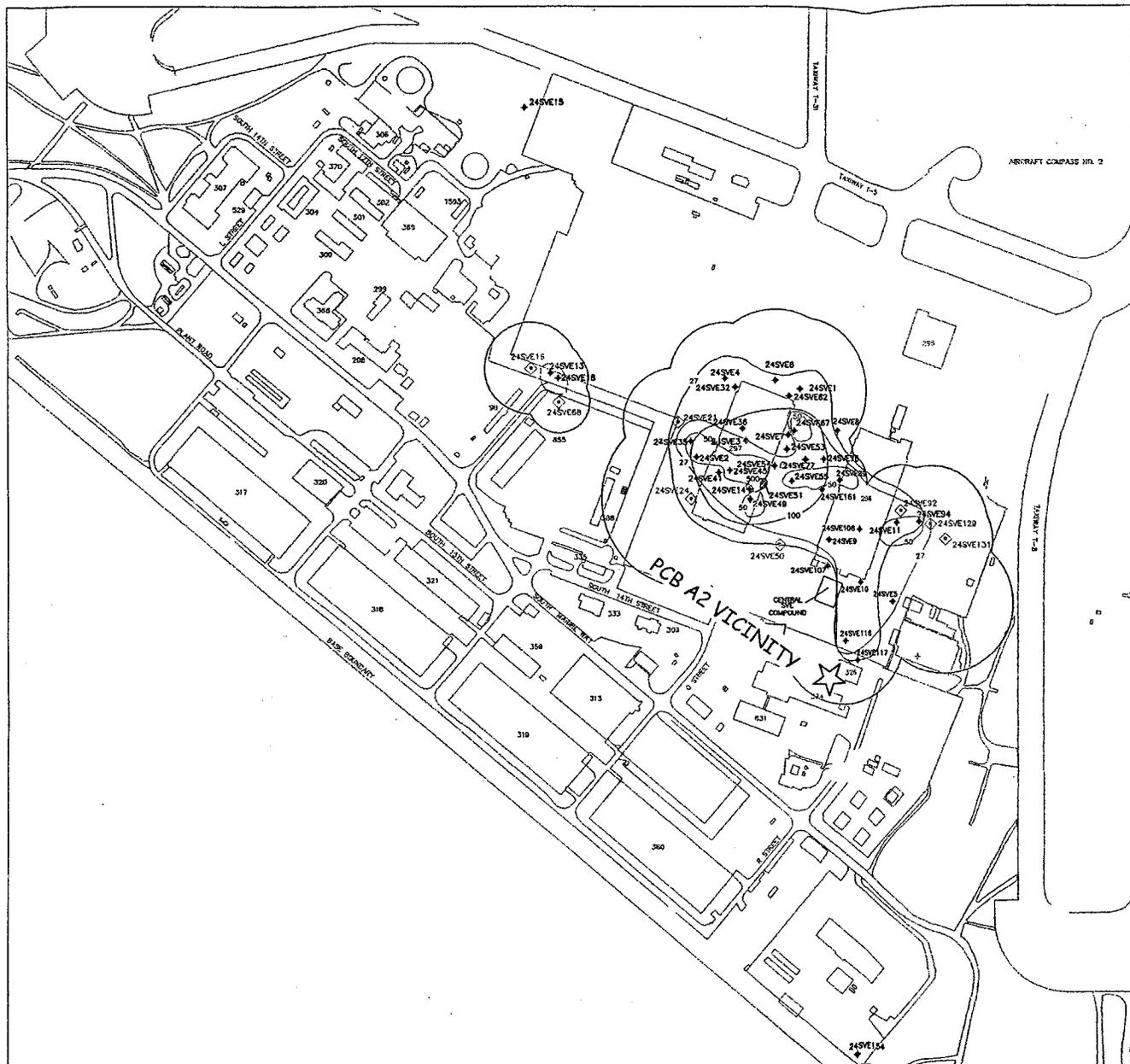
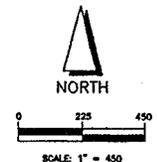


Progress Report - February 2000		
Extracted Vapor Concentrations from SVE Wells - Group I Site 24 - Vadose Zone Remediation		
Date: 2-00	MCAS, El Toro	Figure
Project No. 29307	EARTH  TECH	2-1
A <b>tyco</b> INTERNATIONAL LTD. COMPANY		

PRIMARY SOURCE OF MAP INFORMATION  
DRAFT FINAL ENGINEERING  
DESIGN REPORT (BECHTEL)

EXPLANATION

- 24SVE1  SOIL VAPOR EXTRACTION WELL
-  ADDITIONAL SOIL VAPOR EXTRACTION WELL  
INSTALLED DECEMBER 1999/JANUARY 2000
- 27 — CONTOUR LINE OF TCE  
SOIL GAS CONCENTRATION IN  $\mu\text{G/L}$   
MAY 1999
- 27 — CONTOUR LINE OF TCE BASELINE SAMPLE  
CONCENTRATION IN  $\mu\text{G/L}$
-  EROI BOUNDARY



Progress Report - February 2000		
<b>Deep Zone Baseline TCE Concentrations vs EROI and Proposed Well Locations Site 24 - Vadose Zone Remediation</b>		
Date: 2-00	MCAS, El Toro	
Project No. 29307		Figure 2-20
A BECHTEL INTERNATIONAL LTD. COMPANY		

**Table A-1: Phase I SVE Well Installation Summary**

Well Number	Date Installed	Total Depth (feet bgs)	Well Diameter (inches)	Screen Interval (feet bgs)	Depth Zone	Primary Purpose /Remarks
24SVE138A	5/7/99	71.2	2	45-70	Intermediate	Monitoring well for 24SVE12.
24SVE147A	5/7/99	77.75	2	57-77	Intermediate	Monitoring well for 24SVE12.
→ 24SVE 117	5/11/99	105	4	73-98	Deep	Monitoring well for 24SVE116 and evaluation of the extent of contamination to the southeast of 24SVE116.
24SVE 128B	5/17/99	41	4	15-40	Shallow	Extraction well and evaluation of shallow contamination to the east of hangar 296.
24SVE67B	5/13/99	104	2	17-32	Shallow	Monitor extraction at 24SVE1 and 24SVE7.
24SVE67			2	75-100	Deep	
24SVE32B	6/17/99	105	4	20-40	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE3 and SVE4.
24SVE32			2	77-102	Deep	
24SVE35B	6/10/99	105	2	15-35	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE2; plume delineation.
24SVE35A			2	50-75	Intermediate	
24SVE35			2	85-105	Deep	
24SVE36B	6/29/99	105	2	15-40	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE2, SVE3, SVE14, and SVE45.
24SVE36A			2	45-65	Intermediate	
24SVE36			2	80-100	Deep	
24SVE41B	6/24/99	105	4	20-40	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE14 and SVE45; plume delineation.
24SVE41A			2	55-75	Intermediate	
24SVE41			2	85-105	Deep	
24SVE45B	6/25/99	105	2	20-40	Shallow	Extraction
24SVE45A			2	50-70	Intermediate	
24SVE45			2	80-100	Deep	
24SVE49B	6/23/99	105	4	18-33	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE14; plume delineation.
24SVE49A			2	45-65	Intermediate	
24SVE49			2	83-103	Deep	
24SVE51B	6/22/99	105	2	18-33	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE14 and SVE54; plume delineation.
24SVE51A			2	49-69	Intermediate	
24SVE51			2	83-103	Deep	
24SVE53B	6/14/99	105	2	15-35	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE3, SVE7, SVE54, and SVE77; plume delineation.
24SVE53A			2	45-65	Intermediate	
24SVE53			2	73-88	Deep	
24SVE55B	6/18/99	105	2	15-30	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE14, SVE54, SVE77, and SVE161.
24SVE55A			2	40-70	Intermediate	
24SVE55			2	80-100	Deep	
24SVE62B	6/30/99	105	2	15-40	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE1.
24SVE62			2	80-105	Deep	
24SVE77B	6/15/99	105	2	18-33	Shallow	Extraction
24SVE77A			2	39-54	Intermediate	
24SVE77			2	75-100	Deep	
24SVE89B	6/9/99	105	2	15-35	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE161.
24SVE89A			2	50-75	Intermediate	
24SVE89			2	80-105	Deep	
24SVE94B	6/4/99	105	2	25-45	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE11; plume delineation.
24SVE94A			2	50-70	Intermediate	
24SVE94			2	75-105	Deep	
24SVE106B	6/8/99	105	2	15-40	Shallow	Concentration and vacuum monitoring; provides EROI data for SVE9, SVE11, and SVE161.
24SVE106A			2	45-65	Intermediate	
24SVE106			2	70-95	Deep	

MARINE CORPS AIR STATION EL TORO  
EL TORO, CALIFORNIA  
INSTALLATION RESTORATION PROGRAM  
REMEDIAL INVESTIGATION/FEASIBILITY STUDY  
FINAL SOIL GAS SURVEY  
TECHNICAL MEMORANDUM  
SITES 24 AND 25

Revision 0

EXTRACTS

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

THROUGH:  
CONTRACT #N68711-89-D-9296  
CTO #145  
DOCUMENT CONTROL NO:  
CLE-C01-01F145-S2-0004

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

In association with:  
International Technology Corporation  
CH2M HILL

*John Dolegowski* 28 Oct '94  
Date

John Dolegowski  
CLEAN Project Manager  
CH2M HILL, Inc.

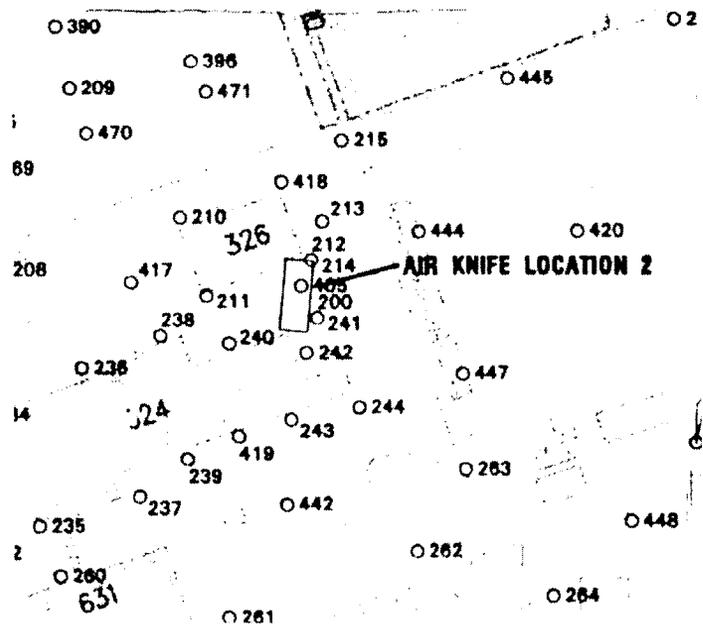
*Michael Bitner*

27 OCT '94

Date

Michael Bitner, R.G.  
CLEAN Technical Reviewer  
CH2M HILL, Inc.

NOTE: ANNOTATIONS MADE BY THE  
WRITER OF THE PCB A2 REPORT  
ARE IDENTIFIED WITH AN ARROW OR  
A STAR SYMBOL: ☆





**Table 4-1**  
**Summary of Possible Halogenated Hydrocarbon Source Areas**  
**MCAS El Toro Soil Gas Survey Technical Memorandum**

Area # (a)	Location (b)	Possible Sources	Analytes and General Concentrations Detected by Media				Round 2 RI Downgradient Groundwater Sampling Results (c)	Recommendations
			Soil Gas	TCE Soil Gas Depth Trend	Soil			
1B-2	Area Northwest of Building 655	Possible 1970 Channelized Drainage; SWMU/AOCs 196 (Wash Rack), 199 (OWS), and 250 (UST)	PCE>5 ug/L-v (greater than 50 ug/L-v at 1 station [highest in Soil Gas Survey]); TCE concentrations; 1,2-DCE concentrations	Concentrations slightly increase with depth	Soil samples collected at Station IDs 24_SG399 and 423; no VOCs were detected.	Wells 10_DGMW77 and 07_DGMW 91: TCE >5 and <50 ug/L; PCE < 5 ug/L; Carbon Tetrachloride < 5 ug/L	Recommend further evaluation of extent with soil gas. Suggest looking at possible link to RI Site 10 and RFA SWMU/AOCs.	
2A-1	Drainage Channel Southeast of Building 296	Drainage from the Tarmac Area Outside the east corner of Building 297 and from Site 7.	Station ID 24_SG245: TCE=79.1 ug/L-v at 15 feet bgs	Only 1 depth sampled.	No soil samples collected	Well 18_PS8: TCE=62.0 D ug/L, PCE=0.6J ug/L, Carbon Tetrachloride=2 ug/L, Chloroform=2 ug/L	Recommend further investigation of horizontal and vertical extent of soil and soil gas along drainage from possible source areas (i.e. Building 296).	
2A-2	Agua Chillon Wash (South Reach)	Drainage from the SW Quadrant of the Station, OWS (SWMU/AOC 188)	24_SG311: TCE=53.1 ug/L-v, PCE=1.6 ug/L-v 24_SG302: TCE=3.2 ug/L-v 24_SG312: 1,1-DCE; TPH; toluene; total xylenes 24_SG278: c-1,2-DCE=1.7 ug/L-v 24_SG308: t-1,2-DCE=up to 3.4 ug/L-v	Only 1 depth sampled.	TPH-gas and diesel detected in RI angle borings 18_ACAB224 and 225. Max. TPH-gas 125 mg/kg; Max. TPH-diesel 2,270 mg/kg.	Well 18_BGMW05D: TCE=56.0 ug/L, PCE=25.0 ug/L, 1,2-DCE=5.0 ug/L, Chloroform=0.6J ug/L	Wash is currently being concrete-lined by the City of Irvine. Recommend further investigation of horizontal and vertical extent of soil and soil gas. Recommend that the integrity of the OWS system/UST be evaluated. If leaking, consider removal of UST.	
2B-1	East End of RI Site 8	RI Site 8 (DRMO Storage Yard); Stratum 1 - East Storage Yard Stratum 2 - West Storage Yard	TCE up to >50 ug/L-v Carbon Tetrachloride > 1 ug/L-v	Concentrations increase with depth	Soil samples collected from 4 locations; no VOCs were detected.	Wells 08_DGMW73 and 08_DGMW74: TCE=50 ug/L, PCE=5 and <50 ug/L, Carbon Tetrachloride >5 ug/L at well 74 and <5 ug/L at well 73.	Because the concentration of TCE in soil gas is increasing with depth, recommend deeper soil gas and soil at RI Site 8. Horizontal extent of soil gas fairly well defined.	
2B-2	Southwest of Site 8 (at southwest border of MCAS El Toro)	Southwest of Site 8 (at southwest border of MCAS El Toro)	VOCs were detected in the 15-foot sample at Station ID 24_SG294: TCE=63 ug/L-v, PCE=1.0 ug/L-v. TCE was detected in the 15-foot samples at Station IDs 24_SG425 (8.0 ug/L-v) and 24_SG292 (3.0 ug/L-v).	Soil gas samples were collected at one depth (15 feet bgs) only.	Nearest soil sample was collected about 100 feet north of the soil gas boring. No VOCs were detected in the soil at this location (Station ID 24_SG425).	18_PS1: TCE=3.0 ug/L RI Site 21: TCE=0.7 to 11.0 ug/L, PCE=ND to 4 ug/L	Only low concentrations of TCE (3-12.6 ug/L-v) and PCE (1.0 ug/L-v) were identified in this area. Site is located at the edge of the Station. Recommend investigating horizontal extent of soil gas on-and off-Station. EPA recommends further investigation.	
3-1	Between RI Site 9 and Building 435	RI Sites 9 and 10; Abandoned Well # 2	TCE=>5 ug/L-v (4 borings: 24_SG011, 012, 400, 413) 1,2-DCE=5 ug/L-v (E edge of Site 9) Xylene=1 ug/L-v (E edge of Site 9)	Concentrations increase with depth	Soil samples collected from one boring only Station ID (24_SG400); no VOCs were detected.	Well 09_DBMW45 at RI Site 9: TCE=2,000 ug/L (highest in RI), PCE=5 ug/L, Carbon Tetrachloride>5 ug/L	Area exhibited increasing TCE soil gas depth trend and a downgradient well had the highest TCE concentration in the RI. Therefore, recommend additional borings and soil gas samples to the water table.	
3-2	Buildings 324 and 326	Bldg. 324 (Former Engine Overhaul Building); Bldg. 326 (Former Engine Test Cell); SWMU/AOC 95 (HWSA).	TCE<5 ug/L-v, Freon 113<10 ug/L-v (generally); TCE>5 ug/L-v in and around Bldg. 326; Freon 113>10 ug/L-v between Bldgs. 324/326; PCE=1-5 ug/L-v at S end of 326/E end of 324; PCE >5 ug/L-v in small area between 324/326; Low EBxylenes between 324/326.	Concentrations generally increase with depth	Soil samples collected at 3 locations around Bldg. 326 and at S side of Bldg. 324; no VOCs were detected.	Well 18_PS8 - Compounds detected include: TCE (50-500 ug/L); PCE (0.5-5 ug/L); Carbon Tetrachloride (0.5-5 ug/L).	The highest concentrations of TCE, PCE, and Freon 113 in this area were found between Buildings 324 and 326. Additional soil gas and soil samples to the water table are recommended.	

NOTE: ANNOTATIONS MADE BY THE  
WRITER OF THE PCB A2 REPORT  
ARE IDENTIFIED WITH AN ARROW OR  
A STAR SYMBOL: ☆

FINAL

EXTRACTS

**GROUNDWATER MONITORING REPORT  
OCTOBER 1997 SAMPLING ROUND**

**GROUNDWATER MONITORING PROGRAM  
FOR  
MARINE CORPS AIR STATION EL TORO  
EL TORO, CALIFORNIA**

Contract No. N68711-96-D-2029  
Delivery Order 005

Prepared for:

**SOUTHWEST DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
1220 Pacific Highway  
San Diego, California 92132**

Prepared by:

**CDM FEDERAL PROGRAMS CORPORATION  
3760 Convoy Street, Suite 210  
San Diego, California 92111**

March 1998

Table B-1: WATER LEVEL MEASUREMENTS AND GROUNDWATER ELEVATIONS  
MCAS El Toro Groundwater Monitoring Program

STATION ID	WELL TYPE	SCREEN INTERVAL (feet BGS)	TOP OF CASING ELEVATION (feet MSL)	MEASUREMENT DATE	DEPTH TO WATER (feet TOC)	WATER LEVEL ELEVATION (feet MSL)	CHANGE FROM PRIOR ELEVATION (+ or - feet)
18 PS5	SH	106 - 126	255.14	12-Jan-96	88.01	167.13	
			255.14	22-Jan-96	88.11	167.03	-0.10
			255.14	28-Feb-96	87.90	167.24	0.21
			255.14	27-Mar-96	87.62	167.52	0.28
			255.14	31-Oct-96	87.89	167.25	-0.27
			255.14	27-Nov-96	88.25	166.89	-0.36
			255.14	26-Dec-96	87.76	167.38	0.49
			255.14	24-Jan-97	87.43	167.71	0.33
			255.14	26-Feb-97	86.90	168.24	0.53
			255.14	27-Mar-97	86.93	168.21	-0.03
			255.14	27-Jun-97	87.22	167.92	-0.29
			255.14	12-Aug-97	87.65	167.49	-0.43
			255.14	24-Sep-97	86.96	168.18	0.69
			255.14	5-Nov-97	87.16	167.98	-0.20
18 PS6	SH	130 - 150	269.09	11-Jan-96	111.45	157.64	
			269.09	26-Jan-96	111.34	157.75	0.11
			269.09	26-Feb-96	110.97	158.12	0.37
			269.09	27-Mar-96	110.70	158.39	0.27
			269.09	1-Nov-96	112.52	156.57	-1.82
			269.09	27-Nov-96	110.80	158.29	1.72
			269.09	26-Dec-96	110.82	158.27	-0.02
			269.09	24-Jan-97	110.31	158.78	0.51
			269.09	27-Feb-97	109.83	159.26	0.48
			269.09	27-Mar-97	110.07	159.02	-0.24
			269.09	26-Jun-97	110.60	158.49	-0.53
			269.09	11-Aug-97	110.70	158.39	-0.10
			269.09	24-Sep-97	110.40	158.69	0.30
			269.09	5-Nov-97	110.26	158.83	0.14
18 PS7	SH	106 - 126	260.00	11-Jan-96	88.10	171.90	
			260.00	22-Jan-96	87.28	172.72	0.82
			260.00	28-Feb-96	87.06	172.94	0.22
			260.00	27-Mar-96	86.85	173.15	0.21
			260.00	31-Oct-96	87.11	172.89	-0.26
			260.00	27-Nov-96	87.75	172.25	-0.64
			260.00	26-Dec-96	86.98	173.02	0.77
			260.00	24-Jan-97	86.66	173.34	0.32
			260.00	26-Feb-97	86.38	173.62	0.28
			260.00	27-Mar-97	86.22	173.78	0.16
			260.00	27-Jun-97	86.50	173.50	-0.28
			260.00	12-Aug-97	86.60	173.40	-0.22
			260.00	24-Sep-97	86.28	173.72	-0.06
			260.00	5-Nov-97	86.40	173.60	-0.12
18 PS8	SH	125 - 145	282.84	11-Jan-96	103.82	179.02	
			282.84	26-Jan-96	103.18	179.66	0.64
			282.84	26-Feb-96	103.42	179.42	-0.24
			282.84	27-Mar-96	103.57	179.27	-0.15
			282.84	1-Nov-96	105.10	177.74	-1.53
			282.84	27-Nov-96	103.04	179.80	2.06
			282.84	26-Dec-96	103.15	179.69	-0.11
			282.84	24-Jan-97	102.80	180.04	0.35
			282.84	26-Feb-97	102.66	180.18	0.14
			282.84	27-Mar-97	102.36	180.48	0.30
			282.84	26-Jun-97	102.52	180.32	-0.16
			282.84	12-Aug-97	102.59	180.25	-0.07
			282.84	24-Sep-97	102.27	180.57	0.32
			282.84	7-Nov-97	102.48	180.36	-0.21

Table 8-1: SUMMARY OF GENERAL CHEMISTRY ANALYSES  
 MCAS El Toro Groundwater Monitoring Program

			GENERAL CHEMISTRY PARAMETERS AND REGULATORY STANDARDS						
			All Results in Milligrams per Liter (mg/L)						
Station ID	Base Screen Depth (Ft BGS)	Sample Date	TDS 500	Chloride 250.0	Sulfate 250.0	Nitrate/ Nitrite-N 10.0	Alkalinity (as CaCO <sub>3</sub> )	Bicarbonate (as CaCO <sub>3</sub> )	Carbonate (as CaCO <sub>3</sub> )
18_PS6	150	23-Jan-89	1,250	342.0	334.0	106.2		189	
		15-Dec-92	1,630	370.0	458.0	27.6	158	158	
		15-Dec-92		371.0	460.0	28.2	160	160	
		26-Jan-96	1,260	240.0	315.0	29.0	214	262	2 U
		25-Nov-96	1,160	240.0	340.0	23.2	224	224	2 U
		25-Nov-96	1,230	196.0	325.0	23.3	222	222	2 U
		25-Mar-97	1,200	216.0	301.0	24.0	210	210	2 U
		1-Jul-97	1,160	186.0	250.0	17.2	227	227	2 U
		23-Oct-97	1,230	221.0	294.0	18.9	220	220	2 U
		23-Oct-97	1,470	246.0	340.0	17.8	202	202	2 U
18_PS7	126	23-Jan-89	510	55.0	86.0	41.6		294	
		16-Dec-92	766	79.3	116.0	24.9	266	266	
		2-Jul-93	632	52.4	84.3	17.2	294	294	
		22-Jan-96	826	104.0	115.0	34.0	253	309	2 U
		8-Nov-96	969	148.0	165.0	40.0	246	246	2 U
		14-Mar-97	896	108.0	126.0	28.7	249	249	2 U
18_PS8	145	23-Jan-89	910	242.0	165.0	75.3		180	
		14-Dec-92	877	211.0	107.0	14.3	250	250	
		6-Jul-93	836	174.0	100.0	11.4	263	263	
		26-Jan-96	842	200.0	107.0	17.0	244	298	2 U
		25-Nov-96	848	221.0	103.0	16.4	229	229	2 U
		20-Mar-97	882	263.0	124.0	12.2	191	191	2 U
18_RW1	470	11-Sep-89	850	170.0	211.0	13.7		199	
		14-Dec-92	823	168.0	212.0	3.2	208	208	
		15-Dec-92	829	168.0	212.0	3.2	214	214	
		8-Jul-93	875	162.0	204.0	3.1	210	210	
		23-Jan-96	833	173.0	190.0	3.8	207	252	2 U
		8-Nov-96	849	163.0	193.0	4.7	218	218	2 U
		17-Mar-97	846	148.0	167.0	5.0	208	208	2 U
		17-Mar-97	841	154.0	172.0	4.3	208	208	2 U
18_RW2	310	11-Sep-89	670	149.0	117.0	48.7		178	
		22-Dec-92	666	125.0	123.0	13.3	192	192	
		13-Jul-93	704	120.0	112.0	12.6	185	185	
		24-Jan-96	729	113.0	110.0	12.0	187	228	2 U
		8-Nov-96	691	132.0	132.0	17.0	185	185	2 U
		14-Mar-97	731	117.0	115.0	16.0	185	185	2 U
18_RW3	390	11-Sep-89	790	180.0	144.0	39.0		164	
		4-Jun-93	1,160	292.0	350.0	46.2	316	316	
		25-Jan-96	819	195.0	137.0	12.0	163	199	2 U
18_RW4	85	11-Sep-89	1,650	328.0	375.0	132.8		368	
		7-Jun-93	792	195.0	144.0	7.0	164	164	
		26-Jan-96	1,570	257.0	367.0	43.0	271	331	2 U
19_DBMW54	181	18-Dec-92	763	142.0	185.0	12.2	130	130	
		22-Jun-93	781	142.0	180.0	11.8	144	144	
		19-Feb-96	742	126.0	163.0	12.0	152	186	2 U
		3-Dec-96	771	129.0	172.0	10.6	160	160	2 U
		11-Mar-97	737	111.0	149.0	10.1	167	167	2 U
19_DGMW85	183	16-Dec-92	794	172.0	193.0	12.7	136	136	
		16-Dec-92	823		195.0	12.8	138	138	
		10-Jun-93	948	186.0	201.0	14.3	154	154	
		19-Feb-96	922	157.0	186.0	12.0	180	220	2 U
		3-Dec-96	847	174.0	288.0	12.3	155	155	2 U
		11-Mar-97	998	137.0	186.0	10.9	335	335	2 U

Table 6-1: SUMMARY OF PESTICIDES AND PCB ANALYSES  
 MCAS El Toro Groundwater Monitoring Program

Station ID	Base Screen Depth (Ft BGS)	Sample Date	ANALYSIS SUMMARY		TCL PESTICIDE COMPOUNDS DETECTED			REGULATORY	
			Number Compounds Analyzed	Number Compounds Detected	Compound Detected	Concent. ug/L	Qual. Flag	Standard ug/L	Code
18_MCAS06	222	16-Jun-93	28	0					
18_MCAS07-1	100	27-Oct-93	28	0					
		27-Oct-93	28	0					
18_MCAS07-2	200	21-Oct-93	28	0					
18_MCAS07-3	360	22-Oct-93	28	0					
18_MCAS07-4	450	25-Oct-93	28	0					
18_MCAS07-5	520	26-Oct-93	28	0					
18_MCAS07-6	810	28-Oct-93	28	0					
18_MCAS07-7	920	29-Oct-93	28	0					
18_MCAS07-8	989	1-Nov-93	28	0					
18_MCAS07-9	1110	2-Nov-93	28	0					
18_MCAS09	445	5-Nov-93	28	0					
		5-Nov-93	28	0					
18_MCAS10	375	4-Nov-93	28	0					
18_PS1	122	2-Jul-93	28	0					
18_PS2	133	15-Dec-92	28	0					
		12-Jul-93	28	0					
18_PS3	122	10-Dec-92	28	0					
		7-Jun-93	28	0					
18_PS5	118	16-Dec-92	28	0					
		8-Jun-93	28	0					
18_PS6	125	15-Dec-92	28	0					
		15-Dec-92	28	0					
18_PS7	126	16-Dec-92	28	1	ENDOSULFAN SULFATE	0.003			NA
		2-Jul-93	28	0					
		22-Jan-96	28	0					
		8-Nov-96	28	0					
		14-Mar-97	28	1	ENDOSULFAN SULFATE	0.400			NA
18_PS8	145	14-Dec-92	28	0					
		6-Jul-93	28	0					
18_RW1	470	14-Dec-92	28	0					
		15-Dec-92	28	0					
		8-Jul-93	28	0					
18_RW2	310	22-Dec-92	28	0					
		13-Jul-93	28	0					

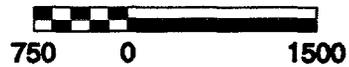
Table 4-1: SUMMARY OF DETECTED VOLATILE ORGANIC COMPOUNDS  
MCAS El Toro Groundwater Monitoring Program

Station ID	Base Screen Depth (Ft BGS)	Sample Date	PRIMARY VOCs DETECTED AND REGULATORY STANDARDS - All Results in Micrograms per Liter (ug/L)											OTHER VOCs DETECTED			
			TCE 5.0	PCE 5.0	CCl <sub>4</sub> 0.5	1,1-DCE 6.0	1,2-DCE (total)	Chloroform 100.0	Chloro-methane	Benzene 1.0	Toluene 100.0	Ethyl-benzene 680.0	Xylenes (total) 1750.0	Freon-113	Compound	Concent.	
18_PS8	145	23-Jan-89	90.0	0.5 U	2.0		0.5 U	4.0				0.5 U	0.5 U				
		14-Dec-92	82.0 E	1.0	3.0	1.0 U	1.0 U	2.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		7-Jun-93	62.0 D	0.6 J	2.0	1.0 U	1.0 U	2.0	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 JN			
		26-Jan-96	102.0	0.8 J	2.0	1.0 U	1.0 U	2.0	10.0 U	1.0 U	4.0	1.0 U	1.0 U	10.0 U	METHYLENE CHLORIDE	2.0	
		26-Jan-96													1,1,1-TRICHLOROETHANE	0.8 J	
		25-Nov-96	157.0	1.0	2.0	1.0 U	1.0 U	2.0	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	9.0 J	METHYLENE CHLORIDE	1.0	
		20-Mar-97	114.0	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50.0 U	5.0 U	5.0 U	5.0 U	5.0 U	50.0 U			
18_RW1	470	11-Sep-89	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	0.5 U					
		9-Nov-89	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	0.5 U					
		14-Dec-92	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		15-Dec-92	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		7-Aug-93	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		23-Jan-96	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	9.0	1.0 U	1.0 U	10.0 U			
		8-Nov-96	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
		17-Mar-97	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
18_RW2	310	11-Sep-89	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	0.5 U					
		9-Nov-89	0.5 U	0.5 U	0.5 U		0.5 U	0.5 U			0.5 U	0.5 U					
		22-Dec-92	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		13-Jul-93	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		24-Jan-96	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	5.0	1.0 U	1.0 U	10.0 U			
		8-Nov-96	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
		14-Mar-97	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
18_RW3	390	11-Sep-89	0.8	0.1	0.5 U		0.5 U	0.1			0.5 U	0.5 U					
		9-Nov-89	0.8	0.1	0.5 U		0.5 U	0.1			0.5 U	0.5 U					
		6-Apr-93	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		25-Jan-96	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	4.0	1.0 U	1.0 U	10.0 U	Well Abandoned 1996		
18_RW4	85	11-Sep-89	0.5 U	0.4	0.5 U		0.5 U	0.5 U			0.5 U	0.5 U					
		9-Nov-89	0.5 U	0.4	0.5 U		0.5 U	0.5 U			0.5 U	0.5 U					
		6-Jul-93	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		26-Jan-96	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	7.0	1.0 U	1.0 U	10.0 U	Well Abandoned 1996		
19_DBMW54	181	18-Dec-92	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		22-Jun-93	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		19-Feb-96	4.0	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
		3-Dec-96	2.0	3.0	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
		11-Mar-97	1.0 U	1.0	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
19_DGMW85	183	16-Dec-92	0.6 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U			4-METHYL-2-PENTANONE	0.6 J
		6-Oct-93	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U				
		19-Feb-96	5.0	1.0 U	1.0 U	1.0 U	1.0 U	4.0	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	BROMODICHLOROMETHANE	2.0	
		3-Dec-96	5.0	4.0	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			
		11-Mar-97	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U	1.0 U	1.0 U	1.0 U	1.0 U	10.0 U			

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SCALE IN FEET



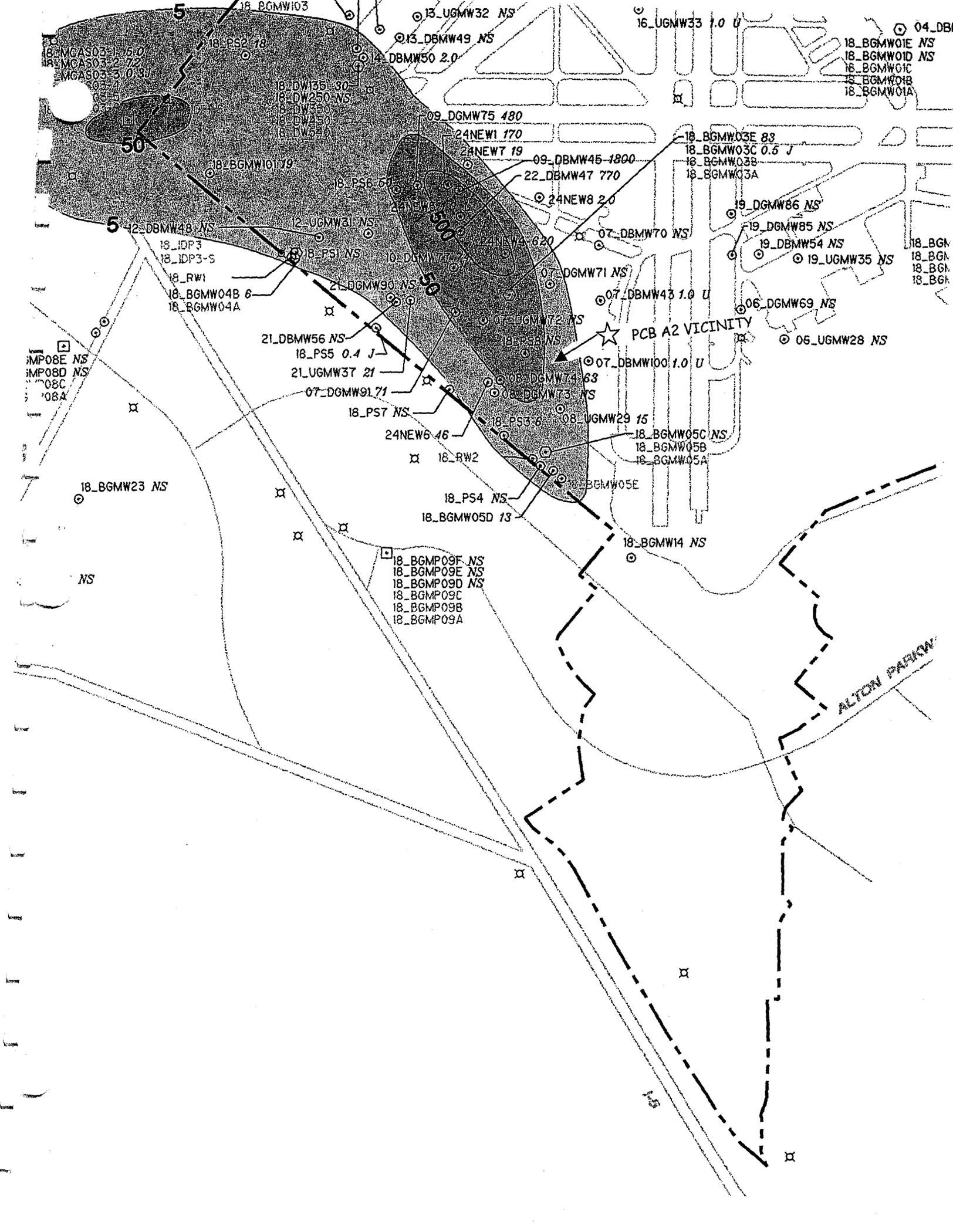
Marine Corps Air Station, El Toro, California

**TCE Concentrations  
in the Shallow Groundwater Unit  
October 1997**

**MCAS El Toro Groundwater Monitoring Report**

**CDM** Federal Programs Corporation  
A Subsidiary of Camp Dresser & McKee Inc.

**Figure 4-1**



18\_MGAS03-1 5.0  
18\_MGAS03-2 7.2  
18\_MGAS03-3 0.3U

18\_MP08E NS  
18\_MP08D NS  
18\_MP08C NS  
18\_MP08A NS

18\_BGMP09F NS  
18\_BGMP09E NS  
18\_BGMP09D NS  
18\_BGMP09C NS  
18\_BGMP09B NS  
18\_BGMP09A NS

16\_UGMW33 1.0 U

04\_DBM  
18\_BGMW01E NS  
18\_BGMW01D NS  
18\_BGMW01C NS  
18\_BGMW01B NS  
18\_BGMW01A NS

50

5

500

PCB A2 VICINITY

ALTON PARKWAY

*Extracts*

**DRAFT  
RECORD OF DECISION  
OPERABLE UNIT 3B  
NO ACTION SITES 7 AND 14  
MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA**

**NOVEMBER 2000**

# DECLARATION

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## SITE NAME AND LOCATION

Marine Corps Air Station El Toro  
Operable Unit 3B Sites 7 and 14  
Orange County, California

National Superfund Database Identification Number: CA 6170023208

## STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for Sites 7 and 14 at Marine Corps Air Station El Toro in Orange County, California. The document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 and the National Oil and Hazardous Substances Pollution Contingency Plan. This decision is based on the administrative record file for these sites.

The state of California (through the California Environmental Protection Agency, Department of Toxic Substances Control, and Santa Ana Regional Water Quality Control Board) and the United States Environmental Protection Agency concur with the selected remedy.

## DESCRIPTION OF THE SELECTED REMEDY: NO ACTION

The selected remedy for Sites 7 and 14 is no action. In selecting the no action remedy for these sites, the Navy has determined that the existing condition of the sites is protective of human health and the environment.

Although shallow groundwater underlying these sites is contaminated by volatile organic compounds, including trichloroethene, carbon tetrachloride, and tetrachloroethene at Site 7 and trichloroethene and carbon tetrachloride at Site 14, remedial investigations have shown that the contamination present in groundwater does not originate from Sites 7 or 14 but lies within the Site 24, Volatile Organic Compound Source Area groundwater plume. Groundwater cleanup, including use restrictions that prohibit drilling of wells and/or extraction of groundwater and allow access for groundwater monitoring and maintenance of equipment associated with groundwater remediation, will be addressed in the Proposed Plan and Record of Decision for Sites 18 and 24.

## DECLARATION STATEMENT

On the basis of extensive field investigations, laboratory analyses, and a thorough assessment of potential human-health risks at each location, the Navy has determined that no remedial action is necessary to assure the protection of human health and the environment at Sites 7 and 14. The remedial investigation of these sites showed that site-related contamination is limited to the shallow soil interval (0 to 10 feet below ground surface). The human-health risk assessments show that the chemicals present in soil do not present an unacceptable risk to human health or the environment. Therefore, no

remedial action is required at these sites. Since hazardous substances are not present at concentrations above unacceptable levels, CERCLA Section 121 cleanup standards do not apply.

Signature: \_\_\_\_\_  
Mr. Dean Gould  
Base Closure and Realignment Environmental Coordinator  
Marine Corps Air Station El Toro

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Mr. John E. Scandura, Chief  
Southern California Operations  
Office of Military Facilities  
Department of Toxic Substances Control

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Mr. Daniel A. Meer, Chief  
Federal Facilities Cleanup Branch  
United States Environmental Protection Agency, Region 9

Date: \_\_\_\_\_

Signature: \_\_\_\_\_  
Mr. Gerald J. Thiebeault  
Executive Officer  
Regional Water Quality Control Board, Santa Ana Region

Date: \_\_\_\_\_

## Section 5 Summary of Site Characteristics

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Borrego Canyon Wash flows along the southeast boundary of MCAS El Toro. The wash is unlined in the Santa Ana Mountains and unlined downstream of Irvine Boulevard. Borrego Canyon Wash crosses the southern corner of the Station and joins Agua Chinon Wash about 1/4 mile downstream of the Station boundary.

Both Agua Chinon and the Bee Canyon Washes cross the central portion of MCAS El Toro and receive on-Station runoff mainly through storm sewers. These washes are contained in culverts through most of their pathways across the Station. Both washes are unlined along several hundred feet at the southwest edge of the Station and are lined again in a culvert beneath the Irvine Spectrum development adjacent to the southwestern boundary of the Station. Marshburn Channel is a lined drainage channel that runs along the northwestern boundary of MCAS El Toro. The channel receives runoff from the western part of the Station. All of the drainages ultimately discharge into San Diego Creek.

The MCAS El Toro Master Plan (Plan) indicates that much of the Station lies within the 100-year flood plain. Existing drainage systems were developed for agricultural use, not for the increased flows generated by the urban development now surrounding the base. Approximately 15 acres of an agricultural lease was flooded and crops were destroyed during a storm on 29 November 1997. The area included in the 100-year flood plain is shown in Figure 5-2. The completion of the Orange County San Diego Creek Flood Control Master Plan is expected to alleviate the flood hazard by 2001 (SWDIV 1998).

### 5.1.3 Rainfall and Prevailing Wind Conditions

The mean average rainfall at MCAS El Toro is approximately 12.2 inches, most of which occurs from November through April (JEG 1993a). Because of the low average annual rainfall and high evapotranspiration rates, net infiltration from precipitation is less than 5 inches per year (BNI 1996c).

From March through October, the prevailing wind is from the west, averaging 6 knots. From November through February, the prevailing wind is from the east, averaging 4 knots. Strong, dry, gusty, offshore winds (locally known as "Santa Ana winds") are common during late fall and winter. The typically dry conditions and persistent winds may result in light to moderate wind erosion.

## 5.2 SITE 7, DROP TANK DRAINAGE AREA NO. 2

Site 7 is located in the southwestern quadrant of MCAS El Toro, north and west of Buildings 295 and 296, at an elevation of approximately 275 feet MSL. The approximate site area is 200,000 square feet. Most of the surface of Site 7 is unpaved and fairly well vegetated, but some paved areas are present as well as two small buildings. Site 7 is generally flat, and surface flow is induced only during significant rainfall events. Surface drainage is conveyed generally to the south toward Agua Chinon Wash.

## 5.2.1 Geology and Hydrogeology

A review of the RI boring logs indicates that the soil at Site 7 consists of poorly to well-graded sand, silty sand, and sandy silt. Soil in the area is classified as Sorrento loam, which develops on nearly flat (0 to 2 percent slope) floodplain deposits like those at Site 7. Sorrento loam is typically a well-drained soil characterized by slow surface runoff and a slight erosion hazard because of the nearly flat surface (Watchtell 1978). The shallow groundwater unit is present at approximately 120 feet bgs. Regional groundwater flow beneath Site 7 is generally to the west-northwest.

## 5.2.2 Site History

Site 7 was previously used for aircraft drop tank storage and drainage. In the northern area, aircraft drop tanks were drained and washed on a concrete apron from approximately 1969 to 1983 (Figure 5-3). The mixture of residual fuel and washwater drained off the edge of the concrete apron onto the adjacent grassy areas. An estimated 7,000 gallons of jet propellant – Grade 5 (JP-5) fuel and lubrication oil were disposed in this area. In the eastern portion of the site, soil areas near the aircraft hangars (Buildings 296 and 297) are suspected to have been sprayed with lubrication oil and JP-5 jet fuel for dust control. More than 11,000 gallons of lubrication oil and nearly 4,000 gallons of JP-5 may have been used for dust control between 1972 and 1983. From 1972 to 1978, the area comprising Unit 5 served as an unpaved parking lot and was also sprayed with lubricant oils for dust control (JEG 1993a).

## 5.2.3 Site Investigations

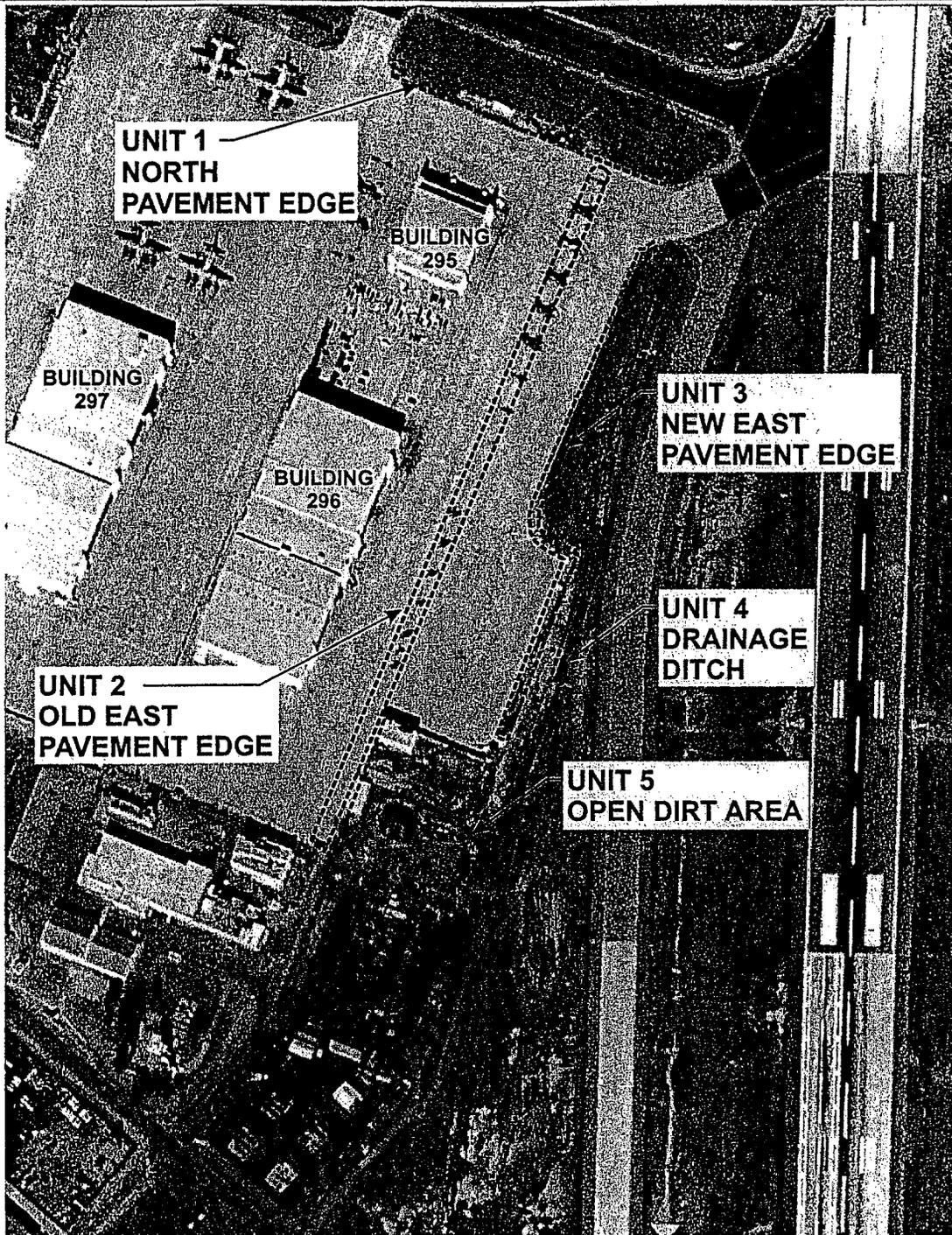
Investigations conducted at Site 7 included an RFA, Phase I and II RIs, two aerial photographic surveys, a soil gas survey, and employee interviews.

### 5.2.3.1 RCRA FACILITIES ASSESSMENT

During the RFA, solid waste management units (SWMUs)/Areas of Concern (AOCs) 71 and 72 were identified within the Site 7 boundaries but not investigated. The exact location of SWMU/AOC 71 was unknown but believed to be within Unit 1. SWMU/AOC 72 is located in the southern part of Unit 3 (Jacobs 1993b). Because both of these SWMUs/AOCs were located within Site 7 boundaries, the Phase II RI/FA Work Plan indicated that a visual inspection would be conducted of the SWMUs/AOCs locations. If a visual evidence of a surface release was not identified no sampling would be performed at these SWMUs/AOCs (BNI 1995a). The visual evaluation of both SWMUs during the Phase II RI fieldwork did not identify evidence of a surface release at either location (BNI 1997a). As a result, SWMUs/AOCs 71 and 72 are recommended for no further action.

### 5.2.3.2 PHASE I REMEDIAL INVESTIGATION

To facilitate the Phase I RI, Site 7 was divided into five units on the basis of common historical activities, aerial photograph reviews, and relative locations (Figure 5-3). The five units are:



SOURCE: AERIAL PHOTOBANK, INC.  
 SAN DIEGO, CALIFORNIA  
 DATE: 1/12/96

Record of Decision Figure 5-3 Site Aerial Photograph (1/12/96) Site 7 - Drop Tank Drainage Area No. 2	
MCAS, El Toro, California	
	<i>Bechtel National, Inc.</i> CLEAN II Program
Date: 11/14/00 File No: 164E5745 Job No: 22214-164 Rev No: B	

- North Pavement Edge (Unit 1),
- Old East Pavement Edge (accepted for no further investigation by the BCT before the OU-3 Phase II RI fieldwork [BNI 1995a,b,c]) (Unit 2),
- New East Pavement Edge (Unit 3),
- Drainage Ditch (Unit 4), and
- Open Dirt Area south of Building 296 (Unit 5).

Unit 1, a concrete pavement edge approximately 700 feet long and located 200 feet north of Building 295, is almost completely devoid of vegetation. Aircraft matting covers part of the center of this unit. Unit 2 was a concrete pavement edge approximately 1,500 feet long and perpendicular to Unit 1. In 1979, the pavement was expanded and Unit 2 is presently covered by approximately six inches of concrete. Unit 3 is a well vegetated concrete pavement edge 300 to 400 feet west of Building 296. Unit 4 is a drainage ditch approximately 50 feet east of Unit 3 that is well vegetated and exhibits no signs of erosion from surface water flow. Unit 5 is a square area of approximately 90,000 square feet. Pavement covers the southern half of the unit, while the northern half is partially vegetated. Surface drainage from Site 7 flows generally southward and eventually discharges into Agua Chinon Wash.

Sixty-two soil samples were collected from 19 borings in Units 1 through 5 during the Phase I RI. These included:

- ten shallow-soil (less than 10 feet bgs) samples from four borings and eight deeper-soil (greater than 10 feet bgs) from one boring in Unit 1,
- nine shallow-soil samples from four borings and seven deeper-soil samples from one boring in Unit 2,
- seven shallow-soil samples from three borings in Unit 3,
- six shallow-soil samples from three borings in Unit 4, and
- eight shallow-soil samples from three borings and seven deeper-soil samples from one boring in Unit 5.

Soil samples collected during the Phase I RI were analyzed for VOCs, SVOCs, pesticides/PCBs, total petroleum hydrocarbons (TPH), total recoverable petroleum hydrocarbons (TRPH), and target analyte list (TAL) metals. Selected samples were also analyzed for total organic carbon.

Groundwater samples were collected during the Phase I RI from three on-site monitoring wells and three off-site monitoring wells. The Site 7 wells were also sampled on several occasions after the Phase I RI. The findings of the Phase II RI for the VOC source area and the Phase I RI for Site 7 demonstrated that Site 7 is not a source of regional groundwater contamination. Groundwater contamination beneath Site 7 is being addressed under OU-2A and is, therefore, not addressed in this ROD.

## Section 5 Summary of Site Characteristics

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Chemicals reported in soil above the detection limits in the Phase I RI included VOCs, SVOCs, polynuclear aromatic hydrocarbons (PAHs), pesticides, diesel, gasoline, TRPH, and TAL metals above background. No PCB was reported above the detection limit.

As a result of the Phase I RI, Units 1, 3, 4, and 5 were recommended for further investigation in a Phase II RI. The plans for further investigation of these units were presented in the Phase II Final Work Plan Phase II RI/FS MCAS El Toro (Final Work Plan Phase II RI/FS) issued in July 1995.

The analytical results from soil samples collected within Unit 2 did not identify concentrations of VOCs, SVOCs, pesticides, or PCBs above laboratory detection limits. In addition, TPH as diesel was reported in only three samples at concentrations less than 44 mg/kg and TPH as gasoline was reported in only two samples at concentrations less than 0.4 mg/kg. Based on these analytical results, Unit 2 was recommended for no further action. BCT concurred with the DON's no further action recommendation and this decision was documented in the final Work Plan Phase II RI/FS. Consequently, no sampling was conducted at Unit 2 during the Phase II RI (BNI 1995a).

### 5.2.3.3 UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AERIAL PHOTOGRAPH SURVEY

During the U.S. EPA aerial photograph review, 1970 photographs indicated vertical tanks, open storage areas, and staining features within Site 7. In a 1980 photograph, the concrete apron east of Buildings 296 and 297 had been extended further east, which moved the drainage area to the new concrete apron edge. Staining and easterly flow of liquid were present in most aerial photographs of Site 7 (JEG 1993a).

### 5.2.3.4 SCIENCE APPLICATIONS INTERNATIONAL CORPORATION AERIAL PHOTOGRAPH SURVEY

The Science Applications International Corporation (SAIC) Aerial Photograph Assessment noted that the extension of the concrete apron east of Buildings 296 and 297 was completed between 1971 and 1973. Stains caused by liquids flowing easterly from the concrete apron were observed in 1946, 1961, and 1981 photographs (SAIC 1993).

### 5.2.3.5 SOIL GAS SURVEY

In 1994, a soil gas survey was conducted at Sites 24 and 25 in the southwestern quadrant of MCAS El Toro (JEG 1994b), where the sources of the regional VOC groundwater plume were believed to be located. During this investigation, both soil gas and soil samples were collected from approximately 15 and 30 feet bgs at 465 locations. Soil gas samples were analyzed for VOCs; TPH; and benzene, toluene, ethylbenzene, and xylenes. Soil samples were analyzed for VOCs.

During this investigation, approximately 20 sampling locations were positioned within and adjacent to the Site 7 boundaries. Analyses of the soil gas samples from these locations indicated the presence of trichloroethene, tetrachloroethene, Freon-113, and