

# Summary Report

*Aerial Photograph Anomaly Area 5*

*APHO 31, APHO 43, APHO 66, APHO 67, and APHO 68*

*Marine Corps Air Station*

*El Toro, California*

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PHOTOGRAPH ANOMALY AREA 5 APHO 31,  
APHO 43, APHO 66, APHO 67 AND APHO 68

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# *Abbreviations and Acronyms*

|         |   |
|---------|---|
| APHO    | aerial photograph anomaly   |
| BTEX    | benzene, toluene, ethylbenzene, and total xylenes                   |
| BRAC    | Base Realignment and Closure Act                                    |
| CA LUFT | California Leaking Underground Fuel Tank                            |
| CDM     | Camp, Dresser & McKee, Inc.   |
| CERCLA  | Comprehensive Environmental Response Compensation and Liability Act |
| DCN     | Document Control Number   |
| DG      | disturbed ground  |
| DO      | Delivery Order  |
| DRMO    | Defense Reutilization and Marketing Office                          |
| EPA     | U.S. Environmental Protection Agency                                |
| EX      | excavation  |
| ft/ft   | feet per foot   |
| FS      | feasibility study   |
| gpm     | gallons per minute  |
| GPR     | ground penetrating radar  |
| GR      | graded  |
| HM/HWMP | Hazardous Material/Hazardous Waste Management Plan                  |
| IRP     | Installation Restoration Program                                    |
| JEG     | Jacobs Engineering Group Inc.                                       |
| LOX     | liquid oxygen   |
| MCAS    | Marine Corps Air Station  |
| mg/kg   | milligrams per kilogram   |
| mg/L    | milligrams per liter  |
| MMDT    | mounded material disturbed ground                                   |
| MSC     | miscellaneous site of concern                                       |
| msl     | mean sea level  |
| MTBE    | methyl tert-butyl ether   |
| NPDES   | National Pollution Discharge Elimination System                     |
| OCHCA   | Orange County Health Care Agency                                    |
| PRG     | Preliminary Remediation Goal  |
| RCRA    | Resource Conservation and Recovery Act                              |
| RFA     | RCRA Facility Assessment  |
| RI      | remedial investigation  |
| ROD     | Record of Decision  |
| RWQCB   | Regional Water Quality Control Board                                |
| SAIC    | Science Applications International Corporation                      |
| Station | Marine Corps Air Station El Toro                                    |
| SWDIV   | Southwest Division Naval Facilities Engineering Command             |
| SWMU    | solid waste management unit   |
| TAA     | Temporary Accumulation Area   |
| TPH     | total petroleum hydrocarbons  |
| TR      | trench  |

## *Abbreviations and Acronyms (Cont.)*

|       |                           |
|-------|---------------------------|
| UO    | unidentified object       |
| UST   | underground storage tank  |
| VOC   | volatile organic compound |
| µg/kg | micrograms per kilogram   |
| µg/L  | micrograms per liter      |

# *Section 1*

## *Introduction*

The purpose of this Summary Report is to present information pertaining to aerial photograph anomalies, designated as Aerial Photograph Anomaly Area 5 in the vicinity of east end of the east-west runway in the eastern portion of the Marine Corps Air Station (MCAS), El Toro (herein after referred to as Station), California. OHM Remediation Services Corp (O+HM) performed the work under Delivery Order (DO) 0070 for the Southwest Division Naval Facilities Engineering Command (SWDIV) under Remedial Action Contract No. N68711-93-D-1459.

Anomaly Area 5 includes five aerial photograph (APHO) anomalies identified by Science Applications International Corporation (SAIC) on aerial photographs taken from 1967 to 1988. These site numbers are listed with their associated photograph dates: APHO 66 [SAIC 161 (1967)], APHO 31 [SAIC 215 (1971)], APHO 43 [SAIC 287 (1974)], APHO 67 [SAIC 314 (1975)], and APHO 68 [SAIC 542 (1988)].

### Site Location

The MCAS comprises of approximately 4,700 acres (Figure 1-1) and is located in eastern Orange County approximately 45 miles southeast of Los Angeles, California. The Anomaly Area 5 is located in the southeast quadrant of the Station, immediately east of the former "Desert Storm" temporary staging area (MSC D1), located northeast of the intersection of East Marine Way and "Z" Street, Figure 1-2.

Station officially closed on July 2, 1999 in accordance with the Base Realignment and Closure Act of 1993 (BRAC III). Anomaly Area 5 is located within a parcel designated as Recreation Golf Area according to Preferred Land Use Plan (Concept B) as published by the County of Orange in September 1999, as shown in Figure 1 of Appendix A.

Anomaly Area 5 encompasses an area of approximately 250 feet by 450 feet adjacent to the east end of the east-west runway in the vicinity of miscellaneous site of concern (MSC)-D1 and Solid Waste Management Unit (SWMU) 264, Defense Reutilization and Marketing Office Yard 3.

This Summary Report includes a description of information collected during the investigation of nearby Environmental Locations of Concern, results of the historical records, results from the field verification activities and visual inspection of the Anomaly Area 5. The field sampling analytical results indicate that no petroleum hydrocarbons and Volatile Organic Carbons (VOCs) were released to the ground surface at this site. Some metals were detected above the stated laboratory-reporting limit however; concentrations detected were below the established background levels for MCAS El Toro. Based upon the review of the field data and historical documentation, it is recommended that "*no further action status*" designated for Anomaly Area 5 (APHO 66, APHO 31, APHO 43, APHO 67, and APHO 68) in the next Base Realignment and Closure Business Plan update.

## ***Section 2***

### ***Field Inspections and Historical Records***

Anomaly Area 5 includes the following five anomaly sites: Anomaly Descriptions were derived from the following source document; Final Report, Aerial Photograph Assessment (SAIC, 1993) are presented in italics:

**APHO 31(SAIC 215-date of photograph: 1971):** *There is disturbed ground (DG) about 250 by 350 feet in area, dark-toned mounded material (MMDT), and a probable trench (TR), all about 1600 feet westerly of West Marine Road and Magazine Road. There is also a possible light-toned unidentified object (UO). Additional investigation of the site as a possible disposal or storage site is recommended.*

**APHO 43(SAIC 287-date of photograph: 1974):** *There is an excavation (EX) about 1,600 feet west of the Perimeter Road and Magazine Road intersection. The purpose of the excavation is unknown, and investigation of the site history as a possible disposal area is recommended.*

**APHO 66 (SAIC 161-date of photograph: 1967):** *Disturbed ground (DG) and probable backfilled trenches (TR) are noted in the western corner of Perimeter Road and Magazine Road, and about 1,400 feet westerly of the intersection. Additional investigation of the purpose of these sites is recommended. The northeasterly-oriented, backfilled trench (TR) adjacent to Perimeter Road is the Perimeter Road Landfill (Site 5). No Additional investigation of Site 5 is recommended at this time. The present IR program field investigation Site 5 appears to be adequate, relative to the features noted here.*

**APHO 67(SAIC 314-date of photograph: 1975):** *Disturbed ground (DG) can be seen about 1000 feet northeast of Building 673, near North/East Marine and N 3<sup>rd</sup> Street. The cause of the disturbance is unknown. Investigation of the site's history as a possible disposal area is recommended.*

**APHO 68 (SAIC 542-date of photograph: 1988):** *A light-colored pad, possibly concrete, was constructed west of Perimeter Road and Magazine Road. The purpose of the pad is unknown, but the area was probably graded (GR). No additional investigation is recommended at this time.*

#### ***2.1 Field Inspections***

OHM conducted a visual inspection, including taking photographs of Anomaly Area 5 on December 1, 1999. Photographs of Anomaly Area 5 and the checklist forms for the visual inspection of APHO 66, APHO 31, APHO 43, APHO 67, and APHO 68, are presented in Appendix B.

Anomaly Area 5 is relatively flat with most of the area covered with grass, however some of the individual anomalies appear to be located beneath the end of the runway. OHM

inspected the site on December 1, 1999. No apparent soil stains or evidence of waste materials or petroleum hydrocarbon releases were observed during the site inspection. Also, no evidence of disturbed ground, mounted materials, or trenches was observed during OHM's visual inspections of Anomaly Area 5. Building 841 former Liquid Oxygen (LOX) facility with concrete pad is within the Anomaly Area 5 site boundary. A grass-covered area surrounds Anomaly Area 5 to the west and northwest, and IRP Site 5 is located southeast side of Anomaly Area 5. MSC-D1, the Desert Storm Staging area is located southwest of the site.

## ***2.2 Environmental Program Records***

The records from petroleum and Comprehensive Environmental Response Compensation and Liability Act (CERCLA) investigations in the vicinity of Anomaly Area 5 were acquired and reviewed along with other environmental program records. Ground water conditions at Anomaly Area 5 have been investigated during the investigation of nearby IRP Site 5 during the CERCLA investigations. The depth to ground water is approximately 163 feet below ground surface and the gradient is northwest.

Brief descriptions of the sites that are located near Anomaly Area 5 is presented in Table 2-1 and are shown in Figure 1-2.

### Underground Storage Tank (UST) Program

UST 442 is located approximately 800 feet northwest of Anomaly Area 5. OHM removed UST 442 in 1996 and site was closed by Orange County Health Care Agency (OCHCA) in December 1996.

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

Three Solid Waste Management Units (SWMUs), SWMU 225, 181, and 264 were identified in the vicinity of Anomaly Area 5 during the RFA by Jacobs Engineering Group (JEG, 1993). Soil samples were collected at all three SWMUs during the RFA Sampling Visit. The results of the field inspection and Sampling Visit are published in the *Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment for Marine Corps Air Station, El Toro, California* (Jacobs Engineering Group, 1993).

### Miscellaneous Site of Concern (MSC) D1

MSC D1 is a former staging area used to stage materials for embarkation to *Operation Desert Storm* in the Middle East during August to November 1991. OHM collected a total of 24 soil samples from 8 soil borings to evaluate the subsurface soil conditions at the MSC D1 site. Laboratory analytical results did not indicate a release of petroleum hydrocarbons and/or volatile organic compounds to the vadose zone beneath MSC D1 (OHM, 2000).

### Temporary Accumulation Area (TAA) 772

TAA 772 (identified as SWMU 225) is located adjacent to Anomaly Area 5. Seven soil samples were collected by JEG from one 60-foot angle boring during the RFA Sampling Visit. Subsurface soil consists primarily of clays, clayey sand and sandy clays. TPH, VOCs, SVOCs, pesticide and PCB compounds were not detected from all seven soil samples. TAA 772 was taken out of service several years ago and final closure activities are in progress as of December 1999.

Excerpts from the RFA documentation, including laboratory test results and boring log are presented in Appendix C.

### Adjacent Installation Restoration Program (IRP) Sites

IRP Site 5, the Perimeter Road Landfill, is located approximately 400 feet southeast of Anomaly Area 5. Soil and ground water samples were collected at IRP Site 5 – Perimeter Road Landfill – during the Phase I and Phase II Remedial Investigations (RI).

### Storm Water Pollution Prevention Plan

The Station's environmental compliance program management plans were acquired and reviewed in order to identify any locations at or near Anomaly Area 5 that may have been designated for storage or usage of hazardous materials or hazardous wastes. The Storm Water Pollution Prevention Plan (SWPPP) was reviewed and the SWPPP does not identify storage or usage of hazardous substances at Anomaly Area 5. Excerpts from the SWPPP are presented in the Appendix D.

Surface water runoff in the vicinity of Anomaly Area 5 discharges to Borrego Canyon Wash. Borrego Canyon Wash and other surface drainage channels were investigated during the RI of IRP Site 25. Sediment and water samples were collected from the drainage channels, human health and ecological risks were assessed, and a Record of Decision for No Action at IRP Site 25 was signed in September 1997.

Surface water quality in Borrego Canyon Wash is monitored under the Station's National Pollutant Discharge Elimination System (NPDES) Permit for Storm Water. The permit was issued by the California Regional Quality Control Board (RWQCB), Santa Ana Region.

### Hazardous Materials and Hazardous Waste Management Plan

The Station's Hazardous Material and Hazardous Waste Management Plan (HM/HWMP) was reviewed, and the nearest hazardous waste temporary accumulation area is TAA 772 located adjacent to MSC D1, Desert Storm Staging Area. Extracts from HM/HWMP are presented in the Appendix E.

## ***Section 3***

# ***Environmental Setting***

This section summarizes the general physiographic, geologic, and hydrogeologic setting in the vicinity of Anomaly Area 5.

### ***3.1 Physiography and Topography***

The Station is located on the southeastern edge of the Tustin Plain and extends into the Santa Ana Mountains. The Tustin Plain slopes gently toward the west-southwest with land surface elevations ranging from approximately 215 feet above mean sea level (msl) at the western corner to approximately 410 feet msl at the eastern edge of the Station. Elevations within the portion of the Station in the Santa Ana Mountains extend upward to 800 feet msl near the northeast corner of the Station. The topography in the area of Area 5 gently slopes to the west, with elevations ranging from 408 to 421 feet above msl datum.

### ***3.2 Geology***

The Station is situated on alluvial materials derived mainly from the Santa Ana Mountains. These Holocene materials consist of coarse-grained stream channel deposits and fine-grained overbank deposits that are up to 300 feet thick (Herndon and Reilly, 1989).

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

Review of the OHM verification soil boring logs at the Anomaly Area 5 indicate that the site is underlain by a shallow sand (SP, SW, and SM) extending from the surface to approximately 15 feet depth. Underlying the shallow sand unit is interbedded silt (ML) and silty fine sand (SM). These units appear typical of the channel and overbank deposits in comprising the Holocene deposits of the Tustin Plain.

### ***3.3 Hydrogeology***

The Station is situated within the Irvine Groundwater Subbasin, which comprises the southeast segment of the Main Orange County Groundwater Basin. Regional groundwater flow in the subbasin has been to the west and northwest since the 1940s and is controlled locally by large groundwater withdrawal depressions. From 1969 to 1982, an average gradient of 0.0046 foot per foot (ft/ft) to the northwest was reported in the principal aquifer zone of the Irvine area (Banks, 1984). Phase I remedial investigation data indicated a similar

groundwater flow direction in the shallower groundwater zone, with a slightly higher gradient of 0.008 ft/ft (JEG, 1993).

The depth to groundwater beneath the Station ranges from approximately 45 feet below ground surface in the foothills to 240 feet below ground surface in the deepest portion of the Irvine Subbasin. The depth to groundwater in the vicinity of Anomaly Area 5 is estimated to be approximately 170 feet below ground surface, based on extrapolated groundwater elevation data and surveyed topographic elevation of the site. These data are presented in the Groundwater Monitoring Report (Camp Dresser & McKee, Inc. [CDM] Federal Programs, 1997) and summarized in Table 3-1. The well locations are shown in Figure 1-2 (CDM, 1997).

### ***3.3.1 Groundwater Conditions***

Groundwater conditions have been investigated in the vicinity of Anomaly Area 5 during the investigations of IRP Site 5. The nearest well 05\_DGMW67 is located 250 feet southeast of Anomaly Area 5. Based upon measurement from this well, groundwater is located approximately 170 feet below ground surface and the gradient is 0.009 foot/foot towards the northwest.

A total of five groundwater wells (05\_DGMW67, 05\_DBMW41, 05\_UGMW27, 05\_DGMW68 and 05NEW1) have been monitored at IRP Site 5. Excerpts from the CDM groundwater monitoring report (CDM, 1997) showing the water levels at IRP Site 5 wells are presented in Appendix F.

## ***Section 4***

### ***Field Verification Activities***

OHM collected shallow soil samples on December 10, 1999 at five locations in the vicinity of Anomaly Area 5 in order to ascertain whether a release had occurred. Sampling activities were conducted in accordance with the strategy identified by the SWDIV Navy in the facsimile transmittal of June 1999, DTSC comments dated June 22, 1999 on the SWDIV Navy facsimile sampling strategy of May 1999, and Supplemental Sampling Strategy, Aerial Photograph Areas 4 and 5 issued by OHM in November 1999(OHM, 1999). Copies of June and November 1999 Sampling Strategy are included in Appendix G. Field activities included: a site inspection; a geophysical survey; verification soil sampling; and a land survey.

Sampling activities were conducted in accordance with the following documents: 1) Agency approved Preliminary Draft DO 0024 documents: Work Plan, Contractor Quality Control Plan Addendum, Waste Management Plan, Chemical Data Acquisition Plan (OHM, 1995a), and Site-Specific Health and Safety Plan (OHM, 1995b); 2) DO 0070 Draft Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites, Marine corps Air Station (MCAS), El Toro (OHM 1997).

#### ***4.1 Utility Clearance and Geophysical Survey***

The utility clearance consisted of reviewing site-specific utility maps obtained from the Station, reviewing the site inspection log, performing a geophysical survey of the site, and notifying Underground Service Alert of the intent to drill.

On December 6, 1999, Geovision conducted a geophysical survey at Anomaly Area 5 using a utility locator and ground-penetrating radar (GPR), to locate the presence of underground utilities in the vicinity of proposed drilling areas.

#### ***4.2 Verification Drilling Activities***

On December 10, 1999, OHM conducted verification drilling and sampling activities at Anomaly Area 5 to evaluate the sub surface conditions. A total of 5 soil borings were advanced (PHA5 SB-01 through PHA5 SB-05) to approximate total depths of 15 feet below ground surface. These boring locations were selected based on field visit. The soil boring locations are shown in Figure 4-1.

##### Drilling and Soil Sampling Techniques

BC<sup>2</sup> Environmental Corporation, an OHM subcontractor, advanced a total of five soil borings with a tractor mounted CME 75 mobile drilling rig using hollow-stem auger drilling techniques. A total of 10 soil samples including, a duplicate sample, were collected using a California-modified split-spoon sampler. Soil samples were collected from depths of 5 and

10 feet below ground surface and submitted for laboratory analyses. Following the completion of sampling activities, the soil borings were backfilled with a cement-bentonite grout.

To minimize the potential for cross-contamination, drilling and sampling equipment was decontaminated before initiating work at the site, between each soil boring, and at the completion of the work at the site. Decontamination was accomplished by using a pressure washer and/or scrubbing with a non-phosphate detergent and water solution, rinsing with tap water, and rinsing with deionized water.

### Soil Lithology

Based on the soil samples collected from borings PHA5 SB-01 through SB-05, soil conditions appeared consistent throughout the investigated area. The boring logs indicate that the subsurface soil in the vicinity of Anomaly Area 5 primarily consists of silt, silty-sand, and fine-grained sand mixtures. The field boring logs, describing soils underlying the site and indicating soil sample collection intervals are presented in Appendix H.

### Sample Tracking and Analytical Methods

Sample handling, documentation, and packaging, was conducted in accordance with the procedures described in the approved draft work plan (OHM, 1995a). The soil samples were analyzed for:

- Total petroleum hydrocarbons (TPH-extractable and purgeable) as JP-5 using CA LUFT Method 8015 Modified
- Volatile organic compounds (VOCs), including methyl tert-butyl ether (MTBE) using EPA Method 8260A
- Metals by EPA 6010A and EPA 7471A.

### Analytical Results

TPH as gas or diesel was not detected in concentrations equal to or exceeding the stated laboratory reporting limits in the soil samples collected from borings PHA5 SB01 through SB05. No benzene, MTBE, or other VOC compounds were detected, except for the suspected laboratory contaminants; acetone (18J  $\mu\text{g}/\text{kg}$ ) and methylene chloride (2J  $\mu\text{g}/\text{kg}$ ) detected in the soil sample 18609-2522 from boring PHA5-SB03 at 5-foot depth. Acetone and Methylene chloride, chemicals commonly used for cleaning laboratory glassware, and are common laboratory contaminants.

Metal analytes such as barium, beryllium, chromium, cobalt, copper, lead, manganese, nickel, vanadium, and zinc were detected above the stated laboratory reporting limits; however, the concentrations were significantly less than the EPA PRGs for Residential use and MCAS El Toro background levels established during the RI (BNI, 1996). However, thallium was detected (at 1.19 mg/kg and 1.41 mg/kg) in two samples (sample numbers 18609-2514 from boring SB-02 at 5 feet bgs and 18609-2520 from boring SB-04 at

5 feet bgs, respectively) above the MCAS El Toro established background concentration of 0.42 mg/kg. The residential PRG for thallium is 5.5 mg/kg.

Arsenic was detected at levels exceeding the PRG, but below the MCAS El Toro established background level. Therefore, risk caused by arsenic at Anomaly Area 5 appears to be attributable to background conditions rather than to a release of hazardous substances.

Analytical results of the soil samples collected from the verification borings are summarized in Figure 4-1, and are listed with the background concentrations and PRGs in Table 4-1. Laboratory analytical reports with chain of custody are provided in Appendix I, Laboratory Analytical Reports.

#### Quality Assurance/Quality Control

Field quality assurance/quality control (QA/QC) samples were collected during sampling activities to evaluate the consistency and accuracy of the analytical data. Field QC samples for the Anomaly Area 5 consisted of equipment rinsate, soil sample duplicate, and trip blank samples as follows:

- Equipment rinsate samples were collected at a frequency of 1 per day.
- One duplicate soil sample was collected (sample number 18609-2523).
- Trip blank samples were collected at a frequency of 1 blank for each cooler containing samples for VOC analysis.

Analytical results of the trip blank and equipment rinsate samples are summarized in Table 4-2.

### ***4.3 Land Surveying***

After completing the verification drilling, the soil boring locations were surveyed on December 14, 1999 by Cal Vada Surveying, Inc., a California-registered land surveyor. The surveyed locations were measured to  $\pm 0.01$  ft/ft horizontally and tied to the California State Plane Coordinate Systems, North American Datum 1983. The surveyed elevations were measured to  $\pm 0.01$  foot vertically and tied to mean sea level datum. The surveyed plan for Anomaly Area 5 is presented as Appendix J, Land Survey Plan.

## Section 5

# Findings and Recommendations

The following findings are based upon information collected from existing records, visual inspections and soil sampling data from verification soil borings at Anomaly Area 5:

- Anomaly Area 5 (APHO 66, APHO 31, APHO 43, APHO 67, and APHO 68) contains part of the end of the east-west runway where munitions were formerly placed into aircraft. The anomalies were identified on photographs taken during the time period from 1967 through 1988.
- OHM visually inspected Anomaly Area 5 vicinity in December 1999 and no visual evidence of surface stains, waste materials, disturbed ground, mounded materials or trenches was observed. Also, historical documentation did not identify the storage or usage of hazardous substances at Anomaly Area 5.
- Anomaly Area 5 is located near SWMU 225 (also known as TAA 772) and MSC D1 (Desert Storm Staging area) site. Soil samples were collected for SWMU 225 during the RFA Sampling Visit and OHM performed MSC D1 site soil sampling in 1999.
- The depth to groundwater at Anomaly Area 5 is estimated to be approximately 170 feet bgs.
- Verification soil sampling data from five shallow soil borings indicated that TPH analytes (extractable or purgeable) were not detected in concentrations equal to or exceeding the laboratory reporting limits in any of the soil samples. No benzene, MTBE, or other VOCs were detected, except for acetone and methylene chloride, suspected laboratory contaminants. Some metal analytes were detected above the stated laboratory reporting limit; however, for most of the detected metal analytes the concentrations were less than established background levels for MCAS El Toro and EPA PRGs. Arsenic was detected at levels exceeding the EPA PRGs; however, arsenic was not detected at or above the established background levels for MCAS El Toro. Thallium was detected above the established background levels for MCAS El Toro in two samples at 1.19 mg/kg and 1.41 mg/kg, respectively, but below the residential PRG of 5.5 mg/kg.

Based on results of the field verification sampling data at Anomaly Area 5, the results of the record search activities, and the results of the visual inspection, it is recommended *that no further action (NFA)* status be designated for Anomaly Area 5 (APHO 66, APHO 31, APHO 43, APHO 67, and APHO 68) and that *NFA* status be documented in the next BRAC Business Plan update.

## *Section 6*

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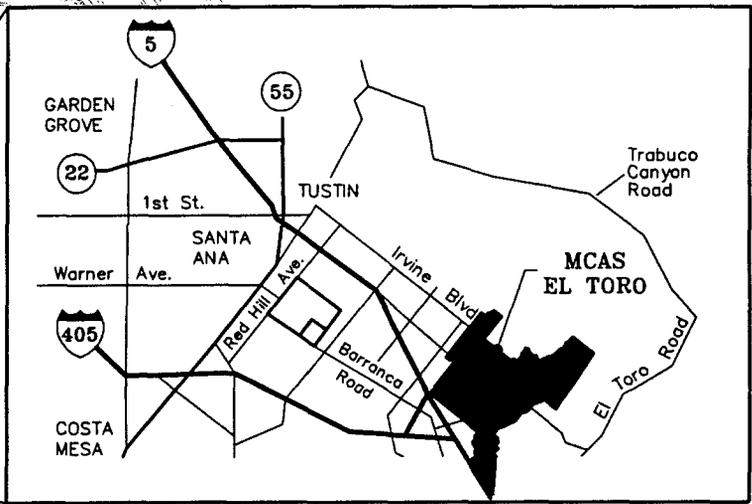
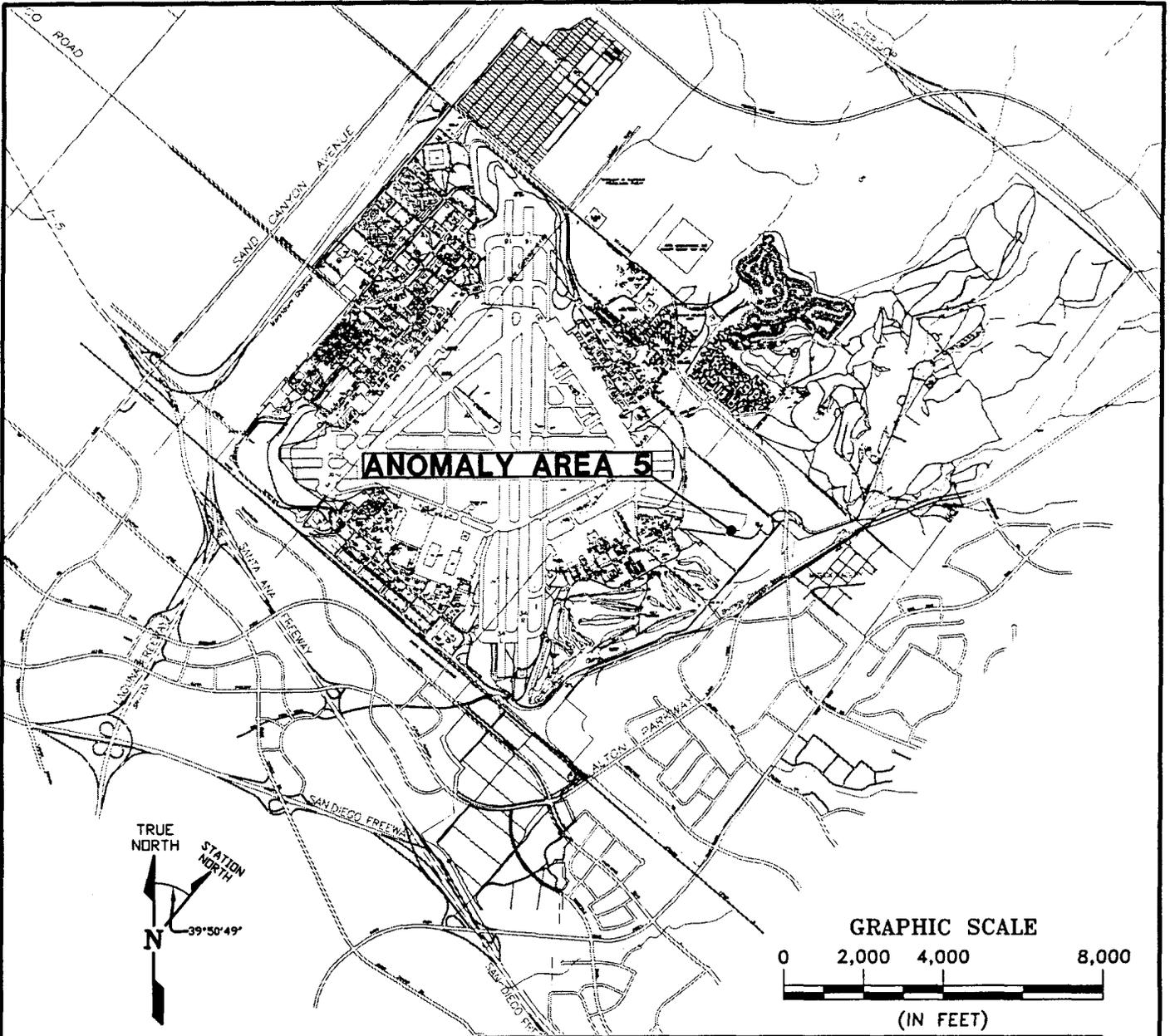
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# *Figures*

Aug. 10, 2000 - 16:23:07 I:\OHM CORP\PROJECTS\18609\18609295.dwg



**OHM Remediation Services Corp.**  
A Subsidiary of OHM Corporation  
SAN DIEGO, CA

|                 |                |      |         |
|-----------------|----------------|------|---------|
| DRAWN BY        | R. PIRMORADIAN | DATE | 8/10/00 |
| CHECKED BY      |                | DATE |         |
| APPROVED BY     | <i>DR</i>      | DATE | 8/11/00 |
| PROJECT MANAGER |                | DATE |         |

**FACILITY LOCATION MAP  
ANOMALY AREA 5**

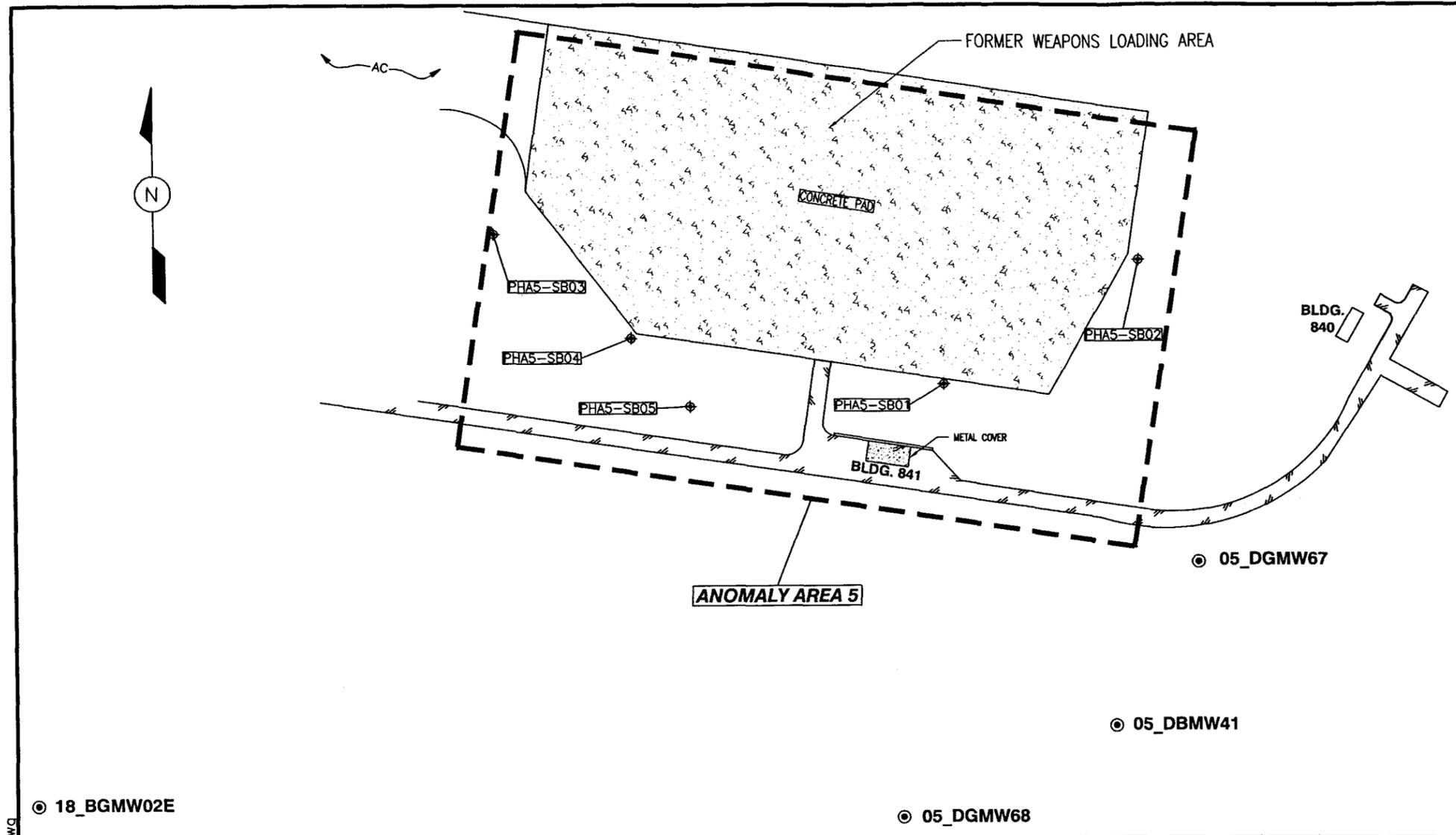
**MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA**

CONTRACT NAME  
**SWDIV**

|                                  |                   |            |         |                    |                                |                          |                       |               |
|----------------------------------|-------------------|------------|---------|--------------------|--------------------------------|--------------------------|-----------------------|---------------|
| AUTOCAD FILE No.<br>18609295.DWG | PLOT SCALE<br>1=1 | SHEET<br>1 | OF<br>1 | SCALE<br>1"=4,000' | DOCUMENT CONTROL No.<br>SW7997 | OHM PROJECT No.<br>18609 | FIGURE No.<br>FIG 1-1 | REVISION<br>0 |
|----------------------------------|-------------------|------------|---------|--------------------|--------------------------------|--------------------------|-----------------------|---------------|



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- EXPLANATION:**
- PHAS-SB01 ◊ SOIL BORING
  - 18\_BGMW02A ● MONITORING WELL
  - /// EDGE OF PAVEMENT
  - APPROXIMATE SITE BOUNDARY OF ANOMALY AREA 5

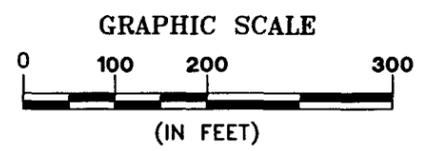
**Summary of Selected Analytes**

| Analyte Unit | Northing (NAD 83) | Easting (NAD 83) | Elevation (ft amsl) | Sample Number    | Depth (ft bgs) | TPH as Diesel mg/kg | TPH as Gasoline mg/kg | Benzene µg/kg | Ethylbenzene µg/kg | MTBE µg/kg | Toluene µg/kg | Xylenes (total) µg/kg |
|--------------|-------------------|------------------|---------------------|------------------|----------------|---------------------|-----------------------|---------------|--------------------|------------|---------------|-----------------------|
| PHAS-SB01    | 2189369.693       | 6117308.753      | 415.70              | 18609-2516       | 5.0            | 10 U                | 1 U                   | 5.1 U         | 5.1 U              | 10 U       | 5.1 U         | 5.1 U                 |
| PHAS-SB01    | 2189369.693       | 6117308.753      | 415.70              | 18609-2517       | 10.0           | 12 U                | 1.2 U                 | 6.1 U         | 6.1 U              | 12 U       | 6.1 U         | 6.1 U                 |
| PHAS-SB02    | 2189552.054       | 6117593.411      | 420.09              | 18609-2514       | 5.0            | 12 U                | 1.2 U                 | 5.8 U         | 5.8 U              | 12 U       | 5.8 U         | 5.8 U                 |
| PHAS-SB02    | 2189552.054       | 6117593.411      | 420.09              | 18609-2515       | 10.0           | 11 U                | 1.1 U                 | 5.7 U         | 5.7 U              | 11 U       | 5.7 U         | 5.7 U                 |
| PHAS-SB03    | 2189590.811       | 6116654.147      | 405.63              | 18609-2522       | 5.0            | 11 U                | 1.1 U                 | 5.5 U         | 5.5 U              | 11 U       | 5.5 U         | 5.5 U                 |
| PHAS-SB03    | 2189590.811       | 6116654.147      | 405.63              | 18609-2523 (Dup) | 5.5            | 12 U                | 1.2 U                 | 5.8 U         | 5.8 U              | 12 U       | 5.8 U         | 5.8 U                 |
| PHAS-SB03    | 2189590.811       | 6116654.147      | 405.63              | 18609-2524       | 10.0           | 10 U                | 1 U                   | 5.1 U         | 5.1 U              | 10 U       | 5.1 U         | 5.1 U                 |
| PHAS-SB04    | 2189437.804       | 6116853.192      | 409.00              | 18609-2520       | 5.0            | 11 U                | 1.1 U                 | 5.6 U         | 5.6 U              | 11 U       | 5.6 U         | 5.6 U                 |
| PHAS-SB04    | 2189437.804       | 6116853.192      | 409.00              | 18609-2521       | 10.0           | 11 U                | 1.1 U                 | 5.3 U         | 5.3 U              | 11 U       | 5.3 U         | 5.3 U                 |
| PHAS-SB05    | 2189336.962       | 6116938.700      | 409.49              | 18609-2518       | 5.0            | 10 U                | 1 U                   | 5.2 U         | 5.2 U              | 10 U       | 5.2 U         | 5.2 U                 |
| PHAS-SB05    | 2189336.962       | 6116938.700      | 409.49              | 18609-2519       | 10.0           | 11 U                | 1.1 U                 | 5.5 U         | 5.5 U              | 11 U       | 5.5 U         | 5.5 U                 |

Sampled on 12/10/99

Explanation:  
 NAD 83 - North American Datum 1983  
 ft bgs - feet below ground surface  
 EPA - US Environmental Protection Agency  
 mg/kg - milligrams per kilogram

TPH - Total petroleum hydrocarbons  
 U - not detected at or above the stated reporting limits  
 ug/kg - Micrograms per kilogram  
 MTBE - Methyl tertiary butyl ether



| REVISIONS |  |          |          |
|-----------|--|----------|----------|
| REV. No.  | DESCRIPTION                              | DATE     | APPROVED |
| 01        | 97102PH-5.DWG BY CALVADA SURVEYING, INC. | 12/14/95 |          |

|                                    |                 |  |                        |
|------------------------------------|-----------------|--|------------------------|
| CONTRACT NAME<br><b>SWDIV</b>      |                 | OHM Remediation Services Corp.<br>A Subsidiary of OHM Corporation<br>IRVINE, CA                    |                        |
| DRAWN BY<br>R. PIRMORADIAN         | DATE<br>11/1/00 | <b>SITE PLAN<br/>ANOMALY AREA 5</b><br><br><b>MARINE CORPS AIR STATION<br/>EL TORO, CALIFORNIA</b> |                        |
| CHECKED BY<br><i>July Erwin</i>    | DATE<br>11/1/00 |  |                        |
| APPROVED BY<br><i>[Signature]</i>  | DATE<br>11/1/00 |  |                        |
| PROJECT MANAGER<br><i>D. Kavel</i> | DATE<br>11/1/00 |  |                        |
| AUTOCAD FILE No.<br>18609293.DWG   |                 | SCALE<br>1"=200'   | SHEET OF<br>1 1        |
| DOCUMENT CONTROL No.<br>SW7997     |                 | OHM PROJECT No.<br>18609   | DRAWING No.<br>FIG 4-1 |

# *Tables*

**Table 2-1  
Sampling Activities at Tank Sites or other Environmental Locations of Concern near  
Anomaly Area 5.**

| <b>Site Identification<br/>Number</b> | <b>Status</b>   | <b>Comments</b>  |
|---------------------------------------|---|--|
| South of Anomaly Area 5               |   |  |
| UST 442                               | No Further Action, Site was closed by Orange County Health Care Agency (OCHCA) in December 1996                           | Confirmation sampling was conducted with the oversight by OCHCA  |
| RCRA Permitted Facility 673-T3        | No Further Action, Building 673-T3 was closed by California Department of Toxic Substance Control (DTSC) on March 8, 1996 | Sampling was conducted during decontamination of Building 673-T3 structure   |
| TAA 772                               | Field work completed and Closure Report submitted to DTSC with recommendation for No Further Action                       | 5 shallow hand auger borings during the RFA  |
| SWMU 225                              | TAA 772 was investigated as SWMU 225.   | Soil sampling was conducted during the RFA   |
| MSC D1                                | Pending Recommendation for No Further Action status   | Soil sampling was conducted during the RFA and 8 soil borings were drilled by OHM in 1999  |
| SWMU 181                              | NFA for former land farming area  | Soil sampling was conducted during the RFA   |
| SWMU 264                              | NFA for former DRMO Storage Yard No.3   | Soil sampling was conducted during the RFA   |
| IRP Site 5                            | RI, FS, and Proposed Plan (PP) complete. Draft ROD submitted in 1999. Awaiting results of radiological survey             | VOCs, SVOCs, petroleum hydrocarbons, herbicides, metals and Gross alpha, beta have been detected in the groundwater from 3 wells at IRP Site 5 located southeast of Anomaly Area 5 |

**Table 3-1**  
**Groundwater Monitoring Well Data Summary – Anomaly Area 5**

| Monitoring Well Identification Number | Approximate Distance from Anomaly Area 5 (feet) | Direction from Anomaly Area 5 | Top of Casing (feet, msl) | Screened Interval (feet, bgs) | Depth to Water (feet TOC) | Well Total Depth (feet, bgs) | Depth to Groundwater (feet, msl) |
|---------------------------------------|---|-------------------------------|---------------------------|-------------------------------|---------------------------|------------------------------|----------------------------------|
| 18_BGMW02E                            | 950   | Southeast                     | 391.72                    | 198-233                       | 163.64                    | 238                          | 228.08                           |
| 05_DGMW67                             | 240   | Southeast                     | 429                       | 177-227                       | 163.20                    | 232                          | 265.70                           |
| 05_DGMW68                             | 600   | Southeast                     | 417                       | 190-210                       | 164.22                    | 215                          | 252.78                           |

*bgs – below ground surface*

*MSC – miscellaneous site of concern*

*TOC – top of casing*

*msl – mean sea level*

**Table 4-1**  
**Summary of Analytical Results — Anomaly Area 5**

| Sample Identification             |       |            |                 |                | 18609-2516 | 18609-2517 | 18609-2514 | 18609-2515 | 18609-2522 |
|-----------------------------------|-------|------------|-----------------|----------------|------------|------------|------------|------------|------------|
| Location Code                     |       |            |                 |                | PHA5-SB01  | PHA5-SB01  | PHA5-SB02  | PHA5-SB02  | PHA5-SB03  |
| Date Sampled                      |       |            |                 |                | 12/10/99   | 12/10/99   | 12/10/99   | 12/10/99   | 12/10/99   |
| Depth (feet below ground surface) |       |            |                 |                | 5.0        | 10.0       | 5.0        | 10.0       | 5.0        |
|                                   | Unit  | Background | Residential PRG | Industrial PRG |            |            |            |            |            |
| <b>CA LUFT 8015M</b>              |       |            |                 |                |            |            |            |            |            |
| TPH as Diesel                     | mg/kg | NE         | NE              | NE             | 10 U       | 12 U       | 12 U       | 11 U       | 11 U       |
| TPH as Gasoline                   | mg/kg | NE         | NE              | NE             | 1 U        | 1.2 U      | 1.2 U      | 1.1 U      | 1.1 U      |
| <b>EPA 8260A</b>                  |       |            |                 |                |            |            |            |            |            |
| 1,1,1-Trichloroethane             | µg/kg | NE         | 770000          | 1400000        | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 1,1,2,2-Tetrachloroethane         | µg/kg | NE         | 380             | 900            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 1,1,2-Trichloroethane             | µg/kg | NE         | 840             | 1900           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 1,1-Dichloroethane                | µg/kg | NE         | 590000          | 2100000        | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 1,1-Dichloroethene                | µg/kg | NE         | 54              | 120            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 1,2-Dichloroethane                | µg/kg | NE         | 350             | 760            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 1,2-Dichloropropane               | µg/kg | NE         | 350             | 770            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| 2-Butanone (MEK)                  | µg/kg | NE         | 7300000         | 28000000       | 51 U       | 61 U       | 58 U       | 57 U       | 55 U       |
| 2-Chloroethyl vinyl ether         | µg/kg | NE         | NE              | NE             | 51 U       | 61 U       | 58 U       | 57 U       | 55 U       |
| 2-Hexanone                        | µg/kg | NE         | NE              | NE             | 51 U       | 61 U       | 58 U       | 57 U       | 55 U       |
| 4-Methyl-2-pentanone (MIBK)       | µg/kg | NE         | 790000          | 2900000        | 51 U       | 61 U       | 58 U       | 57 U       | 55 U       |
| Acetone                           | µg/kg | NE         | 1600000         | 6200000        | 51 U       | 61 U       | 58 U       | 57 U       | 18 J       |
| Benzene                           | µg/kg | NE         | 670             | 1500           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Bromodichloromethane              | µg/kg | NE         | 1000            | 2400           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Bromoform                         | µg/kg | NE         | 62000           | 310000         | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Bromomethane                      | µg/kg | NE         | 3900            | 13000          | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Carbon disulfide                  | µg/kg | NE         | 360000          | 720000         | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Carbon tetrachloride              | µg/kg | NE         | 240             | 530            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Chlorobenzene                     | µg/kg | NE         | 150000          | 540000         | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Chloroethane                      | µg/kg | NE         | 3000            | 6500           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Chloroform                        | µg/kg | NE         | 240             | 520            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Chloromethane                     | µg/kg | NE         | 1200            | 2700           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| cis-1,2-Dichloroethene            | µg/kg | NE         | 43000           | 150000         | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| cis-1,3-Dichloropropene           | µg/kg | NE         | 82              | 180            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Dibromochloromethane              | µg/kg | NE         | 1100            | 2700           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Ethylbenzene                      | µg/kg | NE         | 230000          | 230000         | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Methyl tert-butyl ether (MTBE)    | µg/kg | NE         | NE              | NE             | 10 U       | 12 U       | 12 U       | 11 U       | 11 U       |
| Methylene chloride                | µg/kg | NE         | 8900            | 21000          | 3.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 2 J        |
| Styrene                           | µg/kg | NE         | 1700000         | 1700000        | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |

**Table 4-1**  
**Summary of Analytical Results — Anomaly Area 5**

| Sample Identification             |       |            |                    |                   | 18609-2516 | 18609-2517 | 18609-2514 | 18609-2515 | 18609-2522 |
|-----------------------------------|-------|------------|--------------------|-------------------|------------|------------|------------|------------|------------|
| Location Code                     |       |            |                    |                   | PHA5-SB01  | PHA5-SB01  | PHA5-SB02  | PHA5-SB02  | PHA5-SB03  |
| Date Sampled                      |       |            |                    |                   | 12/10/99   | 12/10/99   | 12/10/99   | 12/10/99   | 12/10/99   |
| Depth (feet below ground surface) |       |            |                    |                   | 5.0        | 10.0       | 5.0        | 10.0       | 5.0        |
|                                   | Unit  | Background | Residential<br>PRG | Industrial<br>PRG |            |            |            |            |            |
| Tetrachloroethene                 | µg/kg | NE         | 5700               | 19000             | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Toluene                           | µg/kg | NE         | 520000             | 520000            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| trans-1,2-Dichloroethene          | µg/kg | NE         | 63000              | 210000            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| trans-1,3-Dichloropropene         | µg/kg | NE         | 82                 | 180               | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Trichloroethene                   | µg/kg | NE         | 2800               | 6100              | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Vinyl acetate                     | µg/kg | NE         | 430000             | 1400000           | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Vinyl chloride                    | µg/kg | NE         | 22                 | 49                | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| Xylenes (total)                   | µg/kg | NE         | 210000             | 210000            | 5.1 U      | 6.1 U      | 5.8 U      | 5.7 U      | 5.5 U      |
| <i>EPA 6010A</i>                  |       |            |                    |                   |            |            |            |            |            |
| Antimony                          | mg/kg | 3.06       | 31                 | 820               | 10.2 U B   | 12.2 U B   | 11.6 U B   | 11.4 U B   | 11.1 U B   |
| Arsenic                           | mg/kg | 6.86       | 0.39               | 2.7               | 1.02 U Y   | 3.57 Y X   | 2.67 Y     | 2.57 Y     | 2.84 Y X   |
| Barium                            | mg/kg | 173        | 5400               | 100000            | 11.8       | 144        | 99.2       | 75.2       | 112        |
| Beryllium                         | mg/kg | 0.669      | 150                | 2200              | .204 U     | .618       | .505       | .419       | .502       |
| Cadmium                           | mg/kg | 2.35       | 9.0                | 810               | 1.02 U     | 1.22 U     | 1.16 U     | 1.14 U     | 1.11 U     |
| Chromium                          | mg/kg | 26.9       | 210                | 450               | 1.02 U     | 13.5       | 12.2       | 9.81       | 11.1       |
| Cobalt                            | mg/kg | 6.98       | 4700               | 100000            | 1.02 U     | 5.45       | 5.22       | 2.67       | 4.55       |
| Copper                            | mg/kg | 10.5       | 2900               | 76000             | 1.02 U     | 8.25       | 7.48       | 4.86       | 6.89       |
| Lead                              | mg/kg | 15.1       | 400                | 1000              | 1.02 U     | 3.42       | 3.17       | 2.76       | 2.63       |
| Manganese                         | mg/kg | 291        | 1800               | 32000             | 31.7       | 239        | 233        | 75.4       | 214        |
| Molybdenum                        | mg/kg | NE         | 390                | 10000             | 2.04 U     | 2.44 U     | 2.31 U     | 2.28 U     | 2.22 U     |
| Nickel                            | mg/kg | 15.3       | 150                | 41000             | 2.04 U     | 9.3        | 8.47       | 5.37       | 7.39       |
| Selenium                          | mg/kg | 0.32       | 390                | 10000             | 1.02 U B   | 1.22 U B   | 1.16 U B   | 1.14 U B   | 1.11 U B   |
| Silver                            | mg/kg | 0.539      | 390                | 10000             | 2.04 U B   | 2.44 U B   | 2.31 U B   | 2.28 U B   | 2.22 U B   |
| Thallium                          | mg/kg | 0.42       | 5.5                | 140               | 1.02 U B   | 1.22 U B   | 1.19 B     | 1.14 U B   | 1.11 U B   |
| Vanadium                          | mg/kg | 71.8       | 550                | 14000             | 3.27       | 36.2       | 30.3       | 23         | 28.7       |
| Zinc                              | mg/kg | 77.9       | 23000              | 100000            | 4.09       | 40         | 30.3       | 23.4       | 36         |
| <i>EPA 7471A</i>                  |       |            |                    |                   |            |            |            |            |            |
| Mercury                           | mg/kg | 0.22       | 23                 | 610               | .102 U     | .122 U     | .116 U     | .114 U     | .111 U     |

**Table 4-1  
Summary of Analytical Results — Anomaly Area 5**

| Sample Identification             |       |            |                 |                | 18609-2523 (Dup) | 18609-2524 | 18609-2520 | 18609-2521 | 18609-2518 |
|-----------------------------------|-------|------------|-----------------|----------------|------------------|------------|------------|------------|------------|
| Location Code                     |       |            |                 |                | PHA5-SB03        | PHA5-SB03  | PHA5-SB04  | PHA5-SB04  | PHA5-SB05  |
| Date Sampled                      |       |            |                 |                | 12/10/99         | 12/10/99   | 12/10/99   | 12/10/99   | 12/10/99   |
| Depth (feet below ground surface) |       |            |                 |                | 5.5              | 10.0       | 5.0        | 10.0       | 5.0        |
|                                   | Unit  | Background | Residential PRG | Industrial PRG |                  |            |            |            |            |
| <i>CA LUFT 8015M</i>              |       |            |                 |                |                  |            |            |            |            |
| TPH as Diesel                     | mg/kg | NE         | NE              | NE             | 12 U             | 10 U       | 11 U       | 11 U       | 10 U       |
| TPH as Gasoline                   | mg/kg | NE         | NE              | NE             | 1.2 U            | 1 U        | 1.1 U      | 1.1 U      | 1 U        |
| <i>EPA 8260A</i>                  |       |            |                 |                |                  |            |            |            |            |
| 1,1,1-Trichloroethane             | µg/kg | NE         | 770000          | 1400000        | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 1,1,2,2-Tetrachloroethane         | µg/kg | NE         | 380             | 900            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 1,1,2-Trichloroethane             | µg/kg | NE         | 840             | 1900           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 1,1-Dichloroethane                | µg/kg | NE         | 590000          | 2100000        | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 1,1-Dichloroethene                | µg/kg | NE         | 54              | 120            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 1,2-Dichloroethane                | µg/kg | NE         | 350             | 760            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 1,2-Dichloropropane               | µg/kg | NE         | 350             | 770            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| 2-Butanone (MEK)                  | µg/kg | NE         | 7300000         | 28000000       | 58 U             | 51 U       | 56 U       | 53 U       | 52 U       |
| 2-Chloroethyl vinyl ether         | µg/kg | NE         | NE              | NE             | 58 U             | 51 U       | 56 U       | 53 U       | 52 U       |
| 2-Hexanone                        | µg/kg | NE         | NE              | NE             | 58 U             | 51 U       | 56 U       | 53 U       | 52 U       |
| 4-Methyl-2-pentanone (MIBK)       | µg/kg | NE         | 790000          | 2900000        | 58 U             | 51 U       | 56 U       | 53 U       | 52 U       |
| Acetone                           | µg/kg | NE         | 1600000         | 6200000        | 58 U             | 51 U       | 56 U       | 53 U       | 52 U       |
| Benzene                           | µg/kg | NE         | 670             | 1500           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Bromodichloromethane              | µg/kg | NE         | 1000            | 2400           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Bromoform                         | µg/kg | NE         | 62000           | 310000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Bromomethane                      | µg/kg | NE         | 3900            | 13000          | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Carbon disulfide                  | µg/kg | NE         | 360000          | 720000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Carbon tetrachloride              | µg/kg | NE         | 240             | 530            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Chlorobenzene                     | µg/kg | NE         | 150000          | 540000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Chloroethane                      | µg/kg | NE         | 3000            | 6500           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Chloroform                        | µg/kg | NE         | 240             | 520            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Chloromethane                     | µg/kg | NE         | 1200            | 2700           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| cis-1,2-Dichloroethene            | µg/kg | NE         | 43000           | 150000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| cis-1,3-Dichloropropene           | µg/kg | NE         | 82              | 180            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Dibromochloromethane              | µg/kg | NE         | 1100            | 2700           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Ethylbenzene                      | µg/kg | NE         | 230000          | 230000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Methyl tert-butyl ether (MTBE)    | µg/kg | NE         | NE              | NE             | 12 U             | 10 U       | 11 U       | 11 U       | 10 U       |
| Methylene chloride                | µg/kg | NE         | 8900            | 21000          | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Styrene                           | µg/kg | NE         | 1700000         | 1700000        | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |

**Table 4-1  
Summary of Analytical Results — Anomaly Area 5**

| Sample Identification             |       |            |                 |                | 18609-2523 (Dup) | 18609-2524 | 18609-2520 | 18609-2521 | 18609-2518 |
|-----------------------------------|-------|------------|-----------------|----------------|------------------|------------|------------|------------|------------|
| Location Code                     |       |            |                 |                | PHA5-SB03        | PHA5-SB03  | PHA5-SB04  | PHA5-SB04  | PHA5-SB05  |
| Date Sampled                      |       |            |                 |                | 12/10/99         | 12/10/99   | 12/10/99   | 12/10/99   | 12/10/99   |
| Depth (feet below ground surface) |       |            |                 |                | 5.5              | 10.0       | 5.0        | 10.0       | 5.0        |
|                                   | Unit  | Background | Residential PRG | Industrial PRG |                  |            |            |            |            |
| Tetrachloroethene                 | µg/kg | NE         | 5700            | 19000          | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Toluene                           | µg/kg | NE         | 520000          | 520000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| trans-1,2-Dichloroethene          | µg/kg | NE         | 63000           | 210000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| trans-1,3-Dichloropropene         | µg/kg | NE         | 82              | 180            | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Trichloroethene                   | µg/kg | NE         | 2800            | 6100           | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Vinyl acetate                     | µg/kg | NE         | 430000          | 1400000        | 58 U             | 51 U       | 56 U       | 53 U       | 52 U       |
| Vinyl chloride                    | µg/kg | NE         | 22              | 49             | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| Xylenes (total)                   | µg/kg | NE         | 210000          | 210000         | 5.8 U            | 5.1 U      | 5.6 U      | 5.3 U      | 5.2 U      |
| <i>EPA 6010A</i>                  |       |            |                 |                |                  |            |            |            |            |
| Antimony                          | mg/kg | 3.06       | 31              | 820            | 11.5 U B         | 10.3 U B   | 11.2 U B   | 10.6 U B   | 10.5 U B   |
| Arsenic                           | mg/kg | 6.86       | 0.39            | 2.7            | 3.27 Y X         | 1.2 Y      | 2.37 Y     | 1.7 Y      | 1.87 Y     |
| Barium                            | mg/kg | 173        | 5400            | 100000         | 113              | 25.3       | 76         | 45.9       | 56.8       |
| Beryllium                         | mg/kg | 0.669      | 150             | 2200           | .529             | .206 U     | .331       | .212 U     | .255       |
| Cadmium                           | mg/kg | 2.35       | 9.0             | 810            | 1.15 U           | 1.03 U     | 1.12 U     | 1.06 U     | 1.05 U     |
| Chromium                          | mg/kg | 26.9       | 210             | 450            | 12.2             | 3.38       | 7.43       | 5.32       | 5.68       |
| Cobalt                            | mg/kg | 6.98       | 4700            | 100000         | 4.34             | 1.32       | 3.05       | 1.77       | 2.01       |
| Copper                            | mg/kg | 10.5       | 2900            | 76000          | 6.9              | 1.82       | 4.42       | 3.02       | 3.23       |
| Lead                              | mg/kg | 15.1       | 400             | 1000           | 2.76             | 1.03 U     | 1.76       | 1.06 U     | 1.5        |
| Manganese                         | mg/kg | 291        | 1800            | 32000          | 223              | 76.4       | 163        | 87.7       | 132        |
| Molybdenum                        | mg/kg | NE         | 390             | 10000          | 2.3 U            | 2.06 U     | 2.23 U     | 2.12 U     | 2.09 U     |
| Nickel                            | mg/kg | 15.3       | 150             | 41000          | 8.04             | 2.08       | 4.89       | 4.81       | 3.8        |
| Selenium                          | mg/kg | 0.32       | 390             | 10000          | 1.15 U B         | 1.03 U B   | 1.12 U B   | 1.06 U B   | 1.05 U B   |
| Silver                            | mg/kg | 0.539      | 390             | 10000          | 2.3 U B          | 2.06 U B   | 2.23 U B   | 2.12 U B   | 2.09 U B   |
| Thallium                          | mg/kg | 0.42       | 5.5             | 140            | 1.15 U B         | 1.03 U B   | 1.41 B     | 1.06 U B   | 1.05 U B   |
| Vanadium                          | mg/kg | 71.8       | 550             | 14000          | 32.3             | 8.97       | 22.8       | 15.2       | 17         |
| Zinc                              | mg/kg | 77.9       | 23000           | 100000         | 38.2             | 9.3        | 25.7       | 15.1       | 21.4       |
| <i>EPA 7471A</i>                  |       |            |                 |                |                  |            |            |            |            |
| Mercury                           | mg/kg | 0.22       | 23              | 610            | .115 U           | .103 U     | .112 U     | .106 U     | .105 U     |

**Table 4-1**  
**Summary of Analytical Results — Anomaly Area 5**

| Sample Identification             |       |            |                    |                   | 18609-2519 |
|-----------------------------------|-------|------------|--------------------|-------------------|------------|
| Location Code                     |       |            |                    |                   | PHA5-SB05  |
| Date Sampled                      |       |            |                    |                   | 12/10/99   |
| Depth (feet below ground surface) |       |            |                    |                   | 10.0       |
|                                   | Unit  | Background | Residential<br>PRG | Industrial<br>PRG |            |
| <i>CA LUFT 8015M</i>              |       |            |                    |                   |            |
| TPH as Diesel                     | mg/kg | NE         | NE                 | NE                | 11 U       |
| TPH as Gasoline                   | mg/kg | NE         | NE                 | NE                | 1.1 U      |
| <i>EPA 8260A</i>                  |       |            |                    |                   |            |
| 1,1,1-Trichloroethane             | µg/kg | NE         | 770000             | 1400000           | 5.5 U      |
| 1,1,2,2-Tetrachloroethane         | µg/kg | NE         | 380                | 900               | 5.5 U      |
| 1,1,2-Trichloroethane             | µg/kg | NE         | 840                | 1900              | 5.5 U      |
| 1,1-Dichloroethane                | µg/kg | NE         | 590000             | 2100000           | 5.5 U      |
| 1,1-Dichloroethene                | µg/kg | NE         | 54                 | 120               | 5.5 U      |
| 1,2-Dichloroethane                | µg/kg | NE         | 350                | 760               | 5.5 U      |
| 1,2-Dichloropropane               | µg/kg | NE         | 350                | 770               | 5.5 U      |
| 2-Butanone (MEK)                  | µg/kg | NE         | 7300000            | 28000000          | 55 U       |
| 2-Chloroethyl vinyl ether         | µg/kg | NE         | NE                 | NE                | 55 U       |
| 2-Hexanone                        | µg/kg | NE         | NE                 | NE                | 55 U       |
| 4-Methyl-2-pentanone (MIBK)       | µg/kg | NE         | 790000             | 2900000           | 55 U       |
| Acetone                           | µg/kg | NE         | 1600000            | 6200000           | 55 U       |
| Benzene                           | µg/kg | NE         | 670                | 1500              | 5.5 U      |
| Bromodichloromethane              | µg/kg | NE         | 1000               | 2400              | 5.5 U      |
| Bromoform                         | µg/kg | NE         | 62000              | 310000            | 5.5 U      |
| Bromomethane                      | µg/kg | NE         | 3900               | 13000             | 5.5 U      |
| Carbon disulfide                  | µg/kg | NE         | 360000             | 720000            | 5.5 U      |
| Carbon tetrachloride              | µg/kg | NE         | 240                | 530               | 5.5 U      |
| Chlorobenzene                     | µg/kg | NE         | 150000             | 540000            | 5.5 U      |
| Chloroethane                      | µg/kg | NE         | 3000               | 6500              | 5.5 U      |
| Chloroform                        | µg/kg | NE         | 240                | 520               | 5.5 U      |
| Chloromethane                     | µg/kg | NE         | 1200               | 2700              | 5.5 U      |
| cis-1,2-Dichloroethene            | µg/kg | NE         | 43000              | 150000            | 5.5 U      |
| cis-1,3-Dichloropropene           | µg/kg | NE         | 82                 | 180               | 5.5 U      |
| Dibromochloromethane              | µg/kg | NE         | 1100               | 2700              | 5.5 U      |
| Ethylbenzene                      | µg/kg | NE         | 230000             | 230000            | 5.5 U      |
| Methyl tert-butyl ether (MTBE)    | µg/kg | NE         | NE                 | NE                | 11 U       |
| Methylene chloride                | µg/kg | NE         | 8900               | 21000             | 5.5 U      |
| Styrene                           | µg/kg | NE         | 1700000            | 1700000           | 5.5 U      |

**Table 4-1**  
**Summary of Analytical Results — Anomaly Area 5**

| Sample Identification             |       |            |                    |                   | 18609-2519 |
|-----------------------------------|-------|------------|--------------------|-------------------|------------|
| Location Code                     |       |            |                    |                   | PHA5-SB05  |
| Date Sampled                      |       |            |                    |                   | 12/10/99   |
| Depth (feet below ground surface) |       |            |                    |                   | 10.0       |
|                                   | Unit  | Background | Residential<br>PRG | Industrial<br>PRG |            |
| Tetrachloroethene                 | µg/kg | NE         | 5700               | 19000             | 5.5 U      |
| Toluene                           | µg/kg | NE         | 520000             | 520000            | 5.5 U      |
| trans-1,2-Dichloroethene          | µg/kg | NE         | 63000              | 210000            | 5.5 U      |
| trans-1,3-Dichloropropene         | µg/kg | NE         | 82                 | 180               | 5.5 U      |
| Trichloroethene                   | µg/kg | NE         | 2800               | 6100              | 5.5 U      |
| Vinyl acetate                     | µg/kg | NE         | 430000             | 1400000           | 55 U       |
| Vinyl chloride                    | µg/kg | NE         | 22                 | 49                | 5.5 U      |
| Xylenes (total)                   | µg/kg | NE         | 210000             | 210000            | 5.5 U      |
| <i>EPA 6010A</i>                  |       |            |                    |                   |            |
| Antimony                          | mg/kg | 3.06       | 31                 | 820               | 11 U B     |
| Arsenic                           | mg/kg | 6.86       | 0.39               | 2.7               | 2.33 Y     |
| Barium                            | mg/kg | 173        | 5400               | 100000            | 61.2       |
| Beryllium                         | mg/kg | 0.669      | 150                | 2200              | .275       |
| Cadmium                           | mg/kg | 2.35       | 9.0                | 810               | 1.1 U      |
| Chromium                          | mg/kg | 26.9       | 210                | 450               | 6.65       |
| Cobalt                            | mg/kg | 6.98       | 4700               | 100000            | 2.91       |
| Copper                            | mg/kg | 10.5       | 2900               | 76000             | 3.89       |
| Lead                              | mg/kg | 15.1       | 400                | 1000              | 1.71       |
| Manganese                         | mg/kg | 291        | 1800               | 32000             | 153        |
| Molybdenum                        | mg/kg | NE         | 390                | 10000             | 2.21 U     |
| Nickel                            | mg/kg | 15.3       | 150                | 41000             | 4.33       |
| Selenium                          | mg/kg | 0.32       | 390                | 10000             | 1.1 U B    |
| Silver                            | mg/kg | 0.539      | 390                | 10000             | 2.21 U B   |
| Thallium                          | mg/kg | 0.42       | 5.5                | 140               | 1.1 U B    |
| Vanadium                          | mg/kg | 71.8       | 550                | 14000             | 20         |
| Zinc                              | mg/kg | 77.9       | 23000              | 100000            | 22.4       |
| <i>EPA 7471A</i>                  |       |            |                    |                   |            |
| Mercury                           | mg/kg | 0.22       | 23                 | 610               | .11 U      |

OHM Remediation Services Corp.

**Table 4-1**  
**Summary of Analytical Results — Anomaly Area 5**

**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.

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

RL - reporting limit

SB - soil boring

TPH - total petroleum hydrocarbons

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

If the analyte had been detected between the MDL and RL the actual value would have been reported and flagged with

a "J" qualifier. For the samples in question, the laboratory did not detect analyte concentrations between the MDL and the RL. As a result, the samples are qualified as non-detect ("U").

X - result exceeds industrial PRGs

Y - result exceeds residential PRGs

µg/kg - micrograms per kilogram

**Table 4-2**  
**Summary of Analytical Results for QC Samples — Anomaly Area 5**

| Sample Identification          |      | 18609-2513 | 18609-2525        |
|--------------------------------|------|------------|-------------------|
| Location Code                  |      | Trip Blank | Equipment Rinsate |
| Date Sampled                   |      | 12/10/99   | 12/10/99          |
|                                | Unit |            |                   |
| <i>CA LUFT 8015M</i>           |      |            |                   |
| TPH as Diesel                  | mg/L | NA         | .098 U            |
| TPH as Gasoline                | mg/L | .1 U       | .1 U              |
| <i>EPA 8260A</i>               |      |            |                   |
| 1,1,1-Trichloroethane          | µg/L | 5 U        | 5 U               |
| 1,1,2,2-Tetrachloroethane      | µg/L | 5 U        | 5 U               |
| 1,1,2-Trichloroethane          | µg/L | 5 U        | 5 U               |
| 1,1-Dichloroethane             | µg/L | 5 U        | 5 U               |
| 1,1-Dichloroethene             | µg/L | 5 U        | 5 U               |
| 1,2-Dichloroethane             | µg/L | 5 U        | 5 U               |
| 1,2-Dichloropropane            | µg/L | 5 U        | 5 U               |
| 2-Butanone (MEK)               | µg/L | 50 U       | 50 U              |
| 2-Chloroethyl vinyl ether      | µg/L | 50 U       | 50 U              |
| 2-Hexanone                     | µg/L | 50 U       | 50 U              |
| 4-Methyl-2-pentanone (MIBK)    | µg/L | 50 U       | 50 U              |
| Acetone                        | µg/L | 50 U       | 50 U              |
| Benzene                        | µg/L | 5 U        | 5 U               |
| Bromodichloromethane           | µg/L | 5 U        | 5 U               |
| Bromoform                      | µg/L | 5 U        | 5 U               |
| Bromomethane                   | µg/L | 5 U        | 5 U               |
| Carbon disulfide               | µg/L | 5 U        | 5 U               |
| Carbon tetrachloride           | µg/L | 5 U        | 5 U               |
| Chlorobenzene                  | µg/L | 5 U        | 5 U               |
| Chloroethane                   | µg/L | 5 U        | 5 U               |
| Chloroform                     | µg/L | 5 U        | 5 U               |
| Chloromethane                  | µg/L | 5 U        | 5 U               |
| cis-1,2-Dichloroethene         | µg/L | 5 U        | 5 U               |
| cis-1,3-Dichloropropene        | µg/L | 5 U        | 5 U               |
| Dibromochloromethane           | µg/L | 5 U        | 5 U               |
| Ethylbenzene                   | µg/L | 5 U        | 5 U               |
| Methyl tert-butyl ether (MTBE) | µg/L | 10 U       | 10 U              |
| Methylene chloride             | µg/L | 5 U        | 5 U               |
| Styrene                        | µg/L | 5 U        | 5 U               |
| Tetrachloroethene              | µg/L | 5 U        | 5 U               |
| Toluene                        | µg/L | 5 U        | 5 U               |

OHM Remediation Services Corp.

**Table 4-2**  
**Summary of Analytical Results for QC Samples — Anomaly Area 5**

**Explanation:**

CA LUFT - California Leaking Underground Fuel Tank

EPA - United States Environmental Protection Agency

J - estimated

M - Modified

mg/L - milligrams per liter

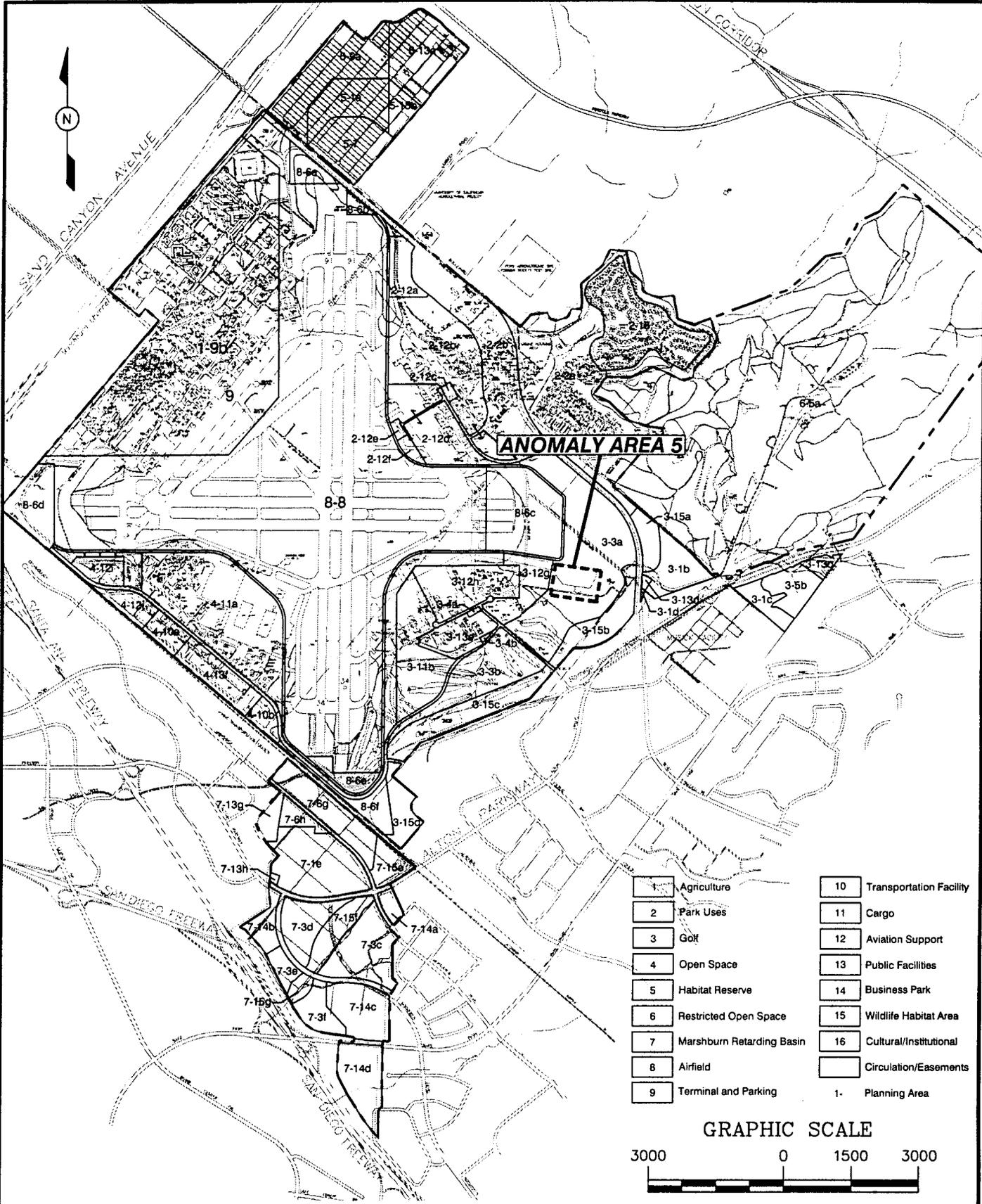
OHM - OHM Remediation Services Corp.

TPH - total petroleum hydrocarbons

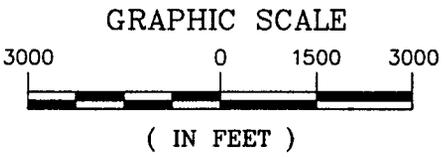
U - not detected above or equal to the stated reporting limit

µg/L - micrograms per liter

*Appendix A*  
*Preferred Land Use Plan Concept B*



|   |                           |    |                         |
|---|---------------------------|----|-------------------------|
| 1 | Agriculture               | 10 | Transportation Facility |
| 2 | Park Uses                 | 11 | Cargo                   |
| 3 | Golf                      | 12 | Aviation Support        |
| 4 | Open Space                | 13 | Public Facilities       |
| 5 | Habitat Reserve           | 14 | Business Park           |
| 6 | Restricted Open Space     | 15 | Wildlife Habitat Area   |
| 7 | Marshburn Retarding Basin | 16 | Cultural/Institutional  |
| 8 | Airfield                  |    | Circulation/Easements   |
| 9 | Terminal and Parking      | 1- | Planning Area           |



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|   |                          |                                   |                          |   |                                 |                              |                      |
|---|--------------------------|-----------------------------------|--------------------------|---|---------------------------------|------------------------------|----------------------|
| <b>OHM Remediation Services Corp.</b><br>A Subsidiary of OHM Corporation<br>SAN DIEGO, CA |                          | DRAWN BY<br><b>R. PIRMORADIAN</b> | DATE<br><b>07/14/00</b>  | <b>PREFERRED LAND USE PLAN OF ANOMALY AREA 5</b><br><br><b>MARINE CORPS AIR STATION EL TORO, CALIFORNIA</b> |                                 |                              |                      |
| CONTRACT NAME<br><b>SWDIV</b>   |                          | CHECKED BY<br><i>DR</i>           | DATE<br><b>7/14/00</b>   |   |                                 |                              |                      |
|   |                          | APPROVED BY                       | DATE                     |   |                                 |                              |                      |
|   |                          | PROJECT MANAGER                   | DATE                     |   |                                 |                              |                      |
| AUTOCAD FILE No.<br><b>18609303.DWG</b>   | PLOT SCALE<br><b>1=1</b> | SHEET OF<br><b>1 1</b>            | SCALE<br><b>1"=3000'</b> | DOCUMENT CONTROL No.<br><b>SW7997</b>   | OHM PROJECT No.<br><b>18609</b> | FIGURE No.<br><b>FIG A-1</b> | REVISION<br><b>0</b> |

***Appendix B***  
***Field Inspection Checklist***

## CHECKLIST

### Aerial Photograph Anomaly Program, Marine Corps Air Station, El Toro

#### Anomaly Identification Information:

Date of Photograph: 19 May 1971

| APHO (from BRAC Cleanup Plan) | SAIC | EPA |
|-------------------------------|------|-----|
| 31                            | 215  |     |

**Recommendation:** *No Further Investigation Status*

**Anomaly Description:** From source document: Final Report, Aerial Photograph Assessment (SAIC, 1993):

**SAIC 215:** *There is disturbed ground (DG) about 250 feet by 350 feet in area, dark-toned mounded material (MMDT), and a probable trench (TR), all about 1600 feet westerly of West Marine Road and Magazine Road. There is also a possible light-toned unidentified object (UO). Additional investigation of the site as a possible disposal or storage site is recommended. [Comment by the writer of the summary report: The annotations on the 1971 photograph in the SAIC report point to the unpaved access road as a trench and the grass unpaved area as dark toned mounded material.]*

**Visual Inspection Date (s):** 1 December 1999.

Participant(s) (with affiliation (s)) in inspection(s): Dhananjay Rawal  
OHM Corporation, Project Engineer

**Current Site Conditions:** Anomaly Area 5 is relatively flat. Building 840/841, former LOX/Explosive Safety office, with concrete pad is within Anomaly Area 5. More than half of Anomaly Area 5 is former weapons loading area concrete pad. Anomaly Area 5 is surrounded by grass-covered area to the south, the edges of the runways to the north, and IRP Site 5 to the southeast. MSC-D1 remains southwest of Anomaly Area 5. No evidence of recent excavations or trenches was observed during the inspection. Also, no stains or discolored areas were observed on the unpaved and concrete pad area of Anomaly Area 5. [Comment: APHO 31, 43, 66,67 and 68 are grouped together]

Is there visual evidence of the anomaly identified in the photograph present at the site? *None, No construction debris, materials or other items were being stored at the site.*

Is there evidence of past releases? *No*

Description of photograph(s): *Photographs of Anomaly Area 5 (adjacent to the east-end of the east-west runway and IRP Site 5).*

**Date of preparation of checklist:** December 3, 1999

## CHECKLIST

**Aerial Photograph Anomaly Program, Marine Corps Air Station, El Toro  
Anomaly Identification Information:  
Date of Photograph: 9 December 1974**

| <b>APHO (from BRAC<br/>Cleanup Plan)</b> | <b>SAIC</b> | <b>EPA</b> |
|--|-------------|------------|
| <b>43</b>                                | <b>287</b>  |            |

**Recommendation:** *No Further Investigation Status*

**Anomaly Description:** (from source document): Final Report, Aerial Photograph Assessment (SAIC, 1993):

**SAIC 287:** *There is an excavation (EX) about 1600 feet west of the Perimeter Road and Magazine Road intersection. The purpose of the excavation is unknown, and investigation of the site history as a possible disposal area is recommended.*

*[Comment by the writer of the summary report: The annotations on the 1974 photograph in the SAIC report point to a dark area that may have been a topographically low area that was filled with rainwater.]*

**Visual Inspection Date (s):** 1 December 1999.

**Participant(s) (with affiliation (s)) in inspection(s):** Dhananjay Rawal  
OHM Corporation, Project Engineer

**Current Site Conditions:** Anomaly Area 5 is relatively flat. Building 840/841, former LOX/Explosive Safety office, with concrete pad is within Anomaly Area 5. More than half of Anomaly Area 5 is former weapons loading area concrete pad and APHO 43 (SAIC 287) is located beneath the weapons loading pad. Anomaly Area 5 is surrounded by grass-covered area (which was mowed regularly to keep the grass from growing too high) and IRP Site 5 to the southeast. MSC-D1 is located southwest of Anomaly Area 5. No evidence of recent excavations or trenches was observed during the inspection. Also, no stains or discolored areas were observed on the unpaved and concrete pad area of Anomaly Area 5. [Comment: APHO 31, 43, 66,67 and 68 are grouped together]

Is there visual evidence of the anomaly identified in the photograph present at the site? *None, No construction debris, materials or other items were being stored at the site.*

Is there evidence of past releases? *No*

**Description of photograph(s):** *Photographs of Anomaly Area 5 (adjacent to the east-end of the east-west runway and IRP Site 5).*

**Date of preparation of checklist:** December 3, 1999

## CHECKLIST

### Aerial Photograph Anomaly Program, Marine Corps Air Station, El Toro

#### Anomaly Identification Information:

Date of Photograph: 27 June 1967

| APHO (from BRAC Cleanup Plan) | SAIC | EPA |
|-------------------------------|------|-----|
| 66                            | 161  |     |

**Recommendation:** *No Further Investigation Status*

**Anomaly Description:** (from source document): Final Report, Aerial Photograph Assessment (SAIC, 1993):

**SAIC 161:** *Disturbed ground (DG) and probable backfilled trenches (TR) are noted in the western corner of Perimeter Road and Magazine Road, and about 1400 feet westerly of the intersection. Additional investigation of the purpose of these sites is recommended. The northeasterly-oriented, backfilled trench (TR) adjacent to Perimeter Road is the Perimeter Road Landfill (Site 5). No Additional investigation of Site 5 is recommended at this time. The present IR program field investigation Site 5 appears to be adequate, relative to the features noted here. [Comment by the writer of the summary report: The annotations on the 1967 photograph in the SAIC report point to the unpaved area next to concrete pad as a trench.]*

**Visual Inspection Date (s):** 1 December 1999.

Participant(s) (with affiliation (s)) in inspection(s): Dhananjay Rawal  
OHM Corporation, Project Engineer

**Current Site Conditions:** Anomaly Area 5 is relatively flat. More than half of Anomaly Area 5 is former weapons loading area concrete pad. Anomaly Area 5 is surrounded by grass-covered area, and IRP Site 5 to the southeast. MSC-D1 is located southwest of Anomaly Area 5. No evidence of disturbed ground was observed during the inspection. Also, no stains or discolored areas were observed on the unpaved and paved areas of Anomaly Area 5. [Comment: APHO 31, 43, 66,67 and 68 are grouped together]

Is there visual evidence of the anomaly identified in the photograph present at the site? *None, No construction debris, materials, trenches were observed and no waste items were being stored at the site.*

Is there evidence of past releases? *No*

Description of photograph(s): *Photographs of Anomaly Area 5 (adjacent to the east-end of the east-west runway and IRP Site 5).*

**Date of preparation of checklist:** December 3, 1999

# CHECKLIST

**Aerial Photograph Anomaly Program, Marine Corps Air Station, El Toro  
Anomaly Identification Information:  
Date of Photograph: 13 January 1975**

| <b>APHO (from BRAC<br/>Cleanup Plan)</b> | <b>SAIC</b> | <b>EPA</b> |
|--|-------------|------------|
| <b>67</b>                                | <b>314</b>  |            |

**Recommendation:** No Further Investigation Status

**Anomaly Description:** (from source document): Final Report, Aerial Photograph Assessment (SAIC, 1993):

**SAIC 314:** *Disturbed ground (DG) can be seen about 1000 feet northeast of Building 673, near North/East Marine and N 3<sup>rd</sup> Street. The cause of the disturbance is unknown. Investigation of the site's history as a possible disposal area is recommended.*

*[Comment by the writer of the summary report: The annotations on the 1975 photograph in the SAIC report point to the current concrete paved area as disturbed ground.]*

**Visual Inspection Date (s):** 1 December 1999.

Participant(s) (with affiliation (s)) in inspection(s): Dhananjay Rawal  
OHM Corporation, Project Engineer

**Current Site Conditions:** Anomaly Area 5 is relatively flat. Building 840/841, former LOX/Explosive Safety office, with concrete pad is within Anomaly Area 5. More than half of Anomaly Area 5 is former weapons loading area concrete pad. Anomaly Area 5 is surrounded by grass-covered area, and IRP Site 5 to the southeast. MSC-D1 remains southwest of Anomaly Area 5. No evidence of disturbed ground was observed. Also, no stains or discolored areas were observed on the unpaved and paved areas. [Comment: APHO 31, 43, 66,67 and 68 are grouped together]

Is there visual evidence of the anomaly identified in the photograph present at the site? *None, No construction debris, materials or other items were being stored at the site.*

Is there evidence of past releases? *No*

Description of photograph(s): *Photographs of Anomaly Area 5 (adjacent to the east-end of the east-west runway and IRP Site 5).*

**Date of preparation of checklist:** December 3, 1999

## CHECKLIST

### Aerial Photograph Anomaly Program, Marine Corps Air Station, El Toro

**Anomaly Identification Information:**  
**Date of Photograph: 21 January 1988**

| APHO (from BRAC Cleanup Plan) | SAIC | EPA |
|-------------------------------|------|-----|
| 68                            | 542  |     |

**Recommendation:** No Further Investigation Status

**Anomaly Description:** (from source document): Final Report, Aerial Photograph Assessment (SAIC, 1993):

**SAIC 542:** *A light-colored pad, possibly concrete, was constructed west of Perimeter Road and Magazine Road. The purpose of the pad is unknown, but the area was probably graded (GR). No additional investigation is recommended at this time.*  
*[Comment by the writer of the summary report: The annotations on the 1988 photograph in the SAIC report point to the current location of concrete pad.]*

**Visual Inspection Date (s):** 1 December 1999.

Participant(s) (with affiliation (s)) in inspection(s): Dhananjay Rawal  
OHM Corporation, Project Engineer

**Current Site Conditions:** Anomaly Area 5 is relatively flat. Building 840/841, former LOX/Explosive Safety office, with concrete pad is within Anomaly Area 5. More than half of Anomaly Area 5 is former weapons loading area concrete pad. Anomaly Area 5 is surrounded by grass-covered areas. MSC-D1 is located southwest of Anomaly Area 5. The concrete pad was observed during the inspection. Also, no stains or discolored areas were observed on the unpaved and concrete pad area of Anomaly Area 5. [Comment: APHO 31, 43, 66,67 and 68 are grouped together]

Is there visual evidence of the anomaly identified in the photograph present at the site? *None, No construction debris, materials or other items were being stored at the site.*

Is there evidence of past releases? *No*

Description of photograph(s): *Photographs of Anomaly Area 5 (adjacent to the east-end of the east-west runway and IRP Site 5).*

**Date of preparation of checklist:** December 3, 1999



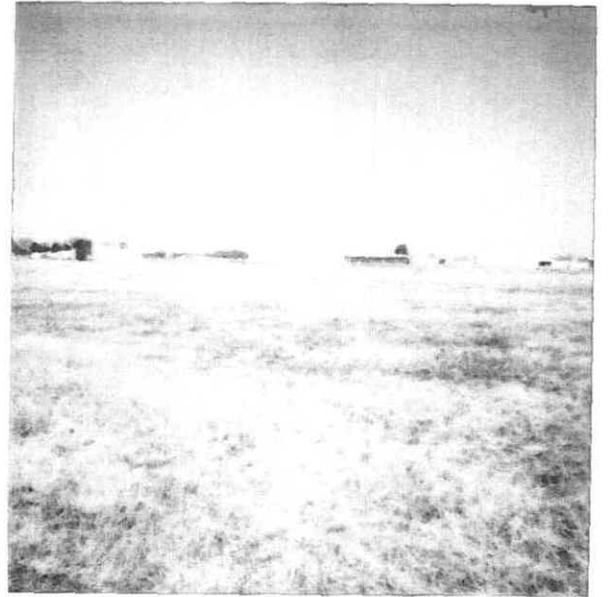
APHO 5, Unpaved Area  
w. Concrete Pad



APHO 5, Part of Runway  
Unpaved Area



APHO 5 - IRP 5 VICINITY



APHO 5. IRP 5 VICINITY

*Appendix C*  
*Excerpts From JEG RFA Report*

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

**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

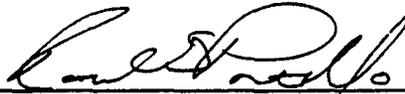
**WITH:**  
Jacobs Engineering Group, Inc.  
3655 Nobel Drive, Suite 200  
San Diego, California 92122

In association with:  
International Technology Corporation  
CH2M HILL



Mike Arends, P.E.  
CLEAN Project Manager  
CH2M HILL, Inc.

7/16/93  
Date



Raoul Portillo  
CLEAN Technical Reviewer  
Jacobs Engineering Group Inc.

15 July 1993  
Date

**MARINE CORPS AIR STATION  
EL TORO  
EL TORO, CALIFORNIA  
INSTALLATION RESTORATION PROGRAM  
RCRA FACILITY ASSESSMENT  
DRAFT PRELIMINARY REVIEW/  
VISUAL SITE INSPECTION REPORT  
VOLUME II**

**SWMU/AOC NUMBERS 145 THROUGH APPENDIX D**

**3 JULY 1991**

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

**THROUGH:**  
CONTRACT #N68711-89-D-9296  
CTO #099  
DOCUMENT CONTROL NO:  
CLE-C01-01F099-B2-0004

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

**In association with:**  
International Technology Corporation  
CH2M HILL

**Evaluation Form  
SWMU/Area of Concern  
Number 225**

Name: Hazardous Waste Storage Area 772

Location: South of DRMO Storage Yard #3

Size: Approximately 144 sq ft

Date of Site Visit: 02 May 1991



Period of Operation

Currently inactive

## Evaluation Form SWMU/Area of Concern Number 225

### Unit Characteristics

This HWSA is one of the six DHS-permitted HWSAs at MCAS El Toro. These six HWSAs (SWMU/AOC Numbers 222 through 227) are not planned for future use. Historically, these six HWSAs have had drums stored outside of the storage area. HWSA 772 is located approximately 100 ft south of DRMO Storage Yard #3. The HWSA consists of a concrete pad and berm, an aluminum roof, and a chain-link fence on all sides. An access ramp is located on the northern side of the HWSA. At the time of the visit, no drums were stored in the HWSA. The concrete pad is covered with approximately 2 to 3 in. of stagnant, green liquid. Due to the presence of the liquid, the condition of the concrete pad was not discernable. No significant cracks or stains were observed on the concrete berms. The HWSA is bordered on all sides by unpaved, sparsely vegetated soil. An apparently abandoned 500-gallon diesel fuel tank is located approximately 10 ft west of the HWSA. No evidence of release from the tank (i.e., soil stains) was observed.

### Waste Characteristics

Unknown

### Possible Migration Pathways

Soil

### Evidence of Release

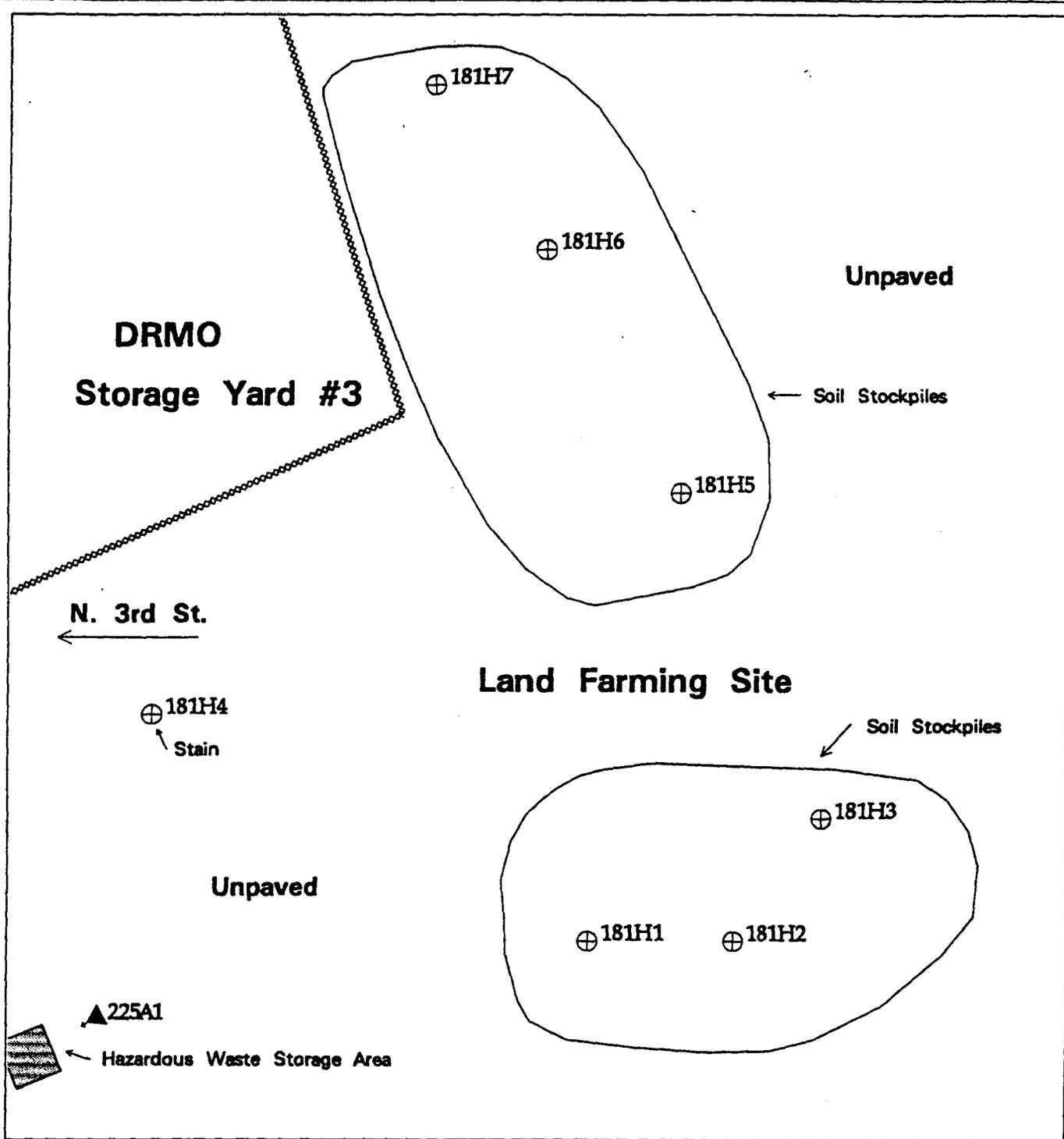
None observed

### Exposure Potential

On-Station personnel

### Recommendations

Although there was no evidence of a release during the site visit and hazardous waste was not currently stored in the area, the past and present HWSAs at MCAS El Toro are recommended for a sampling visit.



**Figure 56 Sample Location Map**

**Boring Location and Number:**

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

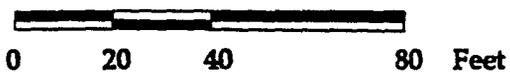
**Features:**

-  Building
-  Concrete
-  Fence
-  Railroad

**SWMU/AOC Number and Type:**

- 181 - Landfarming Area
- 225 - Hazardous Waste Storage Area

Scale



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 |  |  |                         |                |   |           |
| 225             | Hazardous Waste Storage Area (55) | A1            | 10                  | ND                      | ND          | ND     | Methylene Chloride-6 BJ *<br>Acetone-8 BJ *<br>Toluene-1 J | Diethylphthalate-38 BJ *   | ND                      | NAB            | NFA<br>TPH/TFH < 1000 ppm<br>VOCs < CRDL<br>SVOCs < CRDL<br>Pest/PCB < CRDL<br>Metals < BGT<br><br>CRDL - Contract Required Detection Limit<br>BGT - Background Threshold Value |           |
|                 |                                   |               | 10 (Duplicate)      | 176                     | ND          | 60 Z   | Methylene Chloride-13 B *<br>Acetone-30 B *<br>Toluene-1 J | Diethylphthalate-22 BJ *<br>Di-n-butylphthalate-22 J                                       | ND                      | NAB            |   |           |
|                 |                                   |               | 20                  | ND                      | ND          | ND     | Methylene Chloride-7 BJ *<br>Acetone-6 BJ *                | Diethylphthalate-44 BJ *   | ND                      | NAB            |   |           |
|                 |                                   |               | 30                  | ND                      | ND          | ND     | Methylene Chloride-9 BJ *                                  | Diethylphthalate-21 BJ *<br>Di-n-butylphthalate-22 BJ *<br>Bis(2-Ethylhexyl)phthalate-47 J | ND                      | NAB            |   |           |
|                 |                                   |               | 40                  | ND                      | ND          | ND     | Methylene Chloride-7 BJ *                                  | ND   | ND                      | NAB            |   |           |
|                 |                                   |               | 50                  | ND                      | ND          | ND     | Methylene Chloride-7 BJ *                                  | Diethylphthalate-29 BJ   | ND                      | NAB            |   |           |
|                 |                                   |               | 60                  | ND                      | ND          | ND     | Methylene Chloride-7 BJ *<br>Acetone-9 BJ *                | Diethylphthalate-76 BJ *<br>Bis(2-Ethylhexyl)phthalate-54 J                                | ND                      | NAB            |   |           |

**Evaluation Form  
SWMU/Area of Concern  
Number 181**

Name: Landfarming Site

Location: Adjacent to DRMO Storage Yard #3, near Building 673

Size: Approximately 3 acres

Date of Site Visit: 02 May 1991



Period of Operation

Currently active

**Evaluation Form  
SWMU/Area of Concern  
Number 181**

Unit Characteristics

A landfarming area for remediating petroleum-contaminated soil was identified near Building 673 through interviews with current on-Station personnel. The landfarming area is located east of Building 673, adjacent to the southeastern corner of DRMO Storage Yard #3, and is paved. The landfarming area consists of various piles of soil, approximately 4 to 6 ft in height. There are two main piles, divided to the north and south by a dirt road extending east from "Z" Street. The piles consist of dirt, broken asphalt and concrete chunks, sand, and gravel. Miscellaneous garbage is also mixed in the soil piles. The piles support sparse vegetative growth.

Waste Characteristics

Petroleum-contaminated soil

Possible Migration Pathways

Surface soil

Evidence of Release

None observed

Exposure Potential

On-Station personnel

Recommendations

Although there is no current evidence of a release at the landfarming site, it is not known whether a release may have occurred in the past. A sampling visit is recommended for this site.

**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 |  |               |                         |                |   |           |
| 181             | Landfarming Site (56)  | H1            | 2                   | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-8 BJ *<br>Toluene-1 J | NA            | NA                      | NA             | NFA<br><br><br><br><br><br><br><br><br><br><br><br><br>CRDL - Contract Required Detection Limit |           |
|                 |                        |               | 5                   | NA                      | ND          | ND     | Methylene Chloride-4 BJ *<br>Acetone-9 BJ *                | NA            | NA                      | NA             |   |           |
|                 |                        | H2            | 2                   | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-12 B *<br>Toluene-1 J | NA            | NA                      | NA             |   |           |
|                 |                        |               | 5                   | NA                      | ND          | ND     | ND   | NA            | NA                      | NA             |   |           |
|                 |                        |               | 5 (Duplicate)       | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-8 BJ *                | NA            | NA                      | NA             |   |           |
|                 |                        | H3            | 2                   | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-16 B *<br>Toluene-1 J | NA            | NA                      | NA             |   |           |
|                 |                        |               | 5                   | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-23 B *<br>Toluene-2 J | NA            | NA                      | NA             |   |           |
|                 |                        | H4            | 2                   | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-15 B *<br>Toluene-2 J | NA            | NA                      | NA             |   |           |
|                 |                        |               | 5                   | NA                      | ND          | ND     | Methylene Chloride-1 BJ *<br>Acetone-10 BJ *               | NA            | NA                      | NA             |   |           |

MCAS EL TORO RCRA FACILITY ASSESSMENT - SAMPLING VISIT RESULTS

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

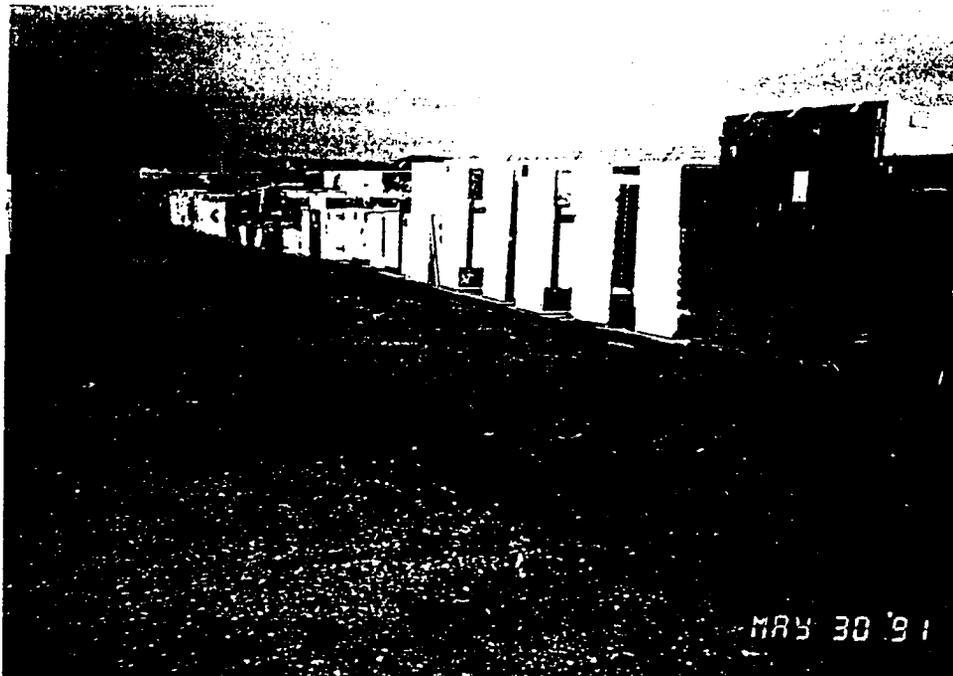
**Evaluation Form  
SWMU/Area of Concern  
Number 264**

Name: DRMO Storage Yard #3

Location: North 3rd St and East Marine Way

Size: Approximately 3 acres

Date of Site Visit: 02 May 1991



Period of Operation

Currently active

**Evaluation Form  
SWMU/Area of Concern  
Number 264**

Unit Characteristics

DRMO Storage Yard #3 is located on the southeast corner of North 3rd Street and East Marine Way. The entrance to the storage yard is located at the southern corner of the site. The storage yard is used to store miscellaneous items and equipment including tires, automobiles, refrigerators and other appliances. The entire area of the storage yard is unpaved with a thin layer of gravel over most of the surface. There is little or no vegetation within the lot. The perimeter of the lot is enclosed with chain-link fencing. The storage yard is bordered on the southwest side by North 3rd Street and on the remaining sides by unpaved areas.

Several areas of darkly stained soil were observed in the storage yard. The most significant stain was located in the central portion of the storage yard near the jeep storage area. Other stains were observed in the storage yard at the north corner, the west corner near the tire storage area, and the southeast side near the appliance storage area. The stains appeared to be crankcase oil.

Waste Characteristics

Waste oil

Possible Migration Pathways

Surface Soil

Evidence of Release

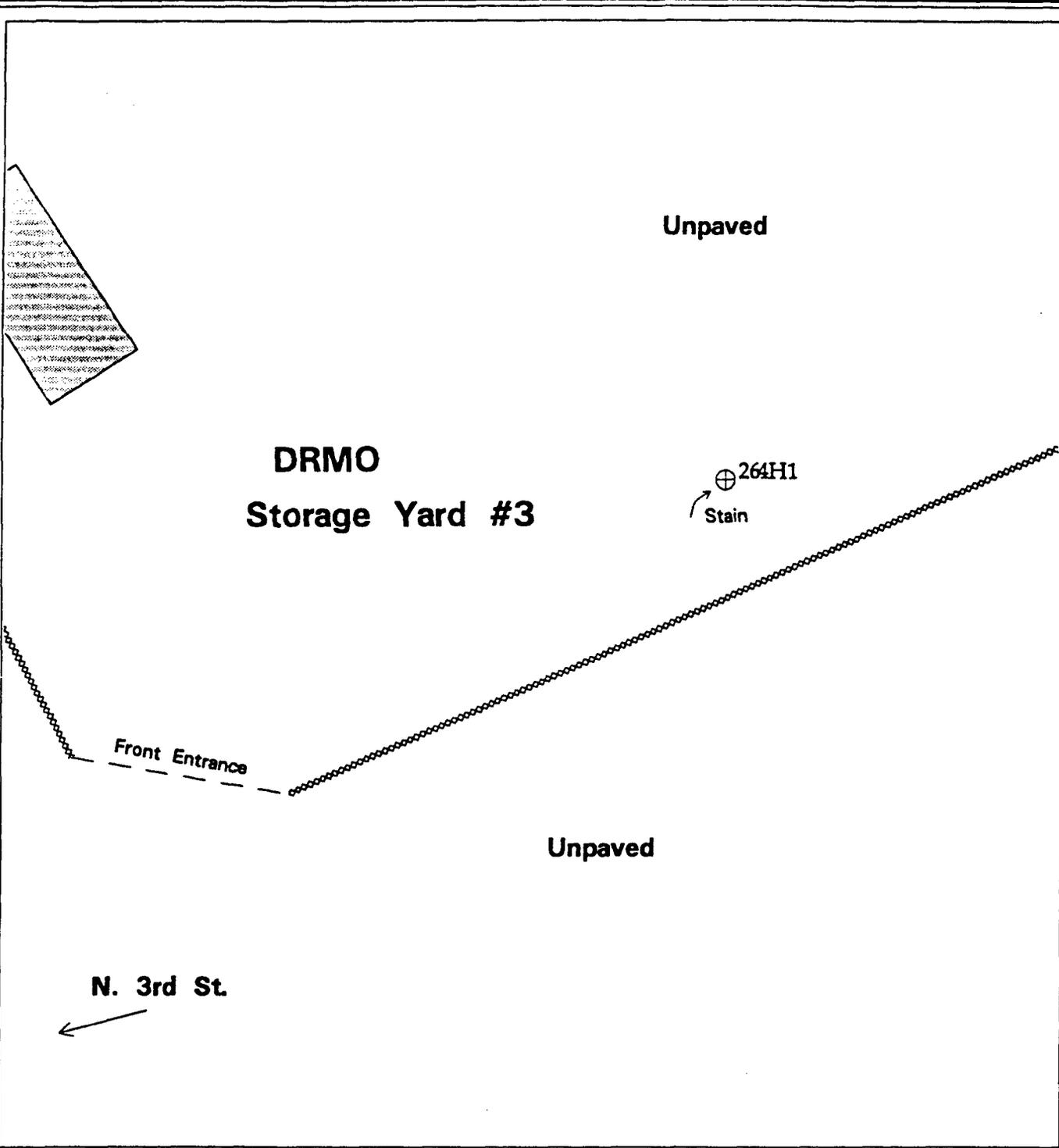
Areas of stained soil observed throughout the storage yard

Exposure Potential

Authorized on-Station personnel

Recommendations

A sampling visit is recommended for this storage yard.



**Figure 80 Sample Location Map**

**SWMU/AOC Number and Type:  
264 - Equipment Storage Area**

**Boring Location and Number:**

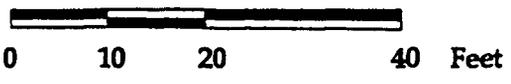
**Features:**

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

- Building
- Concrete
- Fence
- Railroad



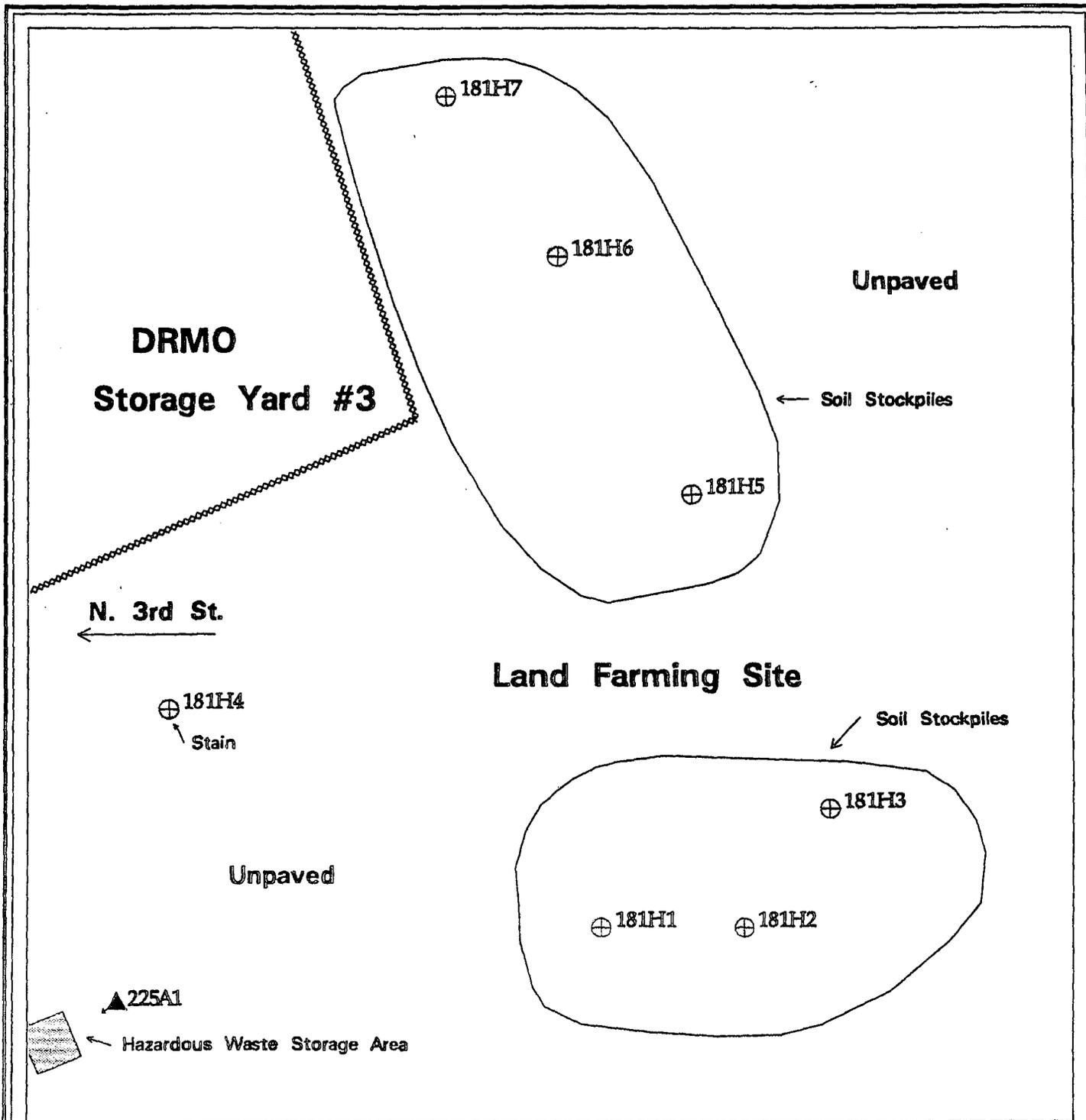
**Scale**



**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 |   |               |                         |                |   |           |
| 264             | Equipment Storage Area (80, 81) | H1            | 2                   | 33                      | NA          | NA     | Toluene-1 J   | NA            | NA                      | NA             | NFA<br><br><br><br><br><br><br><br><br><br>CRDL - Contract Required Detection Limit |           |
|                 |                                 |               | 5                   | 47                      | NA          | NA     | PCE-1 J<br>Xylene-2 J   | NA            | NA                      | NA             |   |           |
|                 |                                 | H2            | 2                   | 65                      | NA          | NA     | ND  | NA            | NA                      | NA             |   |           |
|                 |                                 |               | 5                   | ND                      | NA          | NA     | ND  | NA            | NA                      | NA             |   |           |
|                 |                                 | H3            | 2                   | 34                      | NA          | NA     | Methylene Chloride-5 BJ *<br>Acetone-9 BJ *<br>Toluene-1 J    | NA            | NA                      | NA             |   |           |
|                 |                                 |               | 2 (Duplicate)       | 490                     | NA          | NA     | Methylene Chloride-5 BJ *<br>Acetone-13 B *                   | NA            | NA                      | NA             |   |           |
|                 |                                 |               | 5                   | 290                     | NA          | NA     | Acetone-10 BJ *<br>Toluene-1 J                                | NA            | NA                      | NA             |   |           |
|                 |                                 | H4            | 2                   | ND                      | NA          | NA     | Methylene Chloride-4 BJ *<br>Acetone-5 BJ *                   | NA            | NA                      | NA             |   |           |
|                 |                                 |               | 5                   | ND                      | NA          | NA     | Methylene Chloride-5 BJ *<br>Acetone-8 BJ *<br>2-Butanone-3 J | NA            | NA                      | NA             |   |           |



**Figure 56 Sample Location Map**

Boring Location and Number:

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

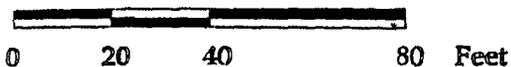
Features:

-  Building
-  Concrete
-  Fence
-  Railroad

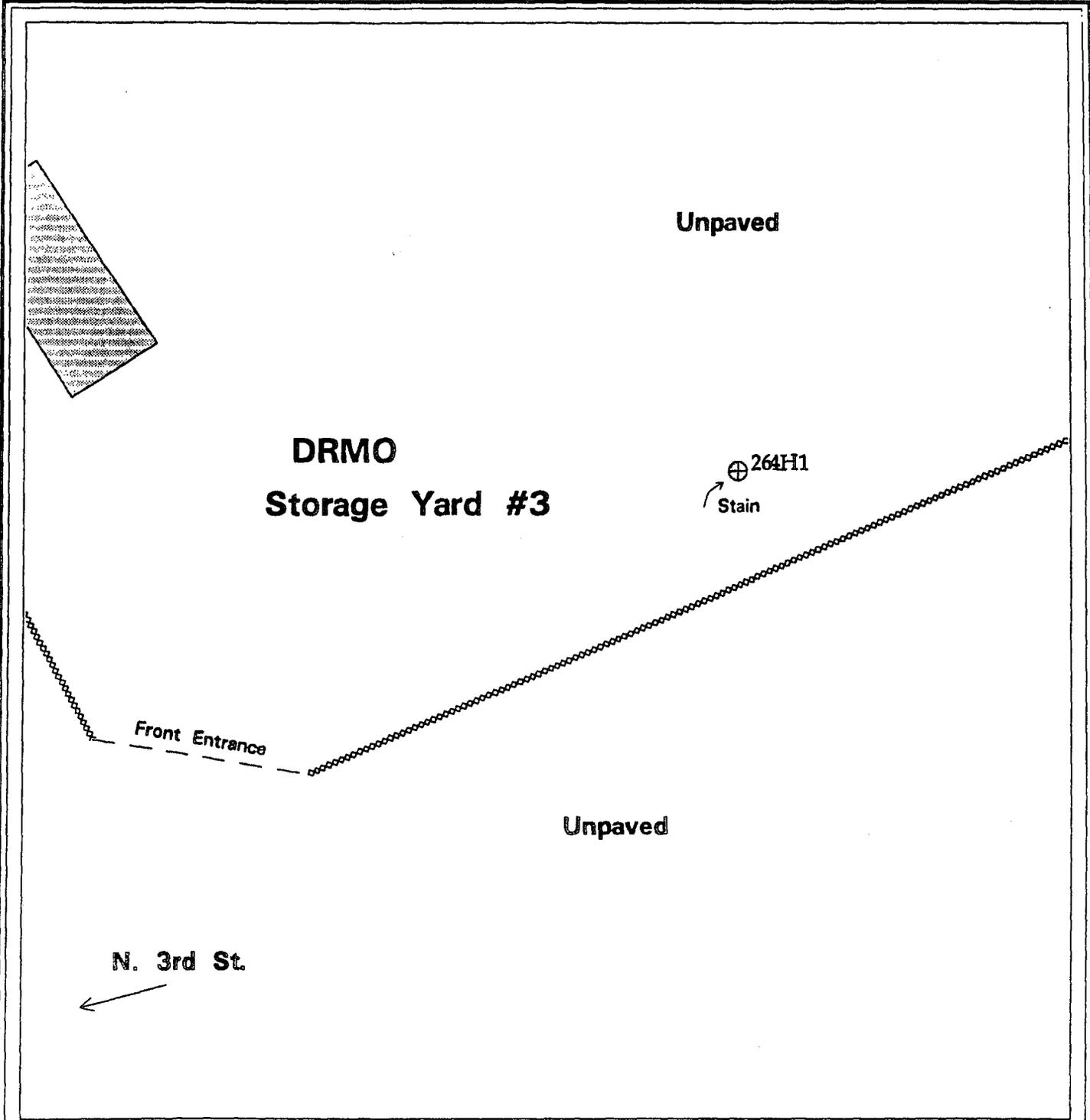
SWMU/AOC Number and Type:

- 181 - Landfarming Area
- 225 - Hazardous Waste Storage Area

Scale



MCAS El Toro  
RCRA Facility Assessment



**Figure 80 Sample Location Map**

**SWMU/AOC Number and Type:**  
 264 - Equipment Storage Area

**Boring Location and Number:**

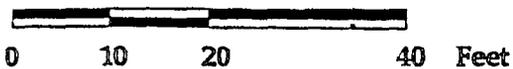
**Features:**

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

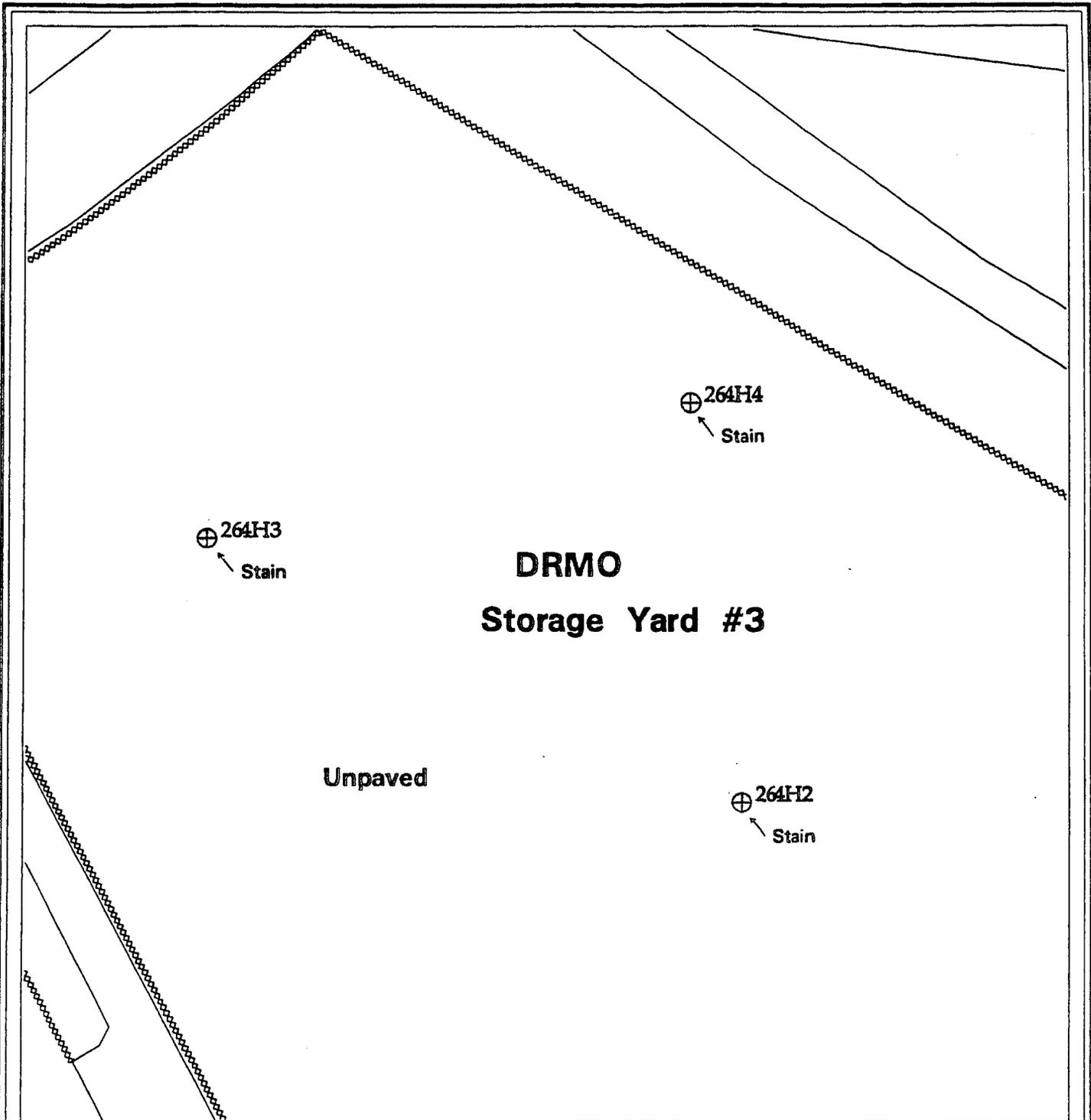
- Building
- Concrete
- Fence
- Railroad



Scale



MCAS El Toro  
 RCRA Facility Assessment



**Figure 81 Sample Location Map**

**SWMU/AOC Number and Type:**

**264 - Equipment Storage Area**

**Boring Location and Number:**

**Features:**

⊕ 123H4 5' Deep Boring

 Building

● 123B4 25' Deep Boring

 Concrete

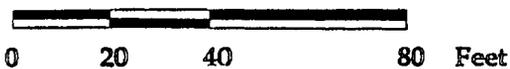
▲ 123A4 60' Long, Angle Boring

 Fence

 Railroad



Scale



**MCAS El Toro  
RCRA Facility Assessment**



PROJECT NUMBER  
LA070022.S0.10

BORING NUMBER  
225A-1

SHEET 1 OF 2

SOIL BORING LOG

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 10/19/92 FINISH 10/19/92 LOGGER R. HUCKRIEDE

| DEPTH BELOW SURFACE (FT) | SAMPLE   |                 |               | STANDARD PENETRATION TEST RESULTS<br>6" - 6" - 6" (N) | SOIL DESCRIPTION<br>SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | COMMENTS<br>DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION |
|--------------------------|----------|-----------------|---------------|---|--|--|
|                          | INTERVAL | TYPE AND NUMBER | RECOVERY (FT) |   |  |  |
| 5.0                      |          |                 |               |   | ELASTIC SILT WITH SAND (MH), brown, moist.   | Start drilling at 09:15  |
| 10.0                     | 10.0     |                 |               |   | POORLY GRADED SAND (SP), light brown, dry, dense, fine grained.  | Headspace reading 2 ppm on OVA.  |
|                          | 12.0     | 1-MC            | 1.5           | 30-10-17-37   |  |  |
|                          | 14.0     | 1A-MC           | 1.4           | 33-16-40-53   | SILT WITH SAND (ML), brown, moist, hard, fine to medium sand.  |  |
| 15.0                     |          |                 |               |   |  |  |
| 20.0                     | 20.0     |                 |               |   | POORLY GRADED SAND WITH SILT (SP-SM), brown, very dense, fine to medium grains, occasional nodules of gray clay.                       | Headspace reading 1 ppm on OVA.  |
|                          | 22.0     | 2-MC            | 1.5           | 30-36-41-111  |  |  |
| 25.0                     |          |                 |               |   |  |  |
| 30.0                     | 30.0     |                 |               |   | POORLY GRADED SAND (SP), brown, moist, dense, fine grains, occasional thin layers of gray clay.  | Headspace reading 0.5 ppm on OVA.  |
|                          | 32.0     | 3-MC            | 1.5           | 41-43-34-40   |  |  |
|                          |          |                 |               |   |  |  |



PROJECT NUMBER  
LA070022.S0.1C

BORING NUMBER  
225A-1

SHEET 2 OF 2

SOIL BORING LOG

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 10/19/92 FINISH 10/19/92 LOGGER K. HUCKRIEDE

| DEPTH BELOW SURFACE (FT) | SAMPLE   |                 |               | STANDARD PENETRATION TEST RESULTS<br>6" -6" -6"<br>(N) | SOIL DESCRIPTION<br>SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY | COMMENTS<br>DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION |
|--------------------------|----------|-----------------|---------------|--|--|--|
|                          | INTERVAL | TYPE AND NUMBER | RECOVERY (FT) |  |  |  |
| 40.0                     | 40.0     |                 |               |  |  |  |
|                          | 42.0     | 4-MC            | 1.6           | 34-32-39-47  | POORLY GRADED SAND (SP), brown, moist, very dense, fine grains, trace silt.  | Headspace reading 0.2 ppm on OVA.  |
| 45.0                     |          |                 |               |  |  |  |
| 50.0                     | 50.0     |                 |               |  |  |  |
|                          | 52.0     | 5-MC            | 1.5           | 47-91-90-101   | POORLY GRADED SAND WITH SILT (SP-SM), brown, moist, very dense, fine to coarse grains.   | Headspace reading 1.5 ppm on OVA.  |
| 55.0                     |          |                 |               |  |  |  |
| 60.0                     | 60.0     |                 |               |  |  |  |
|                          | 62.0     | 6-MC            |               | 32-60-106-120  | POORLY GRADED SAND (SP), brown, dry to moist, very dense, fine grains, quartz particles up to 1 mm in diameter.                        | Headspace reading on OVA similar to background.  |
|                          |          |                 |               |  | Total Depth at 62.0 Feet.  |  |
| 65.0                     |          |                 |               |  |  |  |

*Appendix D*

P

*Excerpts from Station's SWMPP*

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

**FOR**

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

NOTE  
ANNOTATION MADE BY THE WRITER OF THIS REPORT ARE IDENTIFIED WITH AN ARROW

*EXCERPTS*

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

**VOLUME 1**

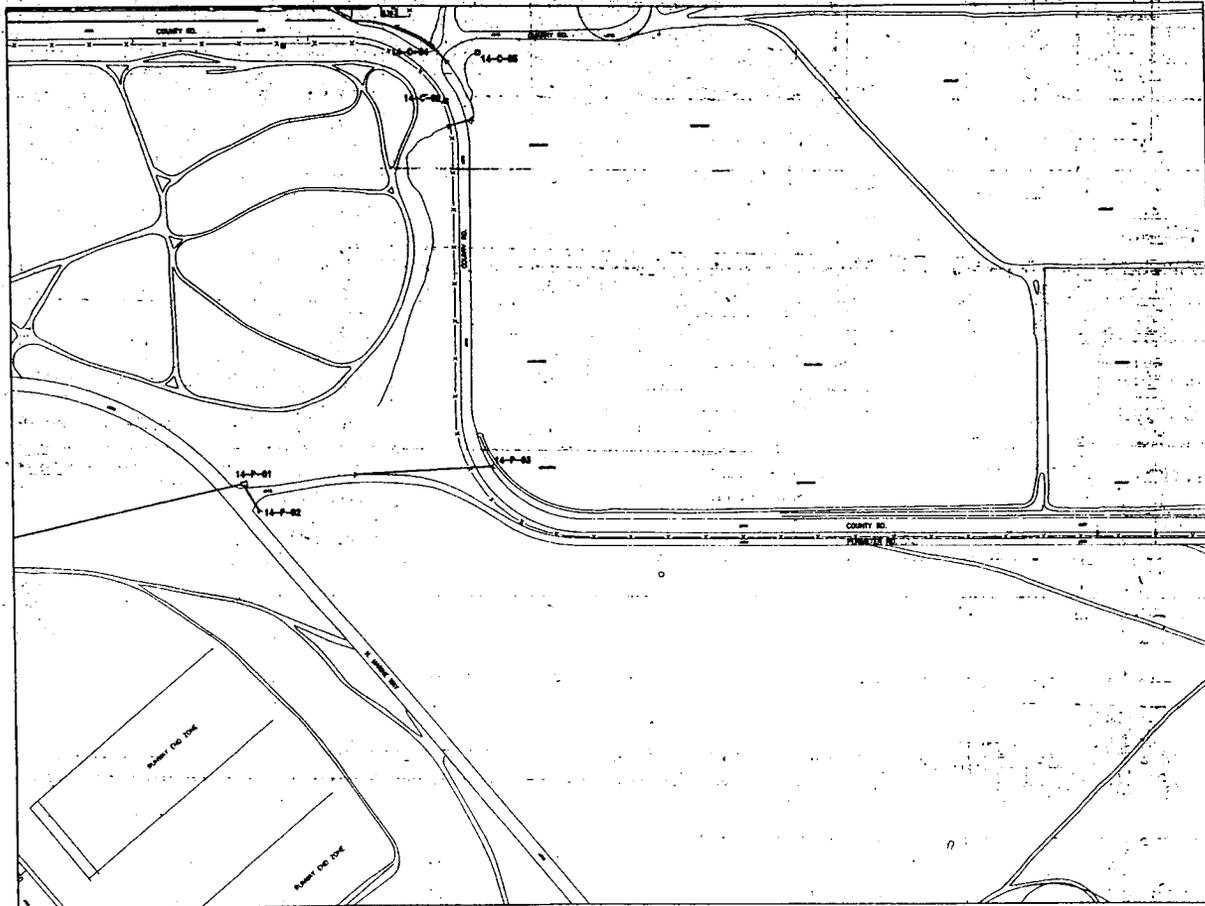
**JULY, 1997**

**INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.**

## **7. MATERIALS INVENTORY**

Based on the information collected during the field survey conducted to gather facility information for the preparation of the SWPPP, and information kept by MCAS El Toro Environmental Department, a materials inventory for MCAS El Toro is presented in Table 7-1. This information can be used in tracing storm water pollution, if it is detected, through the storm water conveyance system to likely source facilities. Materials inventory data can also be used as an aid in developing SPCC plans and management of storm water pollution prevention.



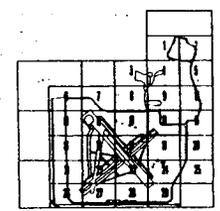


**'MCAS' EL TORO - AREA 14**  
SCALE: 1"=150'-0"

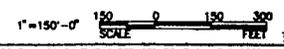
| REVISIONS |             |           |      |          |
|-----------|-------------|-----------|------|----------|
| SYMBOL    | DESCRIPTION | PREP'D BY | DATE | APPROVED |
|           |             |           |      |          |
|           |             |           |      |          |

**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
- RWTA - HAZARDOUS WASTE TRANSFER AREA
- MH - MANHOLE
- OWS - OIL/WATER SEPARATOR
- PCA - POLLUTANT CONTACT AREA
- PPCA - POTENTIAL POLLUTANT CONTACT AREA
- UOT - UNDERGROUND STORAGE TANK
- VP - VEHICLE PAINTING
- VF - 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

**IEM**  
INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.

|                                       |  |  |  |
|---------------------------------------|--|--|--|
| PROJECT NO.                           |  | DATE: 10-10-01                                   |  |
| SHEET NO.                             |  | SHEET TOTAL: 10                                  |  |
| DRAWN BY: J. G. [unclear]             |  | CHECKED BY: [unclear]                            |  |
| DATE: 10-10-01                        |  | DATE: 10-10-01                                   |  |
| PROJECT NAME: 'MCAS' EL TORO          |  | PROJECT LOCATION: SOUTHWEST DIVISION, CALIFORNIA |  |
| PROJECT ADDRESS: AREA 14              |  | PROJECT CITY: EL TORO, CA                        |  |
| PROJECT STATE: CA                     |  | PROJECT ZIP: 92531                               |  |
| PROJECT CLIENT: IEM                   |  | PROJECT NUMBER: 14-0-01                          |  |
| PROJECT TITLE: AREA 14 - STORM DRAINS |  | PROJECT SCALE: 1"=150'-0"                        |  |
| PROJECT DATE: 10-10-01                |  | PROJECT STATUS: [unclear]                        |  |
| PROJECT PHASE: [unclear]              |  | PROJECT DRAWING NO.: [unclear]                   |  |
| PROJECT SHEET: D                      |  | PROJECT SHEET TOTAL: 10                          |  |
| PROJECT SCALE: [unclear]              |  | PROJECT SHEET NO.: [unclear]                     |  |

P:\PROJECTS\14001\14001.dwg 11/14/01 10:00 AM

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

| BLDG # | BASIN | BUILDING DESCRIPTION          | TENANT       | Concern Level | TRADE/COMMON NAME | MAX. DAY | AVE. Day | CONT.  |
|--------|-------|-------------------------------|--------------|---------------|-------------------|----------|----------|--------|
|        |       | Shop                          |              |               |                   |          |          |        |
| 673    | 10    | Ground Support Equipment Shop | MALS-16      | Concern       | Grease            | N/A      | N/A      | N/A    |
| 673    | 10    | Ground Support Equipment Shop | MALS-16      | Concern       | Lubricating Oil   | N/A      | N/A      | N/A    |
| 674    | 01    | Oil/Water Separator           | Installation | Concern       | N/A               |          |          |        |
| 675    | 02    | Oil/Water Separator           | Installation | Concern       | N/A               |          |          |        |
| 676    | 30    | Community Storage Misc.       | Housing      | Concern       | N/A               |          |          |        |
| 693    | 26    | OFT (KC-130)                  | Training     | Concern       | N/A               | N/A      | N/A      | 55 gal |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Aerosol           | N/A      | N/A      | N/A    |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Cleaner           | N/A      | N/A      | N/A    |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Clorox Bleach     | N/A      | N/A      | N/A    |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Insecticide       | N/A      | N/A      | N/A    |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Lacquer           | N/A      | N/A      | N/A    |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Paints            | N/A      | N/A      | N/A    |
| 713    | 30    | Haz/Flam Storehouse           | MAG-11       | Concern       | Thinner           | N/A      | N/A      | N/A    |
| 716    | 07    | Hush House                    | MALS-11      | Concern       | N/A               |          |          |        |
| 717    | 01    | Crash, Fire, Rescue           | Sta/G-3      | Concern       | Aerosol Paints    | N/A      | N/A      | N/A    |

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

| BLDG # | BASIN | BUILDING DESCRIPTION       | TENANT              | Concern Level | TRADE/Common Name           | MAX. DAY | AVE. Day | CONT.    |
|--------|-------|----------------------------|---------------------|---------------|-----------------------------|----------|----------|----------|
| 800    | 02    | Vehicle Maint Facility     | MWSS-373 HM Storage | Concern       | Lubricating oil, 80/90W     | 110 gal  | 25 gal   | 55 gal   |
| 800    | 02    | Vehicle Maint Facility     | MWSS-373 HM Storage | Concern       | Lubricating oil, DEXRON ATF | 200 gal  | 50 gal   | 5 gal    |
| 800    | 02    | Vehicle Maint Facility     | MWSS-373 HM Storage | Concern       | Sulfuric Acid               | 500 gal  | 50 gal   | 1 gal    |
| 802    | 02    | Washrack                   | MWSS-373            | Concern       | N/A                         |          |          |          |
| 803    | 02    | Fuel Islands               | MWSS-373            | Concern       | Diesel Fuel No. 2           | N/A      | N/A      | N/A      |
| 804    | 02    | Fuel Islands               | MWSS-373            | Concern       | Diesel Fuel No. 2           | N/A      | N/A      | N/A      |
| 817    | 37    | Vehicle Wash Bldg          | MWR-Rec             | Concern       | N/A                         |          |          |          |
| 831    | 37    | Cryogenics                 | MALS-11             | Concern       | N/A                         |          |          |          |
| 845    | 37    | Washrack Utility Bldg      | VMFAT-101           | Concern       | N/A                         |          |          |          |
| 850    | 07    | Crash Crew Burn Pit        | Sta/G-3             | Concern       | Jet Fuel JP-5               | N/A      | N/A      | N/A      |
| 850 A  | 07    | UST-MWR burn pit           | Sta/G-3             | Concern       | Jet Fuel JP-5               | 5000 gal | 2500 gal | 5000 gal |
| 850 B  | 07    | UST-MWR burn pit           | Sta/G-3             | Concern       | Jet Fuel JP-5               | 5000 gal | 2500 gal | 5000 gal |
| 851    | 07    | Crash Crew Burn Pit        | Sta/G-3             | Concern       | Jet Fuel JP-5               | N/A      | N/A      | N/A      |
| 855    | 37    | Electrical Comm Maint Shop | MALS-11             | Concern       | 1,1,1 Trichloromethane      | N/A      | N/A      | N/A      |
| 855    | 37    | Electrical Comm Maint      | MALS-11             | Concern       | Acetone                     | N/A      | N/A      | N/A      |

→ Bldg. 845 FORMER LOX Facility

***Appendix E***  
***Excerpts from Station's HM/HWMP***

Final

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

August 1994

NOTE  
ANNOTATION MADE BY THE WRITER OF THIS REPORT ARE IDENTIFIED WITH AN ARROW

EXCERPTS



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:  
 NO HAZARDOUS MATERIALS OR WASTE STORAGE AREAS ARE IDENTIFIED AT ANOMALY AREA 5, HOWEVER  
 TAA 772 WHICH HAS BEEN INACTIVE FOR SEVERAL YEARS IS LOCATED ADJACENT TO ANOMALY AREA 5.

EXCERPTS

| 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 Mats-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      | Q5          |
| 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                                   | 606    | N8          |
| VMGR-352                                   | 297    | T8          |
| VFMA-314                                   | 605    | N7          |



HAZARDOUS MATERIALS STORAGE



HAZARDOUS WASTE ACCUMULATION POINT



ONE YEAR PERMITTED HAZARDOUS WASTE STORAGE AREA

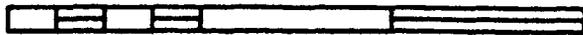
MCAS El Toro  
Santa Ana, California

# HAZARDOUS WASTE ACCUMULATION POINTS AND HAZARDOUS MATERIAL STORAGE LOCATIONS

NOVEMBER 5, 1993



500' 250' 0 500' 1000'

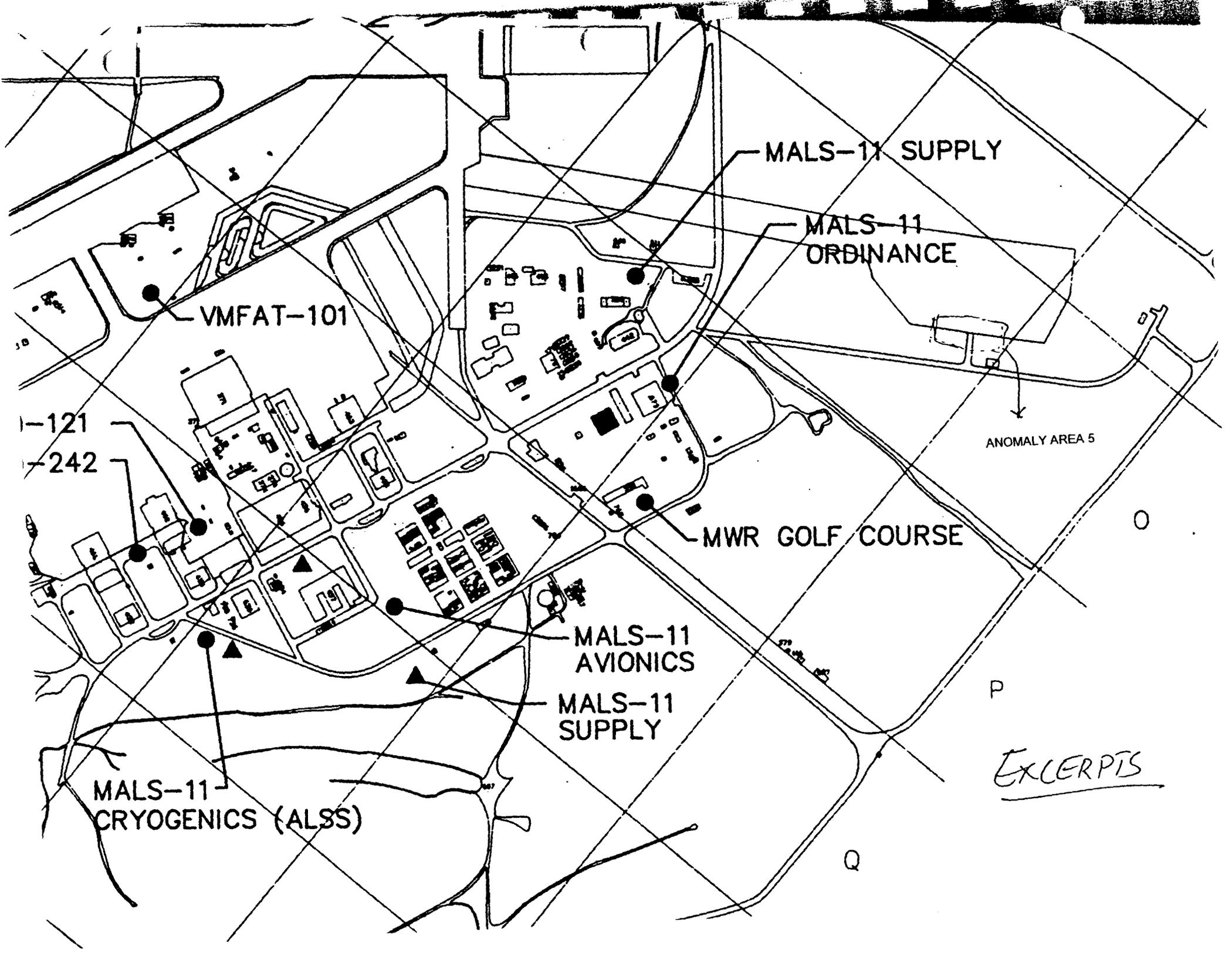


1" = 500'



Science Applications  
International Corporation  
● An Employee-Owned Company





MALS-11 SUPPLY

MALS-11 ORDNANCE

VMFAT-101

121

242

ANOMALY AREA 5

MWR GOLF COURSE

MALS-11 AVIONICS

MALS-11 SUPPLY

MALS-11 CRYOGENICS (ALSS)

EXCERPTS

P

Q

*Appendix F*  
*Excerpts from CDM Groundwater Report*

FINAL

EXCERPTS

**GROUNDWATER MONITORING REPORT  
JULY 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:

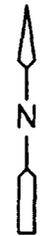
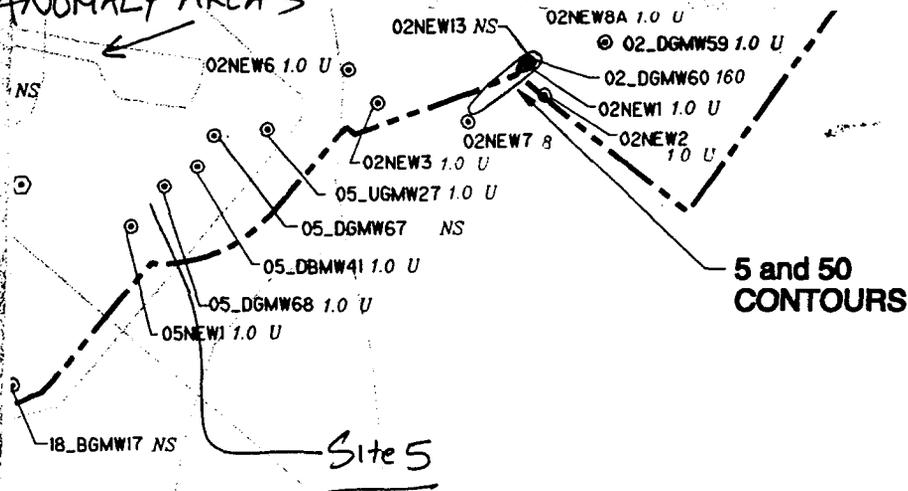
**SOUTHWEST DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
1220 Pacific Highway  
San Diego, California 92132**

Prepared by:

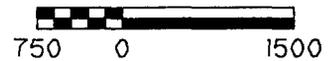
**CDM FEDERAL PROGRAMS CORPORATION  
3760 Convoy Street, Suite 210  
San Diego, California 92111**

October 1997

ANOMALY AREA S



SCALE IN FEET



EXCERPTS

Marine Corps Air Station, El Toro, California

TCE Concentrations  
 in the Shallow Groundwater Unit  
 July 1997

MCAS El Toro Groundwater Monitoring Report

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

Figure 4-1

Table 2-1: GROUNDWATER SAMPLING AND ANALYSES  
 July 1997 Sampling Round, MCAS El Toro Groundwater Monitoring

| Station ID | Date Sampled | ANALYSES |                           |                           |        |                      |                            |
|------------|--------------|----------|---------------------------|---------------------------|--------|----------------------|----------------------------|
|            |              | VOCs     | Gross Alpha<br>Gross Beta | Selected<br>Radionuclides | Metals | General<br>Chemistry | Treatability<br>Parameters |
| 01MW101    | 11-Jul-97    | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 01MW102    | 9-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 01MW201    | 9-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02_DGMW59  | 3-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02_DGMW60  | 1-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02_DGMW61  | 2-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02_UGMW25  | 2-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW1     | 1-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW2     | 3-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW3     | 2-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW6     | 2-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW7     | 11-Jul-97    | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW8A    | 2-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW11    | 8-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 02NEW12    | 30-Jun-97    | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 03_DBMW39  | 8-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 03_DGMW64  | 30-Jun-97    | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 03_DGMW65X | 30-Jun-97    | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 03_UGMW26  | 1-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 04_DBMW40  | 30-Jun-97    | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 04_DGMW66  | 1-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 04_UGMW63  | Not Sampled  |          |                           |                           |        |                      |                            |
| 05_DBMW41  | 8-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 05_DGMW67  | Not Sampled  |          |                           |                           |        |                      |                            |
| 05_DGMW68  | 1-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 05_UGMW27  | 9-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 05NEW1     | 9-Jul-97     | 1        | 1                         | 1                         | 1      | 1                    |                            |
| 07_DBMW43  | 3-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 07_DGMW91  | 9-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 07_DBMW100 | 10-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 08_DGMW74  | 7-Jul-97     | 1        |                           |                           |        | 1                    | 1                          |
| 08_UGMW29  | 7-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 09_DBMW45  | 8-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 09_DGMW75  | 8-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 10_DGMW77  | 10-Jul-97    | 1        |                           |                           |        | 1                    |                            |

Table 2-1: GROUNDWATER SAMPLING AND ANALYSES  
 July 1997 Sampling Round, MCAS El Toro Groundwater Monitoring

| Station ID  | Date Sampled | ANALYSES |                           |                           |        |                      |                            |
|-------------|--------------|----------|---------------------------|---------------------------|--------|----------------------|----------------------------|
|             |              | VOCs     | Gross Alpha<br>Gross Beta | Selected<br>Radionuclides | Metals | General<br>Chemistry | Treatability<br>Parameters |
| 13_DGMW78   | 9-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 14_DBMW50   | 9-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 14_DGMW79   | 9-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 15_DBMW51   | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 16_DBMW52   | 11-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 16_DGMW81   | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 16_UGMW33   | 10-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 17_DGMW82   | Not Sampled  |          |                           |                           |        |                      |                            |
| 17NEW1      | 30-Jun-97    | 1        |                           |                           |        | 1                    |                            |
| 17NEW2      | 30-Jun-97    | 1        |                           |                           |        | 1                    |                            |
| 18_BGMW03C  | 8-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_BGMW03E  | 8-Jul-97     | 1        |                           |                           |        | 1                    | 1                          |
| 18_BGMW04B  | 9-Jul-97     | 1        |                           |                           |        | 1                    | 1                          |
| 18_BGMW05D  | 7-Jul-97     | 1        |                           |                           |        | 1                    | 1                          |
| 18_BGMW101  | 9-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_DW135    | 7-Jul-97     | 1        |                           |                           |        | 1                    | 1                          |
| 18_MCAS01-3 | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS01-4 | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS01-5 | 1-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS02-3 | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS02-4 | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS02-5 | 2-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS03-1 | 1-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS03-2 | 1-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS03-3 | 1-Jul-97     | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS04   | 14-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS06   | 15-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS07-3 | 10-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS07-4 | 10-Jul-97    | 1        |                           |                           |        | 1                    |                            |
| 18_MCAS07-5 | 10-Jul-97    | 1        |                           |                           |        | 1                    |                            |

Table 2-1: GROUNDWATER SAMPLING AND ANALYSES  
July 1997 Sampling Round, MCAS El Toro Groundwater Monitoring

| Station ID           | Date Sampled | ANALYSES  |                           |                           |           |                      |                            |
|----------------------|--------------|-----------|---------------------------|---------------------------|-----------|----------------------|----------------------------|
|                      |              | VOCs      | Gross Alpha<br>Gross Beta | Selected<br>Radionuclides | Metals    | General<br>Chemistry | Treatability<br>Parameters |
| 18_MCAS08            | 14-Jul-97    | 1         |                           |                           |           | 1                    |                            |
| 18_MCAS09            | 14-Jul-97    | 1         |                           |                           |           | 1                    |                            |
| 18_MCAS10            | 15-Jul-97    | 1         |                           |                           |           | 1                    |                            |
| 18_PS2               | 7-Jul-97     | 1         |                           |                           |           | 1                    | 1                          |
| 18_PS3               | 11-Jul-97    | 1         |                           |                           |           | 1                    | 1                          |
| 18_PS5               | 11-Jul-97    | 1         |                           |                           |           | 1                    | 1                          |
| 18_PS6               | 1-Jul-97     | 1         |                           |                           |           | 1                    | 1                          |
| 21_UGMW37            | 9-Jul-97     | 1         |                           |                           |           | 1                    |                            |
| 22_DBMW47            | 8-Jul-97     | 1         |                           |                           |           | 1                    |                            |
| 24NEW1               | 10-Jul-97    | 1         |                           |                           |           | 1                    | 1                          |
| 24NEW4               | 8-Jul-97     | 1         |                           |                           |           | 1                    | 1                          |
| 24NEW5               | 8-Jul-97     | 1         |                           |                           |           | 1                    | 1                          |
| 24NEW6               | 10-Jul-97    | 1         |                           |                           |           | 1                    | 1                          |
| 24NEW7               | 2-Jul-97     | 1         |                           |                           |           | 1                    | 1                          |
| 24NEW8               | 2-Jul-97     | 1         |                           |                           |           | 1                    | 1                          |
| <b>Total Samples</b> |              | <b>77</b> | <b>25</b>                 | <b>25</b>                 | <b>25</b> | <b>77</b>            | <b>15</b>                  |

1. Analytical Parameters and Methods:

- a) Volatile organic compounds (VOCs) plus Freon 113 by CLP SOW Version OLM03.0 for VOCs.
- b) Gross Alpha by SM7110C/Gross Beta by EPA Method 900.
- c) Selected Radionuclides include: Radium-226 by EPA Method 903.1, Radium-228 by EPA Method 904.0, Strontium-89 by EPA Method 905.0, and Cesium-134 by EPA Method 901.1.
- d) Metals (Target Analyte List) by CLP SOW Version ILM03.0 for Metals (filtered samples).
- e) General Chemistry includes: Nitrate/Nitrite (as N), Chloride, Sulfate by EPA Method 300.0; Carbonate and Bicarbonate by SM2320B; Alkalinity by EPA Method 310.1, and Total Dissolved Solids (TDS) by EPA Method 160.1.
- f) Treatability Parameters include: Chemical Oxygen Demand (COD) by EPA Method 410.4, Total Organic Carbon (TOC) by EPA Method 415.1, Ammonia-Nitrogen by EPA Method 350.2, Phosphate by EPA Method 300.0, Silica (dissolved) by EPA Method 370.1, Strontium-90 by EPA Method 905.0, Radon by EPA Method 913.0, Total Suspended Solids (TSS) by EPA Method 160.2, and Color by EPA Method 110.2.

2. Wells from which duplicate samples were collected:

|         |          |          |          |
|---------|----------|----------|----------|
| 01MW101 | 05UGMW27 | 09DBMW45 | 21UGMW37 |
| 01MW102 | 05NEW1   | 09DGMW75 | 22DBMW47 |
| 01MW202 | 09DBMW45 | 15DBMW51 | 24NEW4   |
|         |          |          | 24NEW7   |

3. Samples were not collected at the following wells:

|          |   |
|----------|---|
| 04UGMW63 | : Pump failed.  |
| 05DGMW67 | : Controller box cut out, pump impeller was overheated. |
| 17DGMW62 | : Pump failed.  |

4. Wells 01 MW101, 01 MW102, and 01 MW201 were resampled for VOCs on September 12, 1997 (see Section 2.2).

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 (feet MSL) | MEASUREMENT DATE | DEPTH TO WATER (feet TOC) | WATER LEVEL ELEVATION (feet MSL) | CHANGE FROM PRIOR (+ or - feet) |
|------------|-----------|----------------------------|--------------------------|------------------|---------------------------|----------------------------------|---------------------------------|
| 04_LGMW63  | WT        | 235 - 275                  | 404.11                   | 11-Jan-96        | 212.50                    | 191.61                           |                                 |
|            |           |                            | 404.11                   | 30-Jan-96        | 212.31                    | 191.80                           | 0.19                            |
|            |           |                            | 404.11                   | 28-Feb-96        | 211.72                    | 192.39                           | 0.59                            |
|            |           |                            | 404.11                   | 27-Mar-96        | 211.22                    | 192.89                           | 0.50                            |
|            |           |                            | 404.11                   | 31-Oct-96        | 210.14                    | 193.97                           | 1.08                            |
|            |           |                            | 404.11                   | 26-Nov-96        | 209.82                    | 194.29                           | 0.32                            |
|            |           |                            | 404.11                   | 26-Dec-96        | 209.30                    | 194.81                           | 0.52                            |
|            |           |                            | 404.11                   | 24-Jan-97        | 209.16                    | 194.95                           | 0.14                            |
|            |           |                            | 404.11                   | 26-Feb-97        | 207.80                    | 196.31                           | 1.36                            |
|            |           |                            | 404.11                   | 27-Mar-97        | 207.80                    | 196.31                           | 0.00                            |
| 05_DBMW41  | WT        | 182 - 222                  | 425.00                   | 12-Jan-96        | 163.12                    | 261.88                           |                                 |
|            |           |                            | 425.00                   | 7-Feb-96         | 162.82                    | 262.18                           | 0.30                            |
|            |           |                            | 425.00                   | 28-Feb-96        | 162.82                    | 262.18                           | 0.00                            |
|            |           |                            | 425.00                   | 27-Mar-96        | 162.45                    | 262.55                           | 0.37                            |
|            |           |                            | 425.00                   | 31-Oct-96        | 161.60                    | 263.40                           | 0.85                            |
|            |           |                            | 425.00                   | 26-Nov-96        | 161.16                    | 263.84                           | 0.44                            |
|            |           |                            | 425.00                   | 26-Dec-96        | 161.12                    | 263.88                           | 0.04                            |
|            |           |                            | 425.00                   | 24-Jan-97        | 161.16                    | 263.84                           | -0.04                           |
|            |           |                            | 425.00                   | 27-Feb-97        | 159.81                    | 265.19                           | 1.35                            |
|            |           |                            | 425.00                   | 27-Mar-97        | 159.86                    | 265.14                           | -0.05                           |
| 05_DGMW67  | WT        | 187 - 227                  | 429.00                   | 12-Jan-96        | 166.52                    | 262.48                           |                                 |
|            |           |                            | 429.00                   | 9-Feb-96         | 166.26                    | 262.74                           | 0.26                            |
|            |           |                            | 429.00                   | 27-Feb-96        | 166.19                    | 262.81                           | 0.07                            |
|            |           |                            | 429.00                   | 27-Mar-96        | 165.85                    | 263.15                           | 0.34                            |
|            |           |                            | 429.00                   | 31-Oct-96        | 165.34                    | 263.66                           | 0.51                            |
|            |           |                            | 429.00                   | 26-Nov-96        | 164.80                    | 264.20                           | 0.54                            |
|            |           |                            | 429.00                   | 26-Dec-96        | 164.68                    | 264.32                           | 0.12                            |
|            |           |                            | 429.00                   | 24-Jan-97        | 164.66                    | 264.34                           | 0.02                            |
|            |           |                            | 429.00                   | 27-Feb-97        | 163.20                    | 265.80                           | 1.46                            |
|            |           |                            | 429.00                   | 27-Mar-97        | 163.28                    | 265.72                           | -0.08                           |
| 05_DGMW68  | WT        | 190 - 210                  | 417.00                   | 12-Jan-96        | 168.71                    | 248.29                           |                                 |
|            |           |                            | 417.00                   | 26-Feb-96        | 168.11                    | 248.89                           | 0.60                            |
|            |           |                            | 417.00                   | 27-Feb-96        | 168.11                    | 248.89                           | 0.00                            |
|            |           |                            | 417.00                   | 27-Mar-96        | 167.79                    | 249.21                           | 0.32                            |
|            |           |                            | 417.00                   | 31-Oct-96        | 166.28                    | 250.72                           | 1.51                            |
|            |           |                            | 417.00                   | 26-Nov-96        | 165.68                    | 251.32                           | 0.60                            |
|            |           |                            | 417.00                   | 26-Dec-96        | 165.52                    | 251.48                           | 0.16                            |
|            |           |                            | 417.00                   | 24-Jan-97        | 161.51                    | 255.49                           | 4.01                            |
|            |           |                            | 417.00                   | 27-Feb-97        | 165.40                    | 251.60                           | -3.89                           |
|            |           |                            | 417.00                   | 27-Mar-97        | 164.82                    | 252.18                           | 0.58                            |
| 05_NEW01   | WT        | 163 - 203                  | 407.77                   | 31-Oct-96        | 164.04                    | 243.73                           |                                 |
|            |           |                            | 407.77                   | 26-Nov-96        | 163.36                    | 244.41                           | 0.68                            |
|            |           |                            | 407.77                   | 26-Dec-96        | 162.98                    | 244.79                           | 0.38                            |
|            |           |                            | 407.77                   | 27-Feb-97        | 162.05                    | 245.72                           | 0.93                            |
|            |           |                            | 407.77                   | 27-Mar-97        | 162.41                    | 245.36                           | -0.36                           |
|            |           |                            | 407.77                   | 26-Jun-97        | 162.23                    | 245.54                           | 0.18                            |
|            |           |                            | 407.77                   | 11-Aug-97        | 161.96                    | 245.81                           | 0.27                            |

*EXCERPTS*

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 (feet MSL) | MEASUREMENT DATE | DEPTH TO WATER (feet TOC) | WATER LEVEL ELEVATION (feet MSL) | CHANGE FROM PRIOR (+ or - feet) |
|------------|-----------|----------------------------|--------------------------|------------------|---------------------------|----------------------------------|---------------------------------|
| 05_UGMW27  | WT        | 198 - 238                  | 438.00                   | 11-Jan-96        | 169.84                    | 268.16                           |                                 |
|            |           |                            | 438.00                   | 29-Jan-96        | 169.72                    | 268.28                           | 0.12                            |
|            |           |                            | 438.00                   | 28-Feb-96        | 169.70                    | 268.30                           | 0.02                            |
|            |           |                            | 438.00                   | 27-Mar-96        | 169.32                    | 268.68                           | 0.38                            |
|            |           |                            | 438.00                   | 31-Oct-96        | 168.92                    | 269.08                           | 0.40                            |
|            |           |                            | 438.00                   | 26-Nov-96        | 168.40                    | 269.60                           | 0.52                            |
|            |           |                            | 438.00                   | 26-Dec-96        | 168.34                    | 269.66                           | 0.06                            |
|            |           |                            | 438.00                   | 23-Jan-97        | 168.26                    | 269.74                           | 0.08                            |
|            |           |                            | 438.00                   | 27-Feb-97        | 166.85                    | 271.15                           | 1.41                            |
|            |           |                            | 438.00                   | 27-Mar-97        | 166.62                    | 271.38                           | 0.23                            |
|            |           |                            | 438.00                   | 26-Jun-97        | 166.64                    | 271.36                           | -0.02                           |
|            |           |                            | 438.00                   | 11-Aug-97        | 166.98                    | 271.02                           | -0.34                           |
| 06_DGMW69  | WT        | 150 - 190                  | 324.33                   | 12-Jan-96        | 134.00                    | 190.33                           |                                 |
|            |           |                            | 324.33                   | 2-Feb-96         | 133.77                    | 190.56                           | 0.23                            |
|            |           |                            | 324.33                   | 27-Feb-96        | 133.50                    | 190.83                           | 0.27                            |
|            |           |                            | 324.33                   | 27-Mar-96        | 133.20                    | 191.13                           | 0.30                            |
|            |           |                            | 324.33                   | 31-Oct-96        | 133.06                    | 191.27                           | 0.14                            |
|            |           |                            | 324.33                   | 26-Nov-96        | 132.56                    | 191.77                           | 0.50                            |
|            |           |                            | 324.33                   | 27-Dec-96        | 133.10                    | 191.23                           | -0.54                           |
|            |           |                            | 324.33                   | 24-Jan-97        | 131.80                    | 192.53                           | 1.30                            |
|            |           |                            | 324.33                   | 27-Feb-97        | 131.14                    | 193.19                           | 0.66                            |
|            |           |                            | 324.33                   | 27-Mar-97        | 131.90                    | 192.43                           | -0.76                           |
|            |           |                            | 324.33                   | 26-Jun-97        | 131.44                    | 192.89                           | 0.46                            |
|            |           |                            | 324.33                   | 12-Aug-97        | 131.26                    | 193.07                           | 0.18                            |
| 06_UGMW28  | WT        | 140 - 180                  | 334.90                   | 12-Jan-96        | 139.36                    | 195.54                           |                                 |
|            |           |                            | 334.90                   | 16-Feb-96        | 138.91                    | 195.99                           | 0.45                            |
|            |           |                            | 334.90                   | 28-Feb-96        | 138.85                    | 196.05                           | 0.06                            |
|            |           |                            | 334.90                   | 27-Mar-96        | 138.51                    | 196.39                           | 0.34                            |
|            |           |                            | 334.90                   | 31-Oct-96        | 137.50                    | 197.40                           | 1.01                            |
|            |           |                            | 334.90                   | 26-Nov-96        | 137.04                    | 197.86                           | 0.46                            |
|            |           |                            | 334.90                   | 26-Dec-96        | 137.32                    | 197.58                           | -0.28                           |
|            |           |                            | 334.90                   | 23-Jan-97        | 136.78                    | 198.12                           | 0.54                            |
|            |           |                            | 334.90                   | 26-Feb-97        | 136.52                    | 198.38                           | 0.26                            |
|            |           |                            | 334.90                   | 27-Mar-97        | 136.90                    | 198.00                           | -0.38                           |
|            |           |                            | 334.90                   | 26-Jun-97        | 136.20                    | 198.70                           | 0.70                            |
|            |           |                            | 334.90                   | 11-Aug-97        | 136.04                    | 198.86                           | 0.16                            |
| 07_DBMW100 | WT        | 131 - 171                  | 286.44                   | 11-Jan-96        | 104.60                    | 181.84                           |                                 |
|            |           |                            | 286.44                   | 31-Jan-96        | 104.58                    | 181.86                           | 0.02                            |
|            |           |                            | 286.44                   | 27-Feb-96        | 104.52                    | 181.92                           | 0.06                            |
|            |           |                            | 286.44                   | 31-Oct-96        | 104.28                    | 182.16                           | 0.24                            |
|            |           |                            | 286.44                   | 26-Nov-96        | 103.60                    | 182.84                           | 0.68                            |
|            |           |                            | 286.44                   | 27-Dec-96        | 102.90                    | 183.54                           | 0.70                            |
|            |           |                            | 286.44                   | 26-Feb-97        | 103.36                    | 183.08                           | -0.46                           |
|            |           |                            | 286.44                   | 27-Mar-97        | 102.63                    | 183.81                           | 0.73                            |
|            |           |                            | 286.44                   | 26-Jun-97        | 103.36                    | 183.08                           | -0.73                           |
|            |           |                            | 286.44                   | 12-Aug-97        | 103.26                    | 183.18                           | 0.10                            |
| 07_DBMW43  | WT        | 150 - 190                  | 292.56                   | 12-Jan-96        | 113.01                    | 179.55                           |                                 |
|            |           |                            | 292.56                   | 19-Feb-96        | 112.55                    | 180.01                           | 0.46                            |
|            |           |                            | 292.56                   | 27-Feb-96        | 111.41                    | 181.15                           | 1.14                            |
|            |           |                            | 292.56                   | 27-Mar-96        | 112.42                    | 180.14                           | -1.01                           |
|            |           |                            | 292.56                   | 31-Oct-96        | 113.95                    | 178.61                           | -1.53                           |
|            |           |                            | 292.56                   | 26-Nov-96        | 113.02                    | 179.54                           | 0.93                            |
|            |           |                            | 292.56                   | 26-Dec-96        | 112.60                    | 179.96                           | 0.42                            |
|            |           |                            | 292.56                   | 23-Jan-97        | 111.96                    | 180.60                           | 0.64                            |
|            |           |                            | 292.56                   | 26-Feb-97        | 111.40                    | 181.16                           | 0.56                            |
|            |           |                            | 292.56                   | 27-Mar-97        | 112.08                    | 180.48                           | -0.68                           |
|            |           |                            | 292.56                   | 26-Jun-97        | 112.84                    | 179.72                           | -0.76                           |
|            |           |                            | 292.56                   | 12-Aug-97        | 112.96                    | 179.60                           | -0.12                           |

*EXCERPTS*

***Appendix G***  
***Sampling Strategy – Anomaly Areas 4 and 5,***  
***June and November 1999***

## FACSIMILE

Date: 7 June 1999

From: Lynn Marie Hornecker 

To: **Glenn Kistner (USEPA)**  
**Tayseer Mahmoud (Cal EPA)**  
**Patricia Hannon (RWQCB)**

Subj: **Sampling Strategy for Aerial Photograph Anomaly Areas 4 and 5**  
**Marine Corps Air Station, El Toro**

The purposes of this facsimile are to provide notification of our planned schedule for sampling and to provide additional information pertaining to the sampling strategy for Aerial Photograph Anomaly Areas 4 and 5 (also known as Anomaly Areas 4 and 5) at the Marine Corps Air Station, El Toro, California. If you have questions pertaining to this facsimile, please do not hesitate to call me at (619) 532-4162.

### ***Schedule and Background Information***

We will have an opportunity to conduct sampling activities at Anomaly Areas 4 and 5 in July or August 1999. We plan to investigate these sites under the Station's petroleum corrective action program and we plan to report the results in a Site Assessment Report that will include site photographs, laboratory test results, an assessment of the potential risk to ground water caused by residual petroleum hydrocarbons at the anomaly sites, and recommendations for the future management of the sites. Copies of the Site Assessment Report(s) will be provided to all BRAC Cleanup Team members.

Sampling will be conducted in accordance with the 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). This work plan, that is used for the current sampling activities at Temporary Accumulation Areas, includes procedures for sample collection and test methods for analyses of samples for petroleum hydrocarbons, volatile organic compounds, metals, and other potential contaminants of concern.

Detailed information, including the historical aerial photographs on which the individual anomalies within Areas 4 and 5 were identified, are presented in the Technical Memorandum, Aerial Photograph Anomalies (Southwest Division, April 1999) that was submitted to the Base Realignment and Closure Cleanup Team (BCT) members on 5 April 1999.

### ***Sampling Strategy***

#### ***Anomaly Area 4 (former slurry beds identified on 1946 photograph):***

Anomaly Area 4 is located adjacent to Building 306, the former water treatment facility, within the boundaries of Installation Restoration Program (IRP) Site 24 – the Volatile Organic Compound (VOC) Source Area. The former water treatment plant appears to have operated during the 1940's. The former water treatment plant included slurry beds (or surface impoundments) that have been filled with soil to match the existing grade. The vicinity of the former impoundments located north of Building 307 is covered with a grass cover. The vicinity of the former slurry beds located immediately northwest of Building 306 is covered with asphalt pavement.

Proposed sampling locations are shown on Figure 2. Five shallow soil borings are proposed for the slurry beds immediately adjacent to Building 306 and three shallow soil borings are proposed for the impoundments located north of Building 307 (total of eight borings). Samples will be analyzed for petroleum hydrocarbons, volatile organic compounds (including methyl tertiary butyl ether (MTBE)), and metals.

Monitoring wells for Installation Restoration Program (IRP) Site 9 (the Crash Crew Training Pit Number 1) and IRP Site 12 (the former Sludge Drying Beds) are located in the vicinity of Anomaly Area 4, and water quality information from these wells will be reviewed during the assessment of Anomaly Area 4. Anomaly Area 4 overlies the VOC ground water plume from IRP Site 24, and the depth to ground water is approximately 100 feet.

#### ***Anomaly Area 5 (former construction staging area (and areas of disturbed ground) identified on photographs during the period from 1967 to 1988):***

Anomaly Area 5 is located adjacent to the east end of the east-west runway in the vicinity of MSC D1 (the Desert Storm Staging Area) and Solid Waste Management Unit 264 (Defense Reutilization and Marketing Office Yard 3). Most of Anomaly Area 5 is covered with a grass cover, however, some of the individual anomalies appear to be located beneath the end of the runway.

Proposed sampling locations are shown on Figure 3. Five shallow borings are proposed near the edge of the east-west runway. Samples will be analyzed for petroleum hydrocarbons and volatile organic compounds (including MTBE), and metals.

Monitoring wells for IRP Site 5 (the Perimeter Landfill) are located nearby, and water quality data from these wells will be reviewed during the assessment of Anomaly Area 5. The depth to ground water at IRP Site 5 is approximately 160 feet.

**Table. Proposed Sampling Strategy for Aerial Photograph  
 Anomaly Areas 4 and 5  
 Marine Corps Air Station, El Toro**

| Site Identification  | Sampling Strategy   | Comments  |
|--|---|---|
| <p><b>Anomaly Area 4</b><br/>           (SAIC 39 (1946)<br/>           former slurry beds</p>  | <p>8 shallow borings, each<br/>           approximately 20 feet deep, with<br/>           analysis of two samples per<br/>           boring by EPA Methods 8015M<br/>           (jet fuel, diesel, gasoline), 8260<br/>           (Volatile Organic Compounds<br/>           including MTBE), and 6000/7000<br/>           metals</p> | <p>Site is located near Buildings 306<br/>           and 307.<br/>           Small slurry bed area, near<br/>           Building 306, is approximately 60<br/>           feet by 60 feet.<br/>           Large slurry bed area, north of<br/>           Building 307, is approximately<br/>           100 feet by 800 feet.</p> |
| <p><b>Anomaly Area 5</b><br/>           (SAIC 161 (1967), SAIC<br/>           215 (1971), SAIC 287<br/>           (1974), SAIC 314 (1975),<br/>           and SAIC 542 (1988))<br/>           (Staging Area for previous<br/>           construction projects<br/>           (anomaly sites)</p> | <p>5 shallow borings, each<br/>           approximately 20 feet deep, with<br/>           analysis of two samples per<br/>           boring by EPA Methods 8015M<br/>           (jet fuel, diesel, gasoline), 8260<br/>           (Volatile Organic Compounds<br/>           including MTBE), and 6000/7000<br/>           metals</p> | <p>Site is located adjacent to the<br/>           east end of the east-west<br/>           runway.<br/>           Desert Storm Staging Area (MSC<br/>           D1) may be investigated<br/>           concurrently with Area 5.<br/><br/>           Anomaly Area 5 is approximately<br/>           250 feet by 450 feet.</p>   |

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

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

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]

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

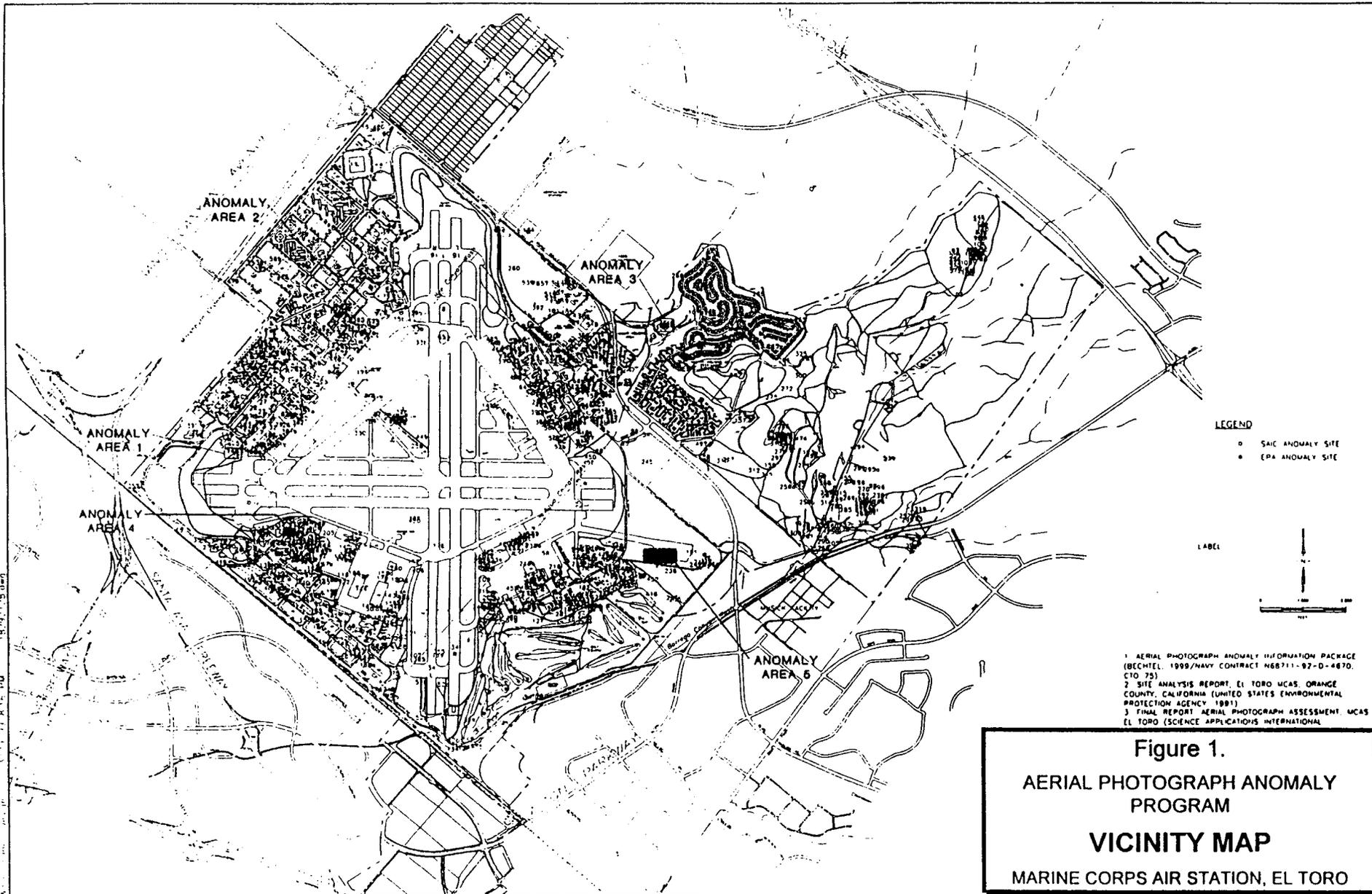
Southwest Division, Naval Facilities Engineering Command. 1999. *Technical Memorandum, Aerial Photograph Anomalies, Marine Corps Air Station, El Toro, California.* April.

### **Figures**

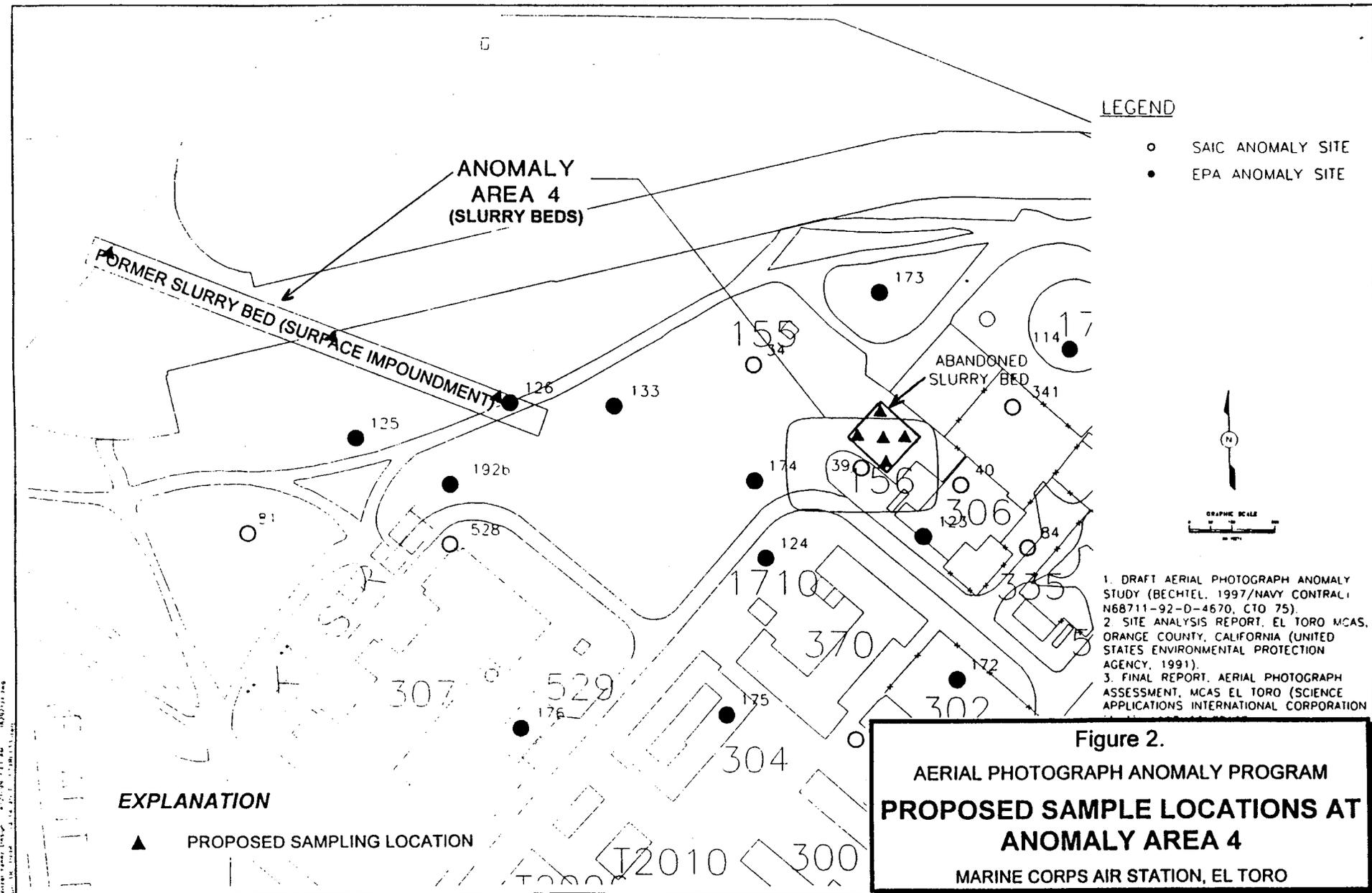
- 1 **Vicinity Map**
- 2 **Proposed Sample Locations at Anomaly Area 4**
- 3 **Proposed Sample Locations at Anomaly Area 5**

CF:

Joseph Joyce (MCAS El Toro BEC)  
Andy Piszkin (MCAS El Toro Lead RPM)  
Dave DeMars (MCAS El Toro RPM)  
Project File (MCAS El Toro)



**Figure 1.**  
**AERIAL PHOTOGRAPH ANOMALY PROGRAM**  
**VICINITY MAP**  
**MARINE CORPS AIR STATION, EL TORO**







## Department of Toxic Substances Control



Edwin F. Lowry, Director  
5796 Corporate Avenue  
Cypress, California 9063

Winston H. Hickox  
Secretary for  
Environmental  
Protection

June 22, 1999

Mr. Joseph Joyce  
BRAC Environmental Coordinator  
U.S. Marine Corps Air Station - El Toro  
AC/S, Environmental (1AU)  
P.O. Box 95001  
Santa Ana, California 92709-5001

Dear Mr. Joyce:

### COMMENTS ON SAMPLING STRATEGY FOR AERIAL PHOTOGRAPH ANOMALY AREAS 4 & 5, MARINE CORPS AIR STATION (MCAS) EI TORO

The Department of Toxic Substances Control (DTSC) has reviewed the above subject document dated June 7, 1999. The document provides information regarding the sampling strategy for investigation of Aerial Photograph Anomaly Areas 4 and 5 and a schedule for conducting the sampling activities. The results of investigation and recommendations for future management of the sites will be submitted to the regulatory agencies for review and comments. DTSC comments are as follows:

#### GENERAL COMMENTS:

1. Please ensure that quality assurance/quality control (QA/QC) laboratory samples are in accordance with the procedures described in the Draft Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Assessment Sites (OHM, 1997). The Site Assessment Report(s) should contain a narrative pertaining to the laboratory analyses that includes description of sampling techniques, decontamination procedures, analytical methods and laboratory procedures, laboratory data quality, and data validation results.
2. The Sampling Strategy states that sample analyses will be conducted for petroleum hydrocarbons, volatile organics compounds (VOCs), metals, and other potential contaminant of concern. The Sampling Strategy must also specify the contaminants of concern (COCs), appropriate test methods, and detection limits.
3. The Sampling Strategy states that "shallow" soil samples, approximately 20 feet deep will be collected. Please provide the rationale for the depth proposed for taking the samples.

Mr. Joseph Joyce  
June 21, 1999  
Page 2

**SPECIFIC COMMENTS:**

4. **Anomaly Area 4 - former slurry beds identified on 1946 photograph. Located adjacent to Building 306, the former water treatment facility, within the boundaries of IRP site 24, the VOC source area.**
  - a. All samples collected from the former slurry beds should, at a minimum, be analyzed for the same COCs identified at IRP Site 12, the former Sludge Drying Beds, since they probably handled the same waste. Soil samples collected at IRP Site 12 were analyzed for VOCs, TPH, SVOCs (specifically for PAHs), PCBs, Pesticides, Herbicides, and cyanide.
  - b. Five shallow soil borings adjacent to Building 306 and three shallow soil borings are proposed for the impoundments located north of Building 307. DTSC recommends that two samples be collected from each proposed sample location; one sample at a depth near the bottom of the slurry bed and one sample five feet below the bottom of the slurry bed. Additional samples may be required at deeper depths if contamination is discovered. Continuous coring should be conducted and the lithology recorded.
  
5. **Anomaly Area 5 - former construction staging area (and areas of disturbed ground) identified on photographs during the period from 1967 to 1988.**

DTSC recommends the soil samples be collected within 10 feet below ground surface (bgs). The information will be useful for preparing a risk assessment if contamination is found. Should the disturbed earth extend beyond 10 feet bgs, additional samples should be collected at the contact surface between the disturbed and native soil.

If you have any questions, please contact me at (714) 484-5418.

Sincerely,



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

cc: See next page

Mr. Joseph Joyce  
June 21, 1999  
Page 3

cc: Mr. Glenn Kistner, SFID-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  
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California Regional Water Quality Control Board  
Santa Ana Region  
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Riverside, California 92501-3339

Mr. Gregory F. Hurley  
Restoration Advisory Board Co-chair  
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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



**OHM Remediation Services Corp.**

3317 Michelson Drive, Suite 200

Irvine, CA 92612-1692

Tel. 949.261.6441

Fax. 949.474.8309

A Member of The IT Group

November 8, 1999

Contracting Officer  
Naval Facilities Engineering Command  
Southwest Division  
Bozier H. Demarree  
1220 Pacific Highway  
San Diego, CA 92132-5187

Attention: Ms. Lynn Hornecker

**Subject: Supplemental Sampling Strategy, Aerial Photograph Areas 4 and 5  
Contract N68711-93-D-1459, Delivery Order 070,  
Remediation of Various UST, AOC and RFA Sites, MCAS El Toro, California**

Dear Ms. Hornecker:

The attached Supplemental Sampling Strategy, Aerial Photograph Anomaly Areas 4 and 5 provides a response to the comments generated by DTSC on the original Sampling Strategy the you faxed to the agencies on June 7, 1999. This supplemental document addresses the questions raised and includes the chemicals of concern and detection limits anticipated for these chemicals.

Following your concurrence, and that of DTSC, OHM will implement the field sampling discussed in the document.

If you have any questions or need additional information or copies please call or e-mail me.

Sincerely,

A handwritten signature in cursive script that reads 'William Sedlak'.

William Sedlak, P.E.  
Sr. Project Manager

cc: L. Holloway, COTR IC/IE  
OHM PMO File IC/IE  
Project File, Communications B.01.

**Supplemental Sampling Strategy, Aerial Photograph Anomaly Areas 4 and 5  
Clarification of Comments from California Department of Toxic Substances Control**

**Background**

A sampling strategy was developed and submitted to the BRAC Cleanup Team (BCT) (including U.S. EPA, California Department of Toxic Substances Control and Regional Water Quality Control Board) in early June 1999. The Department of Toxic Substances Control (DTSC) submitted comments on the strategy on June 22, 1999. In these comments, DTSC requested clarification of the sampling quality control and laboratory methodology.

|   | <b>Comments by Tayseer Mahmoud, June 22, 1999<br/>General Comments</b>   | <b>Response/Clarification</b>  |
|---|--|--|
| 1 | Please ensure that quality assurance/quality control (QA/QC) laboratory samples are in accordance with the procedures described in the Draft Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Assessment Sites (OHM, 1997). The Site Assessment Reports should contain a narrative pertaining to the laboratory analyses that includes description of sampling techniques, decontamination procedures, analytical methods and laboratory procedures. Laboratory data quality, and data validation results. | The procedures identified in the Final Supplemental Work Plan(OHM 1997) will be followed.  |
| 2 | The Sampling Strategy states that sample analyses will be conducted for petroleum hydrocarbons, volatile hydrocarbons, volatile organic compounds (VOCs), metals and other potential contaminant of concern. The Sampling Strategy must also specify the contaminants of concern (COCs), appropriate test methods, and detection limits.   | The COCs are provided in Table 1, along with test methods and anticipated levels of detection. Analyses will include VOCs, TPH, semi-volatile organic compounds (SVOC), pesticides/herbicides, metals, and PCBs. The detection levels are dependent on a variety of factors including the nature of the contaminant, type of media analyzed, and other contaminants that mask, or due to higher concentrations raise the detection limit. Detection limits are desired below the Preliminary Remediation Goal (PRGs) for each compound. The same methodology used in the analysis of samples from the temporary accumulation areas will be used for the anomalies. |
| 3 | The sampling Strategy states that "shallow" soil samples, approximately 20 feet deep will be collected. Please provide the rationale for the depth proposed for taking the samples.  | The 20 foot depth referred to in the Proposed Strategy Table is the anticipated maximum depth. Sample depths are discussed in response to item 4 and 5 below.  |
|   | <b>Specific Comments</b>   |  |

|   |  |   |
|---|--|---|
| 4 | Anomaly Area 4 - former slurry beds identified on 1946 photograph. Located adjacent to Building 306, the former water treatment facility, within the boundaries of IRP Site 24, the VOC source area.   |   |
| 4 | a. All samples collected from the former slurry beds should, at a minimum, be analyzed for the same COCs identified at IRP Site 12, the former Sludge Drying Beds, since they probably handled the same waste. Soil samples at IRP Site 12 were analyzed for VOCs, TPH, SVOCs (specifically for PAHs), PCBs, Pesticides, Herbicides, and cyanide.  | Agreed. Table 1 identifies the COCs and test methods.   |
| 4 | b. Five shallow soil borings adjacent to Building 306 and three shallow soil borings are proposed for the impoundments located north of Building 307. DTSC recommends that two samples be collected from each proposed sample location: one sample at a depth near the bottom of the slurry bed and one sample five feet below the bottom of the slurry bed. Additional samples may be required at deeper depths if contamination is discovered. Continuous coring should be conducted and the lithology recorded. | <p>The depth of the slurry bed is estimated to be from 9 to 10 feet below the surface grade. This is based on a 1949 drawing of the slurry pit and vicinity (see attached copy). Based on the details provided in the Phase II RI for IRP Site 12, the slurry beds at that site were abandoned in place, and simply tilled into the existing grade. This resulted in an increased ground elevation of approximately 5 feet.</p> <p>Due to the uncertainty in the depth of the slurry pits, sampling is proposed at 5, 10 and 15 feet bgs. The 5-foot sample theoretically would be in the tilled materials, the 10 foot should be at the bottom of the bed, and the 15 foot sample should be below the bottom of the bed. Lithology will be recorded adjacent to sampling depths.</p> |
| 5 | <p>Anomaly Area 5 - former construction staging area (and areas of disturbed ground) identified on photographs during the period from 1967 to 1988.</p> <p>DTSC recommends the soil samples be collected within 10 feet below ground surface (bgs). The information will be useful for preparing a risk assessment if contamination is found. Should the disturbed earth extend beyond 10 feet bgs, additional samples should be collected at the contact surface between the disturbed and native soil.</p>       | Two samples are proposed per boring. Proposed sample depths are from 5 to 7 feet bgs (depending on whether surface is paved or dirt) and 10 to 12 feet bgs.   |

**Table 1: Potential Contaminants of Concern Reporting Limits**

| Parameter/Method          | Analyte                        | Water |      | Soil  |       |
|---------------------------|--------------------------------|-------|------|-------|-------|
|                           |                                | RL    | Unit | RL    | Unit  |
| VOCs<br>EPA 8260A         | 1,1,1-TCA                      | 5     | µg/L | 5     | µg/kg |
|                           | 1,1,2,2-Tetrachloroethane      | 5     | µg/L | 5     | µg/kg |
|                           | 1,1,2-TCA                      | 5     | µg/L | 5     | µg/kg |
|                           | 1,1-DCA                        | 5     | µg/L | 5     | µg/kg |
|                           | 1,1-DCE                        | 5     | µg/L | 5     | µg/kg |
|                           | 1,2-DCA                        | 5     | µg/L | 5     | µg/kg |
|                           | 1,2-Dichloropropane            | 5     | µg/L | 5     | µg/kg |
|                           | Acetone                        | 50    | µg/L | 50    | µg/kg |
|                           | Methyl ethyl ketone (MEK)      | 50    | µg/L | 50    | µg/kg |
|                           | Methylisobutyl ketone (MIBK)   | 50    | µg/L | 50    | µg/kg |
|                           | Methyl tert-butyl ether (MTBE) | 10    | µg/L | 10    | µg/kg |
|                           | 2-Hexanone                     | 50    | µg/L | 50    | µg/kg |
|                           | Vinyl acetate                  | 50    | µg/L | 50    | µg/kg |
|                           | 2-Chloroethylvinylether        | 50    | µg/L | 50    | µg/kg |
|                           | Benzene                        | 5     | µg/L | 5     | µg/kg |
|                           | Bromodichloromethane           | 5     | µg/L | 5     | µg/kg |
|                           | Bromoform                      | 5     | µg/L | 5     | µg/kg |
|                           | Bromomethane                   | 5     | µg/L | 5     | µg/kg |
|                           | Carbon disulfide               | 5     | µg/L | 5     | µg/kg |
|                           | Carbon tetrachloride           | 5     | µg/L | 5     | µg/kg |
|                           | Chlorobenzene                  | 5     | µg/L | 5     | µg/kg |
|                           | Chloroethane                   | 5     | µg/L | 5     | µg/kg |
|                           | Chloroform                     | 5     | µg/L | 5     | µg/kg |
|                           | Chloromethane                  | 5     | µg/L | 5     | µg/kg |
|                           | cis-1,2-DCE                    | 5     | µg/L | 5     | µg/kg |
|                           | cis-1,3-Dichloropropene        | 5     | µg/L | 5     | µg/kg |
|                           | Dibromochloromethane           | 5     | µg/L | 5     | µg/kg |
|                           | Ethylbenzene                   | 5     | µg/L | 5     | µg/kg |
|                           | Methylene chloride             | 5     | µg/L | 5     | µg/kg |
|                           | Styrene                        | 5     | µg/L | 5     | µg/kg |
|                           | TCE                            | 5     | µg/L | 5     | µg/kg |
|                           | Tetrachloroethene              | 5     | µg/L | 5     | µg/kg |
|                           | Toluene                        | 5     | µg/L | 5     | µg/kg |
| trans-1,2-DCE             | 5                              | µg/L  | 5    | µg/kg |       |
| trans-1,3-Dichloropropene | 5                              | µg/L  | 5    | µg/kg |       |
| Vinyl chloride            | 5                              | µg/L  | 5    | µg/kg |       |
| Xylene, Total             | 5                              | µg/L  | 5    | µg/kg |       |

Table 1: Potential Contaminants of Concern Reporting Limits

| Parameter/Method  | Analyte                       | Water |      | Soil  |       |
|---|-------------------------------|-------|------|-------|-------|
|   |                               | RL    | Unit | RL    | Unit  |
| Semivolatile organics<br>Base/Neutral Extractables<br>EPA 8270B | 1,2,4-Trichlorobenzene        | 10    | µg/L | 330   | µg/kg |
|   | 1,2-Dichlorobenzene           | 10    | µg/L | 330   | µg/kg |
|   | 1,3-Dichlorobenzene           | 10    | µg/L | 330   | µg/kg |
|   | 1,4-Dichlorobenzene           | 10    | µg/L | 330   | µg/kg |
|   | 2,4-Dinitrotoluene            | 10    | µg/L | 330   | µg/kg |
|   | 2,6-Dinitrotoluene            | 10    | µg/L | 330   | µg/kg |
|   | 2-Chloronaphthalene           | 10    | µg/L | 330   | µg/kg |
|   | 2-Methylnaphthalene           | 10    | µg/L | 330   | µg/kg |
|   | 2-Nitroaniline                | 25    | µg/L | 830   | µg/kg |
|   | 3-Nitroaniline                | 25    | µg/L | 830   | µg/kg |
|   | 3,3'-Dichlorobenzidine        | 10    | µg/L | 330   | µg/kg |
|   | 4-Bromophenyl phenyl ether    | 10    | µg/L | 330   | µg/kg |
|   | 4-Chloroaniline               | 10    | µg/L | 330   | µg/kg |
|   | 4-Chlorophenyl phenyl ether   | 10    | µg/L | 330   | µg/kg |
|   | 4-Nitroaniline                | 25    | µg/L | 830   | µg/kg |
|   | Acenaphthylene                | 10    | µg/L | 330   | µg/kg |
|   | Acenaphthene                  | 10    | µg/L | 330   | µg/kg |
|   | Anthracene                    | 10    | µg/L | 330   | µg/kg |
|   | Benzo (a) anthracene          | 10    | µg/L | 330   | µg/kg |
|   | Benzo (a) pyrene              | 10    | µg/L | 250   | µg/kg |
|   | Benzo (b) fluoranthene        | 10    | µg/L | 330   | µg/kg |
|   | Benzo (k) fluoranthene        | 10    | µg/L | 330   | µg/kg |
|   | Benzo (g,h,i) perylene        | 10    | µg/L | 330   | µg/kg |
|   | Bis (2-chloroethoxy) methane  | 10    | µg/L | 330   | µg/kg |
|   | Bis (2-chloroethyl) ether     | 10    | µg/L | 50    | µg/kg |
|   | Bis (2-chloroisopropyl) ether | 10    | µg/L | 330   | µg/kg |
|   | Bis (2-ethylhexyl) phthalate  | 10    | µg/L | 330   | µg/kg |
|   | Butyl benzylphthalate         | 10    | µg/L | 330   | µg/kg |
|   | Chrysene                      | 10    | µg/L | 330   | µg/kg |
|   | Di-n-butylphthalate           | 10    | µg/L | 330   | µg/kg |
|   | Di-n-octylphthalate           | 10    | µg/L | 330   | µg/kg |
|   | Dibenz (a,h) anthracene       | 10    | µg/L | 250   | µg/kg |
|   | Dibenzofuran                  | 10    | µg/L | 330   | µg/kg |
|   | Diethyl phthalate             | 10    | µg/L | 330   | µg/kg |
|   | Dimethyl phthalate            | 10    | µg/L | 330   | µg/kg |
|   | Fluoranthene                  | 10    | µg/L | 330   | µg/kg |
|   | Fluorene                      | 10    | µg/L | 330   | µg/kg |
|   | Hexachlorobenzene             | 10    | µg/L | 330   | µg/kg |
|   | Hexachlorobutadiene           | 10    | µg/L | 330   | µg/kg |
|   | Hexachlorocyclopentadiene     | 10    | µg/L | 330   | µg/kg |
| Hexachloroethane  | 10                            | µg/L  | 330  | µg/kg |       |
| Indeno (1,2,3-cd) pyrene  | 10                            | µg/L  | 330  | µg/kg |       |
| N-Nitrosodiphenylamine  | 10                            | µg/L  | 330  | µg/kg |       |
| N-Nitrosodi-n-propylamine                                       | 10                            | µg/L  | 250  | µg/kg |       |
| Naphthalene   | 10                            | µg/L  | 330  | µg/kg |       |
| Nitrobenzene  | 10                            | µg/L  | 330  | µg/kg |       |
| Phenanthrene  | 10                            | µg/L  | 330  | µg/kg |       |

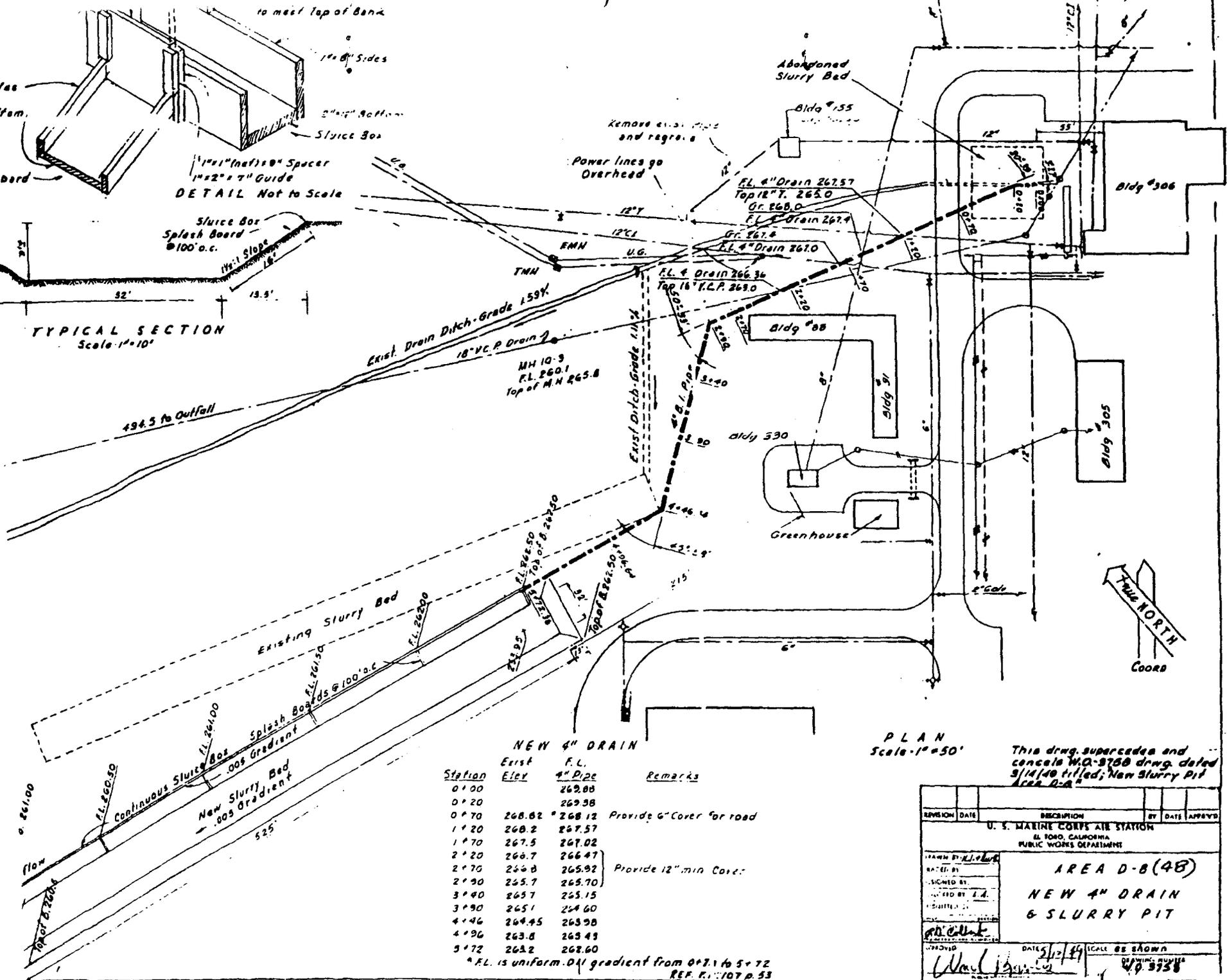
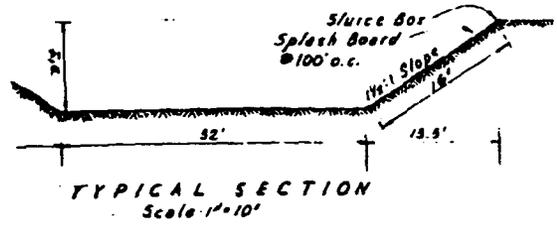
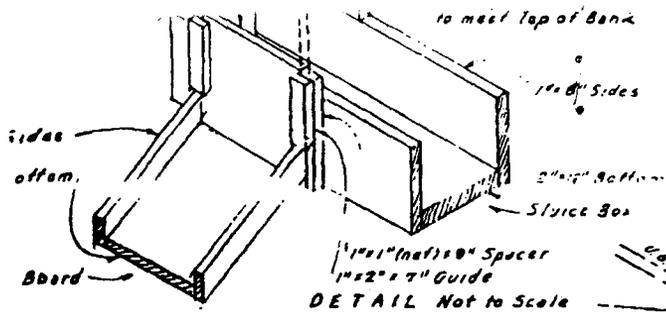
**Table 1: Potential Contaminants of Concern Reporting Limits**

| Parameter/Method                                       | Analyte                    | Water |      | Soil  |       |
|--|----------------------------|-------|------|-------|-------|
|  |                            | RL    | Unit | RL    | Unit  |
| EPA 8270B (cont'd)                                     | Pyrene                     | 10    | µg/L | 330   | µg/kg |
|  | 2,4,5-Trichlorophenol      | 25    | µg/L | 830   | µg/kg |
|  | 2,4,6-Trichlorophenol      | 10    | µg/L | 330   | µg/kg |
|  | 2,4-Dichlorophenol         | 10    | µg/L | 330   | µg/kg |
|  | 2,4-Dimethylphenol         | 10    | µg/L | 330   | µg/kg |
|  | 2,4-Dinitrophenol          | 25    | µg/L | 830   | µg/kg |
|  | 2-Chlorophenol             | 10    | µg/L | 330   | µg/kg |
|  | 2-Methylphenol             | 10    | µg/L | 330   | µg/kg |
|  | 2-Nitrophenol              | 10    | µg/L | 330   | µg/kg |
|  | 4,6-Dinitro-2-methylphenol | 25    | µg/L | 830   | µg/kg |
|  | 4-Chloro-3-methylphenol    | 10    | µg/L | 330   | µg/kg |
|  | 4-Methylphenol             | 10    | µg/L | 330   | µg/kg |
|  | 4-Nitrophenol              | 25    | µg/L | 830   | µg/kg |
|  | Pentachlorophenol          | 10    | µg/L | 330   | µg/kg |
| Phenol   | 10                         | µg/L  | 330  | µg/kg |       |
| Organochlorine<br>Pesticides and PCBs<br>EPA 8081/8082 | α-BHC                      | 0.35  | µg/L | 0.019 | mg/kg |
|  | β-BHC                      | 0.23  | µg/L | 0.033 | mg/kg |
|  | δ-BHC                      | 0.24  | µg/L | 0.011 | mg/kg |
|  | γ-BHC (Lindane)            | 0.25  | µg/L | 0.020 | mg/kg |
|  | α-Chlordane                | 0.80  | µg/L | 0.015 | mg/kg |
|  | γ-Chlordane                | 0.37  | µg/L | 0.015 | mg/kg |
|  | 4,4'-DDD                   | 0.50  | µg/L | 0.042 | mg/kg |
|  | 4,4'-DDE                   | 0.58  | µg/L | 0.025 | mg/kg |
|  | 4,4'-DDT                   | 0.81  | µg/L | 0.036 | mg/kg |
|  | Aldrin                     | 0.34  | µg/L | 0.022 | mg/kg |
|  | Dieldrin                   | 0.44  | µg/L | 0.035 | mg/kg |
|  | Endosulfan I               | 0.30  | µg/L | 0.021 | mg/kg |
|  | Endosulfan II              | 0.40  | µg/L | 0.024 | mg/kg |
|  | Endosulfan Sulfate         | 0.35  | µg/L | 0.036 | mg/kg |
|  | Endrin                     | 0.39  | µg/L | 0.036 | mg/kg |
|  | Endrin Aldehyde            | 0.50  | µg/L | 0.016 | mg/kg |
|  | Heptachlor                 | 0.40  | µg/L | 0.020 | mg/kg |
|  | Heptachlor Epoxide         | 0.32  | µg/L | 0.021 | mg/kg |
|  | Methoxychlor               | 0.86  | µg/L | 0.057 | mg/kg |
|  | PCB-1016                   | 1.00  | µg/L | 0.70  | mg/kg |
|  | PCB-1221                   | 1.00  | µg/L | 0.70  | mg/kg |
|  | PCB-1232                   | 1.00  | µg/L | 0.70  | mg/kg |
|  | PCB-1242                   | 1.00  | µg/L | 0.70  | mg/kg |
| PCB-1248   | 1.00                       | µg/L  | 0.70 | mg/kg |       |
| PCB-1254   | 1.00                       | µg/L  | 0.70 | mg/kg |       |
| PCB-1260   | 1.00                       | µg/L  | 0.70 | mg/kg |       |
| Toxaphene  | 0.50                       | µg/L  | 0.57 | mg/kg |       |

**Table 1: Potential Contaminants of Concern Reporting Limits**

| Parameter/Method                                   | Analyte      | Water   |      | Soil  |       |
|--|--------------|---------|------|-------|-------|
|  |              | RL      | Unit | RL    | Unit  |
| Chlorinated Phenoxy Acid<br>Herbicides<br>EPA 8150 | 2,4-D        | 12.0    | µg/L | 0.8   | mg/kg |
|  | 2,4-DB       | 9.0     | µg/L | 0.6   | mg/kg |
|  | 2,4,5-T      | 2.0     | µg/L | 0.1   | mg/kg |
|  | 2,4,5-TP     | 1.7     | µg/L | 0.1   | mg/kg |
|  | Dalapon      | 60.0    | µg/L | 4.0   | mg/kg |
|  | Dicamba      | 2.7     | µg/L | 0.2   | mg/kg |
|  | Dichloroprop | 6.5     | µg/L | 0.5   | mg/kg |
|  | Dinoseb      | 0.7     | µg/L | 0.05  | mg/kg |
|  | MCPA         | 2,500.0 | µg/L | 170.0 | mg/kg |
|  | MCPP         | 1,900.0 | µg/L | 130.0 | mg/kg |
| ICP Screen for Metals<br>EPA 6010/7000             | Antimony     | 500     | µg/L | 1     | mg/kg |
|  | Arsenic      | 5       | µg/L | 0.5   | mg/kg |
|  | Barium       | 100     | µg/L | 1     | mg/kg |
|  | Beryllium    | 10      | µg/L | 0.2   | mg/kg |
|  | Cadmium      | 5       | µg/L | 0.5   | mg/kg |
|  | Chromium     | 50      | µg/L | 1     | mg/kg |
|  | Cobalt       | 50      | µg/L | 1     | mg/kg |
|  | Copper       | 50      | µg/L | 1     | mg/kg |
|  | Lead         | 5       | µg/L | 0.3   | mg/kg |
|  | Manganese    | 20      | µg/L | 2     | mg/kg |
|  | Molybdenum   | 100     | µg/L | 2     | mg/kg |
|  | Nickel       | 150     | µg/L | 2     | mg/kg |
|  | Selenium     | 5       | µg/L | 0.5   | mg/kg |
|  | Silver       | 50      | µg/L | 1     | mg/kg |
| Thallium   | 400          | µg/L    | 1    | mg/kg |       |
| Vanadium   | 100          | µg/L    | 1    | mg/kg |       |
| Zinc   | 20           | µg/L    | 1    | mg/kg |       |
| TPH-Purgeable<br>CA LUFT                           | Gasoline     | 0.1     | mg/L | 10    | mg/kg |
| TPH-Extractable<br>CA LUFT                         | Diesel       | 0.1     | mg/L | 10    | mg/kg |
| EPA 9010   | Cyanide      | 0.02    | mg/L | 0.5   | mg/kg |

If required for semi-volatile organic compounds, the Selected Ion Monitoring (SIM) technique may be used to achieve lower detection limits to meet certain EPA Region IX PRG values. The OHM criteria for acceptance of the SIM data is that the laboratory Method Detection Limit must be equal to or less than half of the PRG value.



**NEW 4" DRAIN**

| Station | Exist Elev | F.L. 4" Pipe | Remarks                   |
|---------|------------|--------------|---------------------------|
| 0+00    |            | 262.00       |                           |
| 0+20    |            | 262.98       |                           |
| 0+70    | 268.62     | 268.12       | Provide 6" Cover for road |
| 1+20    | 268.2      | 267.57       |                           |
| 1+70    | 267.5      | 267.02       |                           |
| 2+20    | 266.7      | 266.47       |                           |
| 2+70    | 266.0      | 265.92       | Provide 12" min. Cover    |
| 2+90    | 265.7      | 265.70       |                           |
| 3+40    | 265.7      | 265.15       |                           |
| 3+90    | 265.1      | 264.60       |                           |
| 4+46    | 264.45     | 263.98       |                           |
| 4+96    | 263.8      | 263.43       |                           |
| 5+72    | 263.2      | 262.60       |                           |

\* F.L. is uniform .04% gradient from 0+72.1 to 5+72  
REF. P. 107 P. 53

**PLAN**  
Scale 1"=50'

This drawing supercedes and cancels W.D. 3750 drwg. dated 3/14/40 titled; New Slurry Pit Area D-B

| REVISION | DATE | DESCRIPTION | BY | DATE | APPROVED |
|----------|------|-------------|----|------|----------|
|          |      |             |    |      |          |

U. S. MARINE CORPS AIR STATION  
EL PASO, CALIFORNIA  
PUBLIC WORKS DEPARTMENT

**AREA D-B (48)**  
**NEW 4" DRAIN**  
**& SLURRY PIT**

DATE: 3/12/49 SCALE: AS SHOWN  
DRAWING NUMBER: W.D. 3750

Aerial Photograph Anomalies  
Marine Corps Air Station, El Toro, California  
Northwest Division, Naval Facilities Engineering Command  
BRAC Operations Office — April 5, 1999

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## **Technical Memorandum**

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**TABLE 1. Anomaly Areas Recommended for Additional Evaluation or Sampling**

| ANOMALY AREA NUMBER <sup>a</sup> | ANOMALY NUMBERS <sup>b</sup><br>(date of associated photograph)   | LOCATION AND DESCRIPTION  | STUDY AREA <sup>c</sup> | SITE VISIT PERFORMED <sup>d</sup> | DoN RECOMMENDATION <sup>e</sup>   | ESTIMATED DIMENSIONS <sup>f</sup>                  | COMMENTS <sup>g</sup>  |
|----------------------------------|---|---|-------------------------|-----------------------------------|---|--|--|
| 1                                | SAIC 144 (1964), SAIC 169 (1967), EPA 7 (1952, 1965), EPA 36 (1980)   | A circular scar on the unpaved ground surface southwest of former Tank Farm 1.  | A                       | Yes                               | Management of the site as a petroleum corrective action program site with soil sampling for petroleum hydrocarbons. | 125 foot diameter turning circle (unpaved roadway) | This unpaved area may have been used to dispose of excess oil. No stains were observed during the site visit.  |
| 2                                | SAIC 173 (1967), EPA 21 (1970)  | The former location of four fuel bladder revetments southeast of Tank Farm 3.   | A                       | Yes                               | Management of the site as a petroleum corrective action program site with soil sampling for petroleum hydrocarbons. | 130 by 40 feet                                     | Fuel bladder revetments (FBR) were located in an area adjacent to and east of the vehicle storage yard. The area is presently paved with asphalt. The FBR were present at this location from at least 1962 through 1970. No stained areas were observed during the site visit. |
| 3                                | SAIC 20 (1946), SAIC 64 (1952), SAIC 106 (1960), SAIC 156 (1967), SAIC 443 (1981), SAIC 536 (1988), SAIC 564 (1992) | The area between Pusan Way and Agua Chinon Wash, East of Bldg. 722.   | B                       | Yes                               | Management of the site as an RFA site with trenching and visual inspections.  | 1000 by 300 feet                                   | Refuse was noted in anomaly SAIC 156. Construction debris is visible at scattered locations throughout the site. Station personnel have indicated this was a construction debris disposal area.  |
| 4                                | SAIC 39 (1946)  | The area west of Bldg. 306.   | D                       | Yes                               | Management of the site as a petroleum corrective action program site with soil sampling for petroleum hydrocarbons. | 60 by 60 feet                                      | This area is listed as "slurry beds" on historical plans up to 1951. The slurry beds were used as part of the potable water treatment system.  |
| 5                                | SAIC 161 (1967), SAIC 215 (1971), SAIC 287 (1974), SAIC 314 (1975), SAIC 542 (1988)                                 | The area located approximately 1600 feet west of the intersection of Perimeter Road and Magazine Road (LOX FAX facility is inside the area) and adjacent to MSC D1-the Desert Storm Staging Area. | E                       | Yes                               | Management of the site as a petroleum corrective action program site with soil sampling for petroleum hydrocarbons. | 450 by 250 feet.                                   | Disturbed ground, grading, and trenching were observed in this area. The EBS indicates that hazardous materials from Desert Storm activities were staged in this area. This area was reportedly used as a bivouac area for Boy Scout Jamborees.                                |

**Notes:**

<sup>a</sup> = This column lists areas recommended for potential sampling or additional evaluation. Each area consists of one or more anomalies.

<sup>b</sup> = This column identifies the anomalies contained in the area

<sup>c</sup> = Refers to the study area (A through F) of MCAS El Toro that the anomaly is located. The designations are derived from the USEPA Site Analysis Report. These study areas are illustrated on Figure 1.

<sup>d</sup> = This column indicates whether a site reconnaissance has been performed for this the area

<sup>e</sup> = This column identifies the Navy recommendation for the area.

<sup>f</sup> = Dimensions include areas containing all anomalies obtained from the aerial photographs in the U.S. EPA and SAIC reports. The dimensions are rough estimates due to the small scale of photographs and absence of photographs in some cases.

<sup>g</sup> = Comments include information on anomalies obtained from U.S. EPA and SAIC reports as well as information obtained from historical documents

TABLE 2. Proposed List of Aerial Photograph Anomalies for BCP Table 3-2, Year 2000 Update

| Database Tracking | Anomaly Identification Number | Year of Photograph | Anomaly Area Number * | 1998 Reuse Parcel | Point of Reference  | Description/Explanation for Proposed Management Strategy **  | NFA |
|-------------------|-------------------------------|--------------------|-----------------------|-------------------|---------------------|--|-----|
| APHO 6            | SAIC 39                       | 1946               | Anomaly Area 4        | 29                | B 306               | <i>Two impoundments (IM) can be observed on the southwest side of Building 306, near S 11th Street and L Street. Historical station maps from the 1940's show a water treatment facility at Building 306 with adjacent slurry beds (impoundments). Further investigation is proposed.</i>  |     |
| APHO 7            | SAIC 46                       | 1946               |                       | 29                | B 1389              | There is wet soil (WS) or stains (ST) in the area now occupied by the southwest corner of Building 1389 and in the open storage (OS) area about 200 feet northwest of Building 1389. This comment may actually refer to the former Building 1589 in the vicinity of IRP Site 11 (and southwest of Building 369) which includes a small drainage ditch (Unit 2). No further action is proposed based upon the sampling that has been conducted at IRP Site 11. Additionally, the anomaly site is located within IRP Site 24 and soil gas surveying was conducted near the site and this data was evaluated for the Remedial Investigation of IRP Site 24.   | X   |
| APHO 8            | SAIC 52                       | 1946               |                       | 7                 | Runways 34-L & 34-R | In the area north of the railroad tracks, between Agua Chinon Wash and Borrego Canyon Wash, there are four open storage (OS) areas. All appear to contain refuse (R) or materials in storage. The westerly area appears to have been excavated (EX) and the spoil (FA) placed toward the southeast. The spoil area (FA) and the excavated (EX) area appear to be covered with refuse (R) or other materials. The southerly open storage (OS) area is an aircraft salvage area with several fuselage and wing sections visible. Smaller open storage (OS) areas occur near the four major sites. This area is located beneath Runways 34R and 34L and/or the approaches to the runways and the southwestern portion of the golf course. The anomaly site is adjacent to Perimeter Road, and no refuse, aircraft parts, or other materials are visible. It is likely that all surface debris was removed as the runway approaches were modified and as the golf course area expanded toward the runways. No further action is proposed due to the absence of additional evidence to support the observation that refuse may have been stored at this area. | X   |

TABLE 2. Proposed List of Aerial Photograph Anomalies for BCP Table 3-2, Year 2000 Update

| Database Tracking | Anomaly Identification Number | Year of Photograph | Anomaly Area Number * | 1998 Reuse Parcel | Point of Reference | Description/Explanation for Proposed Management Strategy **  | NFA |
|-------------------|-------------------------------|--------------------|-----------------------|-------------------|--------------------|--|-----|
| APHO 9            | SAIC 53                       | 1946               |                       | 23                | Agua Chinon Wash   | Liquid (LQ) can be seen flowing from a former (?) hangar near the northeast end of the aircraft parking apron on the northerly side of the present ACER site (Site 19). The liquid (LQ) discharges into a drainage ditch from a small building behind the former hangar. The anomaly site corresponds to the location of Agua Chinon Wash near Site 19. The drainages, including Agua Chinon Wash, have been investigated during the Remedial Investigation of Site 25 - the Major Drainages. No further action recommended based upon the sampling conducted at Site 25 and at Site 19, Units 1, 2, 3, and 4 in the vicinity of Agua Chinon Wash. | X   |
| APHO 10           | SAIC 79                       | 1955               |                       | 23                | B 286              | There is an open storage (OS) area on the westerly side of Building 286, near N 7th Street and West Marine Way. Historical property records do not indicate that hazardous wastes were managed at Building 286, and consequently, no further action is proposed.   | X   |
| APHO 11           | SAIC 81                       | 1955               |                       | 29                | B 307              | A trench (TR) and disturbed ground (DG) can be seen about 230 feet northwesterly of Building 307, near S 14th Street and K Street. The purpose is unknown. The location of the disturbed area corresponds approximately with the location of one of the slurry beds associated with the former water treatment facility. The slurry beds, including SAIC 81, are proposed for further investigation in Anomaly Area 4 (SAIC 39).   |     |
| APHO 12           | SAIC 92                       | 1958               |                       | 8                 | DRMO Yard 2        | There is wet soil (WS) in the open field between East Marine Way and Z Street. This area is near or at Solid Waste Management Unit (SWMU) 46 which has been investigated under the Resource Conservation and Recovery Act Facility Assessment (RFA). No further action recommended.  | X   |
| APHO 13           | SAIC 102                      | 1960               |                       | 40                | B 415              | Possible drums (D) are located on the northeast side of Building 415, located easterly of the rodeo area. Historical records do not indicate that hazardous wastes were managed or stored at Building 415, most recently used for storage of materials by the Marine Air Group (MAG) -11, and consequently, no further action is recommended.  | X   |
| APHO 14           | SAIC 105                      | 1960               |                       | 40                | Horse Stables      | Stains (ST) or wet soil (WS) can be seen in the cleared areas on the northeast and southeast sides of the Rodeo Area complex. Historical records do not indicate that hazardous wastes were managed in this area. No further action recommended based upon the review of historical records.   | X   |

TABLE 2  
SAIC Aerial Photograph Anomaly List

|          |                        |      |   |   |   |   |     |     |         |     |   |
|----------|------------------------|------|---|---|---|---|-----|-----|---------|-----|---|
| SAIC 467 | LO                     | 1963 | B | Liquid is apparently flowing southwesterly into a parking area from buildings located about 200 feet southeast of Bldg 392.   | SAIC 17, SAIC 150, SAIC 196<br>SAIC 198, SAIC 338, SAIC 388<br>SAIC 422, EPA 61, EPA 66, EPA 68 | Motor Pool Area   | 2   | FI  | NFI (4) | NFI | This anomaly is part of a site indicated to be the "Motor Pool Area" in the USEPA report. Several SWMUs have been investigated in this area. Most of the anomalies in this area are stains or liquid. |
| SAIC 483 | ST, LO                 | 1964 | B | Stains or liquids are at three locations: near the northwest edge of the aircraft parking apron, the northeast portion of Tank Farm No. 4, and the parking area to the southeast.   | SAIC 12, SAIC 22, SAIC 148<br>SAIC 237, SAIC 332, SAIC 369<br>SAIC 459, EPA 73                  | Tank Farm 4   | 2   | FI  | NFI (4) | NFI | This anomaly has been addressed by excavations or soil investigations related to Tank Farm 4.   |
| SAIC 484 | ST                     | 1964 | B | Probable stains on the southerly side of Bldg 658.  |   | IRP Site 4  | N/A | FI  | FI (2)  | NFI | This anomaly only identified on this aerial photograph.   |
| SAIC 497 | B, DG                  | 1964 | B | New construction and associated disturbed ground in the triangular area southeast of Perimeter Road and Magazine Road.  |   | This anomaly is only Nonetted on one aerial photograph. | 1   | NFI | NFI     | NFI |   |
| SAIC 508 | LO                     | 1967 | B | Liquid is apparently flowing near the northeast side of Bldg 125.   |   | None  | 2   | FI  | NFI (3) | NFI |   |
| SAIC 518 | ST, WS                 | 1967 | B | Probable stains or wet soil are on the northeast side of Bldg. 415.   | SAIC 102  | SWMU 125  | 2   | NFI | NFI     | NFI |   |
| SAIC 519 | GR                     | 1967 | B | The Rodeo Area has expanded to the northwest following probable site grading.   |   | None  | 1   | NFI | NFI     | NFI |   |
| SAIC 527 | VT                     | 1968 | B | A vertical tank is near the northwest corner of Bldg 121.   |   | None  | 4   | FI  | NFI (4) | NFI |   |
| SAIC 536 | EXT, FA                | 1968 | B | The former extraction area at the mouth of Agus Chiron Wash has been filled.  | SAIC 20, SAIC 64, SAIC 106<br>SAIC 156, SAIC 443, SAIC 564                                      | None  | 1   | NFI | NFI     | FI  | Construction debris is visible at scattered locations throughout the site. Station personnel have indicated this area was a disposal area.  |
| SAIC 539 | DG, B, MMLT,<br>DG, TR | 1966 | B | The Rodeo Area has expanded to the northwest where disturbed soil, buildings, and light-toned mounded material can be seen. There is an area of disturbed ground along the southerly side of Irvine Blvd that may be a backfilled trench. |   | None  | 1   | FI  | NFI (4) | NFI |   |
| SAIC 557 | B, UO, VT              | 1992 | B | A new building and unidentified object (tank or circular horse training area) are at the Rodeo Area.  |   | None  | 4   | NFI | NFI     | NFI |   |
| SAIC 564 | GR                     | 1992 | B | Grading appears to be complete in the south-central area of MCAS.   | SAIC 20, SAIC 64, SAIC 106<br>SAIC 156, SAIC 443, SAIC 536                                      | None  | 1   | NFI | NFI     | FI  | Construction debris is visible at scattered locations throughout the site. Station personnel have indicated this area was a disposal area.  |
| SAIC 97  | UO, MMLT               | 1958 | C | No significant changes are noted at Site 1.   |   | IRP Site 1  | 6   | NFI | NFI     | NFI |   |
| SAIC 116 | ST, TR, LO             | 1960 | C | Several stains and a trench with with probable liquid at Site 1.  |   | IRP Site 1  | 2   | NFI | NFI     | NFI |   |
| SAIC 221 |                        | 1971 | C | No significant changes are noted at the EOD range.  |   | IRP Site 1  |     | NFI | NFI     | NFI |   |
| SAIC 254 | TR, HT                 | 1973 | C | Two possible trenches and a horizontal tank at Site 1.  |   | IRP Site 1  | 1   | NFI | NFI     | NFI |   |
| SAIC 571 |                        | 1974 | C | No significant changes at Site 1.   |   | IRP Site 1  |     | NFI | NFI     | NFI |   |
| SAIC 572 |                        | 1975 | C | No significant changes at Site 1.   |   | IRP Site 1  |     | NFI | NFI     | NFI |   |
| SAIC 373 |                        | 1977 | C | No significant changes are noted at Site 1.   |   | IRP Site 1  |     | NFI | NFI     | NFI |   |
| SAIC 444 | IM, LO                 | 1981 | C | A berm has been constructed in the northern portion of Site 1. Pounded liquid is noted in photographs from some years.  |   | IRP Site 1  | 5   | NFI | NFI     | NFI |   |
| SAIC 472 | LO, IM                 | 1983 | C | A liquid filled impoundment (about 100 by 150 feet) is at the northern portion of Site 1. A liquid filled trench is in the center of Site 1.  |   | IRP Site 1  | 5   | NFI | NFI     | NFI |   |
| SAIC 513 |                        | 1987 | C | No significant changes are noted at Site 1.   |   | IRP Site 1  |     | NFI | NFI     | NFI |   |
| SAIC 34  | VT                     | 1946 | D | A probable vertical tank near S 11th Street and L Street.   |   | SWMU 45   | 4   | FI  | NFI (4) | NFI | Possibly Tank 155?  |
| SAIC 35  | UO, VT, M              | 1946 | D | Undertified object, possibly a vertical tank or mound on the north side of perimeter road.  | No  | None  | 4   | FI  | NFI (4) | NFI |   |
| SAIC 37  | LO                     | 1946 | D | Liquid flowing southwesterly from the southwest side of Bldg 132.   | No  | None  | 2   | FI  | NFI (4) | NFI | Location is questionable.   |
| SAIC 39  | IM                     | 1946 | D | Two impoundments on the southwest side of Bldg 306.   |   | None  | 5   | FI  | FI      | FI  | Listed as "Slurry Beds" on station plans from 1940s. This anomaly was recommended for further investigation in Table 5 of this Report.  |
| SAIC 40  | VT                     | 1946 | D | Two vertical tanks on the northeast side of Bldg 306.   |   | None  | 4   | FI  | NFI (4) | NFI |   |
| SAIC 41  | OS, D                  | 1946 | D | An open storage area, possibly with drums on the westerly side of Building 320.   | SAIC 181<br>SAIC 410  | IRP Site 21   | N/A | FI  | NFI (3) | NFI |   |
| SAIC 42  | ST                     | 1946 | D | Soil stains beneath the present aircraft apron about 500 feet southeast of Tank 174.  |   | IRP Site 10   | N/A | FI  | FI (2)  | NFI | This anomaly is contained within IRP Site 10.   |
| SAIC 43  | OS, D                  | 1946 | D | Open storage areas with possible drums beneath the present aircraft parking apron about 700 to 1000 feet southeast of Tank 174.   |   | IRP Site 10   | N/A | FI  | FI (2)  | NFI | This anomaly is contained within IRP Site 10.   |
| SAIC 44  | ST, OS                 | 1946 | D | Soil stains in an open storage area now occupied by Bldgs 386 and 1389.   |   | IRP Site 10   | N/A | FI  | FI (2)  | NFI | A portion of this anomaly is contained within IRP Site 10.  |
| SAIC 45  | WS, ST, OS             | 1946 | D | Wet soil or stains in an open storage area about 500 feet northwest of Bldg 322.  |   | None  | 2   | FI  | NFI (4) | NFI |   |

TABLE 2  
SAIC Aerial Photograph Anomaly List

|          |            |      |   |  |                                  |  |     |     |         |     |  |
|----------|------------|------|---|--|----------------------------------|--|-----|-----|---------|-----|--|
| SAIC 46  | WS, ST, OS | 1946 | D | Wet soil or stains in the area now occupied by the southwest corner of Bldg 1369, and in the open storage area about 200 feet northwest of Bldg 1369.        |                                  | None                                       | 2   | FI  | FI      | NFI | This anomaly only identified on this aerial photograph.  |
| SAIC 47  | OS, D      | 1946 | D | An open storage area with possible drums near the  |                                  | None                                       | 3   | FI  | NFI (4) | NFI |  |
| SAIC 48  | ST, LO     | 1946 | D | Stains caused by liquid flowing easterly from the aircraft parking apron about 200 feet east of Bldg. 296.   |                                  | Adjacent to IRP Site 7                     | N/A | FI  | FI (2)  | NFI | This anomaly is contained within IRP Site 7.   |
| SAIC 49  | D, OS      | 1946 | D | There may be drums in an open storage area about 200 feet east of Bldg 296.  |                                  | Adjacent to IRP Site 7                     | N/A | FI  | FI (2)  | NFI |  |
| SAIC 50  | OS         | 1946 | D | An open storage area at the present location of Bldg. 360  |                                  | None                                       | 3   | FI  | FI (2)  | NFI | Building 360 was constructed prior to December 1952.   |
| SAIC 51  | MMDT       | 1946 | D | Dark-toned mounded material adjacent to the drainage ditch between Perimeter road and the Southeast corner of the aircraft parking apron.                    |                                  | None                                       | 6   | NFI | NFI     | NFI | Mounds appear to be soil related to maintenance of the ditch.  |
| SAIC 52  | OS         | 1946 | D | Four open storage areas north of the railroad tracks, between Agua Chino Wash and Borrego Canyon Wash.   |                                  | None                                       | 3   | FI  | FI      | NFI | This area has now been covered by the end of Runways 34-L and 34-R.  |
| SAIC 68  | TR         | 1952 | D | Shallow or backfilled trench   |                                  | None                                       | 1   | FI  | NFI (4) | NFI |  |
| SAIC 69  | MMLT       | 1952 | D | Light-toned mounded material can be seen on the westerly side of Bee Canyon Wash, South of Perimeter Road  | SAIC 246<br>SAIC 277<br>SAIC 485 | Adjacent SWMUs                             | 6   | NFI | NFI     | NFI | Disturbed ground, trenches, and/or mounded material was observed on aerial photographs from four different years.            |
| SAIC 70  | TR, LO     | 1952 | D | A trench with possible liquid at its northern end  |                                  | None                                       | 1   | NFI | NFI     | NFI |  |
| SAIC 81  | TR, DG     | 1955 | D | A trench and disturbed ground about 230 feet northwesterly of Bldg 307.  | EPA 125                          | None                                       | 1   | FI  | FI      | NFI | This anomaly is only identified on this aerial photograph. No liquids, refuse or other materials were noted in the trenches. |
| SAIC 82  | OS         | 1955 | D | Open storage areas in much of the north-central portion of Area D from the USEPA Report  |                                  | IRP Sites 10, 22, 24                       | N/A | NFI | NFI     | NFI |  |
| SAIC 83  | ST         | 1955 | D | Probable stains adjacent to the northwest corner of the aircraft parking apron   |                                  | IRP Site 22                                | N/A | NFI | NFI     | NFI |  |
| SAIC 84  | VT         | 1955 | D | Two vertical tanks can north of Bldg 355   |                                  | None                                       | 4   | FI  | NFI (4) | NFI |  |
| SAIC 85  | VT         | 1955 | D | Two vertical tanks about 200 feet south of Bldg 368  | EPA 131 (7)                      | IRP Site 12                                | N/A | FI  | FI (2)  | NFI | This anomaly is contained within IRP Site 12   |
| SAIC 86  | OS         | 1955 | D | Open storage area parallel to S. Manne Way, extends from SAIC 85 to Bldg. 317  | SAIC 488                         | None                                       | 3   | NFI | NFI     | NFI |  |
| SAIC 90  | LO, WS     | 1958 | D | Possible liquid or wet soil at the northerly end of the sludge drying beds.  |                                  | IRP Site 12                                | N/A | NFI | FI (2)  | NFI | This anomaly is contained within IRP Site 12   |
| SAIC 129 | IM, VT     | 1961 | D | An impoundment and six vertical tanks near S. Manne Way, S. 15th Street, and Plant Road.   | EPA 129                          | IRP Site 12                                | N/A | FI  | FI (2)  | NFI | This anomaly is contained within IRP Site 12   |
| SAIC 130 | ST, DG     | 1961 | D | Stains and disturbed ground near the near the northerly and easterly sides of Bldg. 1585 about 200 feet north of the Bldg 322.                               |                                  | SWMUs 243, 291                             | 2   | FI  | NFI (4) | NFI |  |
| SAIC 131 | LO         | 1961 | D | Liquid appears to be flowing from a hangar (Bldg 296) at the southeast corner of the aircraft parking apron and discharging into the ditch each of the apron |                                  | IRP Site 24                                | N/A | FI  | FI (2)  | NFI | This anomaly is partially contained within IRP Site 7.   |
| SAIC 132 | ST         | 1961 | D | Stains in the proximity of Bldg 1749.  | SAIC 137<br>SAIC 461             | IRP Site 8                                 | N/A | FI  | FI (2)  | NFI | This anomaly is contained within IRP Site 8.   |
| SAIC 134 | MMLT       | 1964 | D | Light-toned mounded material on the north side of the railroad tracks near the approach end of Runway 34R.   |                                  | None                                       | 6   | NFI | NFI     | NFI | Materials appear to be soil and vegetation from earthmoving activities   |
| SAIC 135 | TR, DG     | 1964 | D | A trench and disturbed ground about 1000 feet northeast of SAIC 134  |                                  | None                                       | 1   | FI  | NFI (4) | NFI | Could be backfilled trench or disposal site.   |
| SAIC 137 | ST         | 1964 | D | Stains are observed in the cleared or graded area easterly of Bldg. 360 and Site 8   |                                  | IRP Sites 8 & 24,<br>SWMU 232              | N/A | FI  | FI (2)  | NFI | Northern portion of anomaly is contained within IRP Site 8.  |
| SAIC 138 | OS, ST, D  | 1964 | D | An open storage area, probable stains and drums about 500 feet Southeastern of the southeast corner of the aircraft parking apron.                           | SAIC 247<br>SAIC 305             | None                                       | 3   | FI  | FI (2)  | NFI | Western portion of anomaly is contained within IRP Site 8.   |
| SAIC 139 | ST         | 1964 | D | Stains in the vicinity of Bldg. 325  |                                  | None                                       | 2   | FI  | FI      | NFI | This anomaly only noted on this aerial photograph. Within in area where several soil gas samples have been taken.            |
| SAIC 140 | ST         | 1964 | D | Stains on the westerly side of Bldg. 324   |                                  | None                                       | 2   | FI  | FI      | NFI | This anomaly only noted on this aerial photograph. Within in area where several soil gas samples have been taken.            |
| SAIC 141 | ST, LO     | 1964 | D | Stains in the general area of Bldgs. 309, 311, and 312, probable liquid flow from toward the northeast from near Bldg 312                                    | EPA 163                          | IRP Site 24 boning at West Edge of anomaly | 2   | FI  | FI      | NFI | Within in area where several soil gas samples have been taken as part of Site 24 investigation.                              |
| SAIC 142 | ST         | 1964 | D | Stains in the open area within and south of Site 10  |                                  | IRP Site 10                                | N/A | FI  | FI (2)  | NFI | All of the eastern portion and half of the western portion of anomaly is contained within IRP Site 10.                       |
| SAIC 167 | ST         | 1967 | D | Extensive staining at Sites 9, 10, and 22  |                                  | IRP Site 9, 10, 22                         | N/A | NFI | NFI     | NFI |  |
| SAIC 168 | OS, D      | 1967 | D | An open storage area with probable drums adjacent to the southwest corner of the aircraft parking apron near Bldgs 388 and 655                               |                                  | IRP Site 10                                | N/A | FI  | FI (2)  | NFI | Anomaly is contained within IRP Site 10  |
| SAIC 176 | EXT        | 1968 | D | A 400 by 70 feet extraction between Runways 34L and 34R about 500 feet south of Runway 25R   |                                  | None                                       | 1   | FI  | FI      | NFI | This anomaly is likely related to some type of runway construction.  |
| SAIC 177 | EX         | 1968 | D | An excavation near threshold of Runway of 34R containing unidentified equipment or materials   |                                  | None                                       | 1   | FI  | NFI (4) | NFI |  |

# Base Realignment and Closure Cleanup Plan (BCP)



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

March 1999

soil contaminated with PCBs located in a large pit with a 10-foot-deep layer of clean soil. This action met the U.S. EPA remedy requirements for PCB-contaminated soil.

- Soil vapor extraction (SVE) pilot tests, initiated at IRP Site 24 in 1996, were continued at various vapor extraction wells during 1998. Over 870 pounds of VOCs were removed during the SVE pilot testing.
- Groundwater remediation pilot tests, initiated at IRP Site 24 in 1997, were continued during 1998. The purpose of the testing program was to compare and evaluate the effectiveness of groundwater extraction, SVE-enhanced groundwater extraction and groundwater injection during remediation of VOCs in groundwater. The testing program provided additional data to assist in the design of a remedial alternative capable of (1) minimizing the migration of VOCs within the shallow groundwater unit and (2) minimizing the migration of VOCs from the shallow groundwater unit to the principle aquifer.

Table 3-3 will be revised in updates of this BCP as early actions for IRP sites are implemented and/or completed.

### 3.1.2 Installation-Wide Source Discovery and Assessment Status

An EBS for MCAS El Toro was completed on 01 April 1995. One of the main objectives of the EBS was to evaluate the ECP at the Station to facilitate property disposal. Information from this study related to source discovery and assessment are detailed below.

#### 3.1.2.1 Aerial Photograph Features/Anomalies

In 1991 and 1993, surveys of historical aerial photographs of MCAS El Toro were performed by the U.S. EPA and Science Applications International Corporation (SAIC) (SAIC 1993), respectively. The survey included photographs dating back to 1946. The photographs were reviewed for features/anomalies of potential environmental concern. Over 500 features/anomalies were identified by SAIC which took into account hundreds of anomalies initially identified by the U.S. EPA report. The features/anomalies that related to IRP sites were evaluated and incorporated, as appropriate, in the Phase II RI Work Plan. As part of the EBS, the remaining aerial photograph features/anomalies were further evaluated. The final EBS Report identified a total of 53 features/anomalies requiring more detailed assessment. These 53 features/anomalies are described in Table 3-2 and shown in Figure 3-1. DoN initiated a more detailed assessment of these features/anomalies in 1997. Physical sampling in some of the areas of consolidated anomalies is anticipated in 1999.

**Table 3-2**  
**Aerial Photograph Features/Anomalies**  
 (Sheet 1 of 7)

| Database Tracking | SAIC Anomaly ID No. | LRA Reuse Parcel | Point of Reference  | Year | SAIC Observations <sup>1</sup> | SAIC Comments <sup>2</sup> | Comments   | ECP Area Type |
|-------------------|---------------------|------------------|---------------------|------|--------------------------------|----------------------------|--|---------------|
| APHO 1            | 7                   | 32               | Tank Farm 3         | 1946 | ST                             | C                          | The stains appear adjacent to the southeastern side of Tank Farm 3 where a former fuel bladder may have been located. Also see anomalies 113, 173, 190, 227, 235, and 272.                                       | 7             |
| APHO 2            | 14                  | 42               | B 136               | 1946 | OS, D                          | C                          | Miscellaneous equipment is stored along the southeast side of B 135. The ground surface is paved with asphalt, and surface runoff flows in a southwest direction.  | 7             |
| APHO 3            | 21                  | 43               | B 120               | 1946 | OS, D                          | C                          | Miscellaneous equipment is stored along the southeast side of B 120. The ground surface is paved with asphalt, and surface runoff flows in a southwest direction.  | 7             |
| APHO 4            | 22                  | 23               | Tank Farm 4         | 1946 | ST                             | C                          | Miscellaneous equipment is stored along all sides of this building. Portions of the ground surface along the east and west sides of the building are unpaved. Surface runoff flows in a southwesterly direction. | 7             |
| APHO 5            | 25                  | 32               | B 50                | 1946 | OS                             | C                          | This area is commonly used for open storage. The ground surface is unpaved.  | 7             |
| APHO 6            | 39                  | 29               | B 306               | 1946 | IM                             | C                          | Unknown impoundments. Additional investigation recommended.  | 7             |
| APHO 7            | 46                  | 29               | B 1389              | 1946 | WS, ST, OS                     | C                          | The liquid is probably surface runoff.   | 7             |
| APHO 8            | 52                  | 7                | Golf Course Hole 12 | 1946 | OS, R, EX, FA                  | C                          | Portions of this storage area has been covered by the extension of runways 34-L and 34-R.  | 7             |
| APHO 9            | 53                  | 23               | Agua Chinon Wash    | 1946 | LQ                             | C                          | The liquid could be surface runoff flowing into Agua Chinon Wash.  | 7             |

**Table 3-2**  
**Aerial Photograph Features/Anomalies**  
**(Sheet 2 of 7)**

| Database Tracking | SAIC Anomaly ID No. | LRA Reuse Parcel | Point of Reference | Year | SAIC Observations <sup>1</sup> | SAIC Comments <sup>2</sup> | Comments  | ECP Area Type |
|-------------------|---------------------|------------------|--------------------|------|--------------------------------|----------------------------|---|---------------|
| APHO 10           | 79                  | 23               | B 286              | 1955 | OS                             | A                          | The open storage area may be associated with B 286.   | 7             |
| APHO 11           | 81                  | 29               | B 307              | 1955 | TR, DG                         | C                          | This feature is located adjacent to the NW side of the storage yard for the trade shops and NE of B 307. Activities associated with the disturbed ground are unknown.   | 7             |
| APHO 12           | 92                  | 8                | DRMO Yard 2        | 1958 | WS                             | C                          | Two areas of wet soil are identified in this anomaly. One is located near the SE corner of the DRMO storage yard #2 (SWMU 46) and the other is located SW of B 457. No analytical data has been collected for the general area SW of B 457. | 7             |
| APHO 13           | 102                 | 40               | B 415              | 1960 | D                              | C                          | SWMU 125 is located on the NE side of B 415. The storage area featured in the photograph is located in an unpaved area on the NW side of the building. Also see anomalies 289 and 431   | 7             |
| APHO 14           | 105                 | 40               | Horse Stables      | 1960 | ST, WS                         | C                          | This feature is located near the horse stables. No HW-generating activities are known to have occurred at the stable area.  | 7             |
| APHO 15           | 113                 | 32               | Tank Farm 3        | 1960 | ST                             | C                          | Several stains appear at various locations adjacent to the parking apron near Tank Farm 3. It is possible that the stains could be due to runoff from the apron.  | 7             |
| APHO 16           | 115                 | 32               | Tank Farm 3        | 1960 | WS, LQ                         | C                          | The wet soil appears in a storage yard located adjacent to the SW side of Tank Farm 3. The storage yard is used to store vehicles and miscellaneous equipment.  | 7             |
| APHO 17           | 139                 | 29               | B 357              | 1964 | ST                             | C                          | Currently, this area is unpaved. A hazardous materials storage locker is located approximately 20 feet north of the anomaly.  | 7             |

**Table 3-2**  
**Aerial Photograph Features/Anomalies**  
 (Sheet 7 of 7)

| Database Tracking | SAIC Anomaly ID No. | LRA Reuse Parcel | Point of Reference           | Year | SAIC Observations <sup>1</sup> | SAIC Comments <sup>2</sup> | Comments | ECP Area Type |
|-------------------|---------------------|------------------|------------------------------|------|--------------------------------|----------------------------|----------|---------------|
| APHO 53           | 502                 | 32               | Perimeter Rd. & Magazine Rd. | 1987 | ST                             | C                          |          | 7             |

## Notes: 1 The abbreviations in this column correspond to the following:

B - Building  
 D - Drums  
 DB - Debris  
 DG - Disturbed ground  
 DT - Dark-toned  
 EX - Excavation  
 EXT - Extraction

FA - Fill area  
 FBR - Fuel bladder revetment  
 HT - Horizontal tank  
 IM - Impoundment  
 LQ - Liquid  
 M - Material  
 MM - Mounded material  
 OS - Open storage  
 R - Refuse

Rd. - Road  
 St. - Street  
 ST - Stain  
 SW - Southwest  
 TR - Trench  
 UO - Unidentified object  
 VT - Vertical tank  
 WS - Wet soil

## 2 The letters in this column correspond to the following:

A - Verification of a feature identified in U.S. EPA, 1991, "Site Analysis, El Toro MCAS" and occurring within the Sampling and Analysis Plan (SAP) Amendment RI/FS site boundaries.  
 B - Features identified in SAIC assessment that occur within the SAP Amendment IRP site boundaries.  
 C - Sites outside of the SAP Amendment RI/FS site boundaries

## Abbreviations:

APHO - aerial photograph anomaly  
 DRMO - Defense Reutilization Marketing Office  
 EPA - Environmental Protection Agency  
 HW - hazardous waste  
 HWSA - hazardous waste storage area  
 NE - northeast  
 NFA - no further action

NW - northwest  
 RFA - Resource Conservation and Recovery Act (RCRA) Facility Assessment  
 RI - Remedial Investigation  
 SE - southeast  
 SW - southwest  
 SWMU - Solid Waste Management Unit

A120050 000195

## EXTRACTS

Final Report  
Aerial Photograph Assessment  
MCAS El Toro  
Contract No. N68711-91-D-4658  
Delivery Order 0002  
SAIC Project No. 01-0892-02-0817

Submitted to:

Naval Facilities Engineering Command  
Southwest Division  
1220 Pacific Highway, Room 18  
San Diego, CA 92132-5181

Submitted by:

Science Applications International Corporation  
Engineering Sciences Division  
10260 Campus Point Drive, MS F1  
San Diego, CA 92121

October 25, 1993

Aerial Photographic Interpretation  
 MCAS El Toro  
 Santa Ana, California  
 1988

Figure 24  
 Sheet 1 of 1

January 21, 1988  
 Photo Number 3697-161  
 Source:  
 U.S. Geological Survey

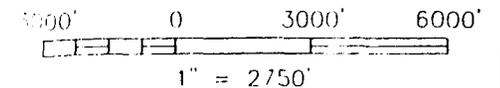
Prepared for:

Southwest Division  
 Naval Facilities Engineering Command  
 Contract N68711-92-D-4658



LEGEND:

| SYMBOL | DESCRIPTION      | SYMBOL | DESCRIPTION         |
|--------|------------------|--------|---------------------|
| B      | Building         | IM     | Impoundment         |
| D      | Drums            | LQ     | Liquid              |
| DB     | Debris           | LT     | Light-Toned         |
| DG     | Disturbed Ground | M      | Material            |
| DK     | Dark-Toned       | MM     | Mounded Material    |
| EX     | Excavation       | OS     | Open Storage        |
| EXT    | Extraction       | R      | Refuse              |
| FA     | Fill Area        | ST     | Stain               |
| FBR    | Fuel Bladder     | TR     | Trench              |
|        | Revetment        | UO     | Unidentified Object |
| GR     | Graded Area      | VT     | Vertical Tank       |
| GS     | Ground Scar      | WS     | Wet Soil            |
| HT     | Horizontal Tank  |        |                     |



## 2.23 1988 PHOTOGRAPHS

FIGURE: 24  
DATE: 21 JANUARY 1988  
PHOTOGRAPH: 3697-161  
NOTES: The photographs are of a small scale and provide only partial coverage of the site.

c 522. There is disturbed ground (DG) at a construction site on the southeast side of Perimeter Road, between N 4th Street and N 6th Street. No additional investigation is recommended at this time.

c 523. Liquid (LQ) is flowing southwesterly across a parking area from Building 15, near West Marine Way and N 3rd Street. The flow discharges into a ditch (WS). Additional investigation is recommended.

c 524. Three possible vertical tanks (VT) are noted: two (2) are along the southerly side of Building 5, near S 3rd Street and West Marine Way; the third is in an open field southerly of Building 517, near S 5th Street and H Street. The tanks should be verified and their contents determined.

c 525. There is probable wet soil (WS) westerly of Building 52 and southerly of Building 692, near El Toro Boulevard and H Street. No additional investigation is recommended at this time.

c 526. There is an open storage (OS) area with possible drums (D) west of the Battery Acid Disposal Area ( Site 14). Additional investigation is recommended. The current IR program field investigation of Site 14 should be expanded to include this area.

c 527. A vertical tank (VT) is located near the northwest corner of Building 121, near N 9th Street and P Street. Determination of the tank contents is recommended.

c 528. There is possible liquid (LQ) at the southerly corner of Building 369, near S 12th Street and N Street. Additional investigation is recommended.

c 529. Liquid (LQ) is flowing southeasterly into the parking area from the northwest corner of Building 307, near S 14th Street and K Street. The current IR program field investigation of the Petroleum Disposal Area (Site 10) or of the TAFDS area (Site 22) should be expanded to include this area.

c 530. There are three probable vertical tanks (VT): about 100 feet east of Building 442, near North Marine Way and N 3rd Street; about 200 feet west of Building 442; and at the north side of Building 1791. The tanks should be verified and their contents determined.

c 540. Several features can be observed at the industrial/agricultural area south of Lambert Reservoir. Dark-toned mounded material (MMDT) is located in the northern and southern portions of the site. There is probable liquid (LQ): at the southern edge of the northern mounded material; in the pond adjacent to the road in the southwestern portion of the site; and at the western corner of the southern mounded material. There are stains (ST) in the southwestern corner of the site. No additional investigation is recommended at this time unless contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.

c 541. No significant changes are noted at the South Coast Agriculture Field Station.

c 542. A light-colored pad, possibly concrete, was constructed west of Perimeter Road and Magazine Road. The purpose of the pad is unknown, but the area was probably graded (GR). No additional investigation is recommended at this time.

~~c 543. There has been industrial/commercial development (buildings (B) and grading (GR)) southwest of Building 360, between the railroad tracks and Interstate Highway 5. No additional investigation is recommended at this time, unless contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.~~

a 544. A pad, probably of concrete and asphalt was constructed immediately south of Crash Crew Pit No. 2 (Site 16). The site was probably graded (GR). No additional investigation is recommended. The current IR program field investigation of the Site 16 area appears to be adequate, relative to the features noted here.

c 545. The impoundment (IM), probably for irrigation water or flood control, on the northerly side of Irvine Boulevard, near the departure end of Runway 34R, is dry. No additional investigation is recommended at this time.

c 546. No significant changes are noted at the Rifle Range, or in its immediate vicinity.

c 547. There has been continued commercial and industrial development (buildings (B) and grading (GR)) along the southeastern border of the activity. No additional investigation is recommended at this time, unless contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.

Aerial Photographic Interpretation  
 MCAS El Toro  
 Santa Ana, California  
 1967

Figure 9

Sheet 1 of 1

June 27, 1967

Photo Number GS-VBTA-1-34

Source:

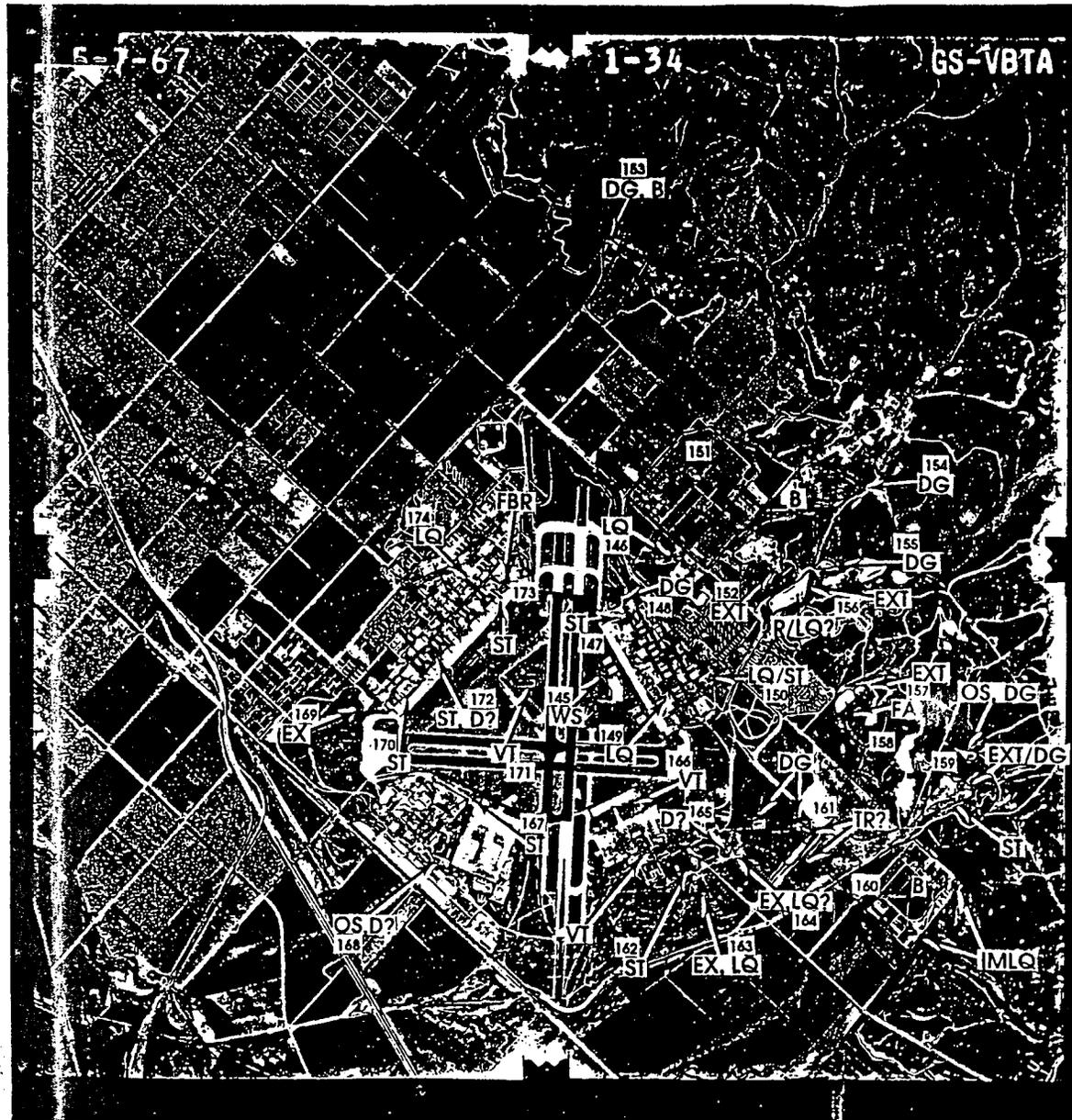
U.S. Geological Survey

Prepared for:

Southwest Division

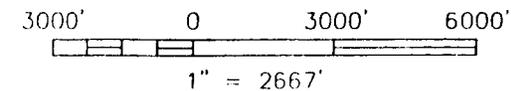
Naval Facilities Engineering Command

Contract N68711-92-D-4658



LEGEND:

| SYMBOL | DESCRIPTION      | SYMBOL | DESCRIPTION         |
|--------|------------------|--------|---------------------|
| B      | Building         | IM     | Impoundment         |
| D      | Drums            | LQ     | Liquid              |
| DB     | Debris           | LT     | Light-Toned         |
| DG     | Disturbed Ground | M      | Material            |
| DK     | Dark-Toned       | MM     | Mounded Material    |
| EX     | Excavation       | OS     | Open Storage        |
| EXT    | Extraction       | R      | Refuse              |
| FA     | Fill Area        | ST     | Stain               |
| FBR    | Fuel Bladder     | TR     | Trench              |
|        | Revetment        | UO     | Unidentified Object |
| GR     | Graded Area      | VT     | Vertical Tank       |
| GS     | Ground Scar      | WS     | Wet Soil            |
| HT     | Horizontal Tank  |        |                     |



## 2.8 1967 PHOTOGRAPHS

FIGURE: 9  
DATE: 27 JUNE 1967  
PHOTOGRAPH: GS-VBTA-1-34  
NOTE: The scale of this photograph is poor, rendering recognition and identification of small features difficult.

- c 145. Wet soil (WS) can be seen on the northerly side of Building 1793, and wet soil (WS) with probable liquid (LQ) occurs near the edge of the aircraft parking apron near the Base Operations facilities. Additional investigation is recommended.
- c 146. Liquid (LQ) is flowing easterly from the northerly side of Building 1798 in the Rodeo Area. Additional investigation is not recommended at this time.
- c 147. Apparent soil stains (ST) form three parallel lines on the westerly side of Building 139, near N 9th Street and M Street. Additional investigation is recommended.
- c 148. There is an area of disturbed ground (DG), with four, dark-toned, rectangular features, in the southerly portion of Tank Farm No. 4. Additional investigation is recommended.
- c 149. There appears to be liquid (LQ) flowing northerly from Building 114, near N 8th Street and S Street. Additional investigation is recommended.
- c 150. There are soil stains (ST) and probable liquid (LQ) flowing southerly from the former building located about 550 feet south of Building 392 (Motor Pool). Additional investigation is recommended.
- c 151. No significant changes are noted at the South Coast Agriculture Field Station.
- c 152. There appears to be continuing development for an unknown purpose in the former quarry (EXT) south of Lambert Reservoir. Additional investigation is recommended if contamination is identified near the site, or downgradient of the site, in areas of interest to the IR program.
- c 153. No significant changes are noted at the Rifle Range at the northern tip of the activity. However, there are disturbed ground (DG) and buildings (B) adjacent to the northwest corner of the range. This appears to be an agricultural area, and as such, fuel, solvents, oil, pesticides, fertilizers, and other potential contaminants may have been used or stored at the site. Additional investigation may be advised if contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.

c 154. There are buildings (B), cultivation, and disturbed ground (DG) in the industrial or agricultural complex south of Lambert Reservoir. Fuel, solvents, oil, pesticides, fertilizers, and other potential contaminants may have been used or stored at the site. Additional investigation may be advised if contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.

c 155. Disturbed ground (DG), probably due to vegetation clearing, is noted northwesterly of the activity's residential area. The purpose is unknown and no additional investigation is recommended at this time.

c 156.) Extraction (EXT) can be observed near the mouth of Agua Chinon Wash. There appears to be dark-toned material, possibly refuse (R) or liquid (LQ), in the eastern portion of the excavation. Additional investigations to determine if potential contaminants were placed in the quarry is recommended if contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.

c 157. Areas of extraction (EXT) and filling (FA) are noted at Fuel Road and Quarry Road. If a fuel tank farm exists at this location, an investigation of tank and ancillary equipment integrity is recommended.

c 158. No activity is noted at the Communication Station Landfill (Site 17).

c 159. At the Magazine Road Landfill (Site 2) there is evidence of extraction (EXT), disturbed ground (DG) and stains (ST). In addition, a stain (ST) "path" in the form of a loop appears to have resulted from liquid discharge from a moving vehicle. There is an open storage (OS) area surrounded by disturbed ground (DG) north of the landfill. Quarrying (EXT) of the ridge to the west continues. No additional investigation is recommended at this time; the present IR program field investigation of Site 2 appears to be adequate, relative to the features noted here.

c 160. The County Industrial Farm and sewage disposal area contains two (2) liquid-filled (LQ) impoundment areas (IM) and several buildings (B). Fuel, oil, solvents, pesticides, fertilizers, and other potential contaminants may have been used or stored at the site. Additional investigation is recommended if contamination is detected at the site or downgradient of the site, in areas of interest to the IR program.

→ c 161 Disturbed ground (DG) and probable backfilled trenches (TR) are noted in the western corner of Perimeter Road and Magazine Road, and about 1400 feet westerly of the intersection. Additional investigation of the purpose of these sites is recommended. The northeasterly-oriented, backfilled trench (TR) adjacent to Perimeter Road is the Perimeter Road Landfill (Site 5). No additional investigation of Site 5 is recommended at this time. The present IR program field investigation Site 5 appears to be adequate, relative to the features noted here.

Aerial Photographic Interpretation  
 MCAS El Toro  
 Santa Ana, California

1974

Figure 13

Sheet 1 of 1

December 9, 1974

Photo Number TG-7400-10-16

Source: Map and Imagery Library,  
 University of California, Santa Barbara

Prepared for:

Southwest Division

Naval Facilities Engineering Command

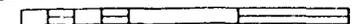
Contract N68711-92-D-4658

LEGEND:

| SYMBOL | DESCRIPTION      | SYMBOL | DESCRIPTION         |
|--------|------------------|--------|---------------------|
| B      | Building         | IM     | Impoundment         |
| D      | Drums            | LQ     | Liquid              |
| DB     | Debris           | LT     | Light-Toned         |
| DG     | Disturbed Ground | M      | Material            |
| DK     | Dark-Toned       | MM     | Mounded Material    |
| EX     | Excavation       | OS     | Open Storage        |
| EXT    | Extraction       | R      | Refuse              |
| FA     | Fill Area        | ST     | Stain               |
| FBR    | Fuel Bladder     | TR     | Trench              |
|        | Revetment        | UO     | Unidentified Object |
| GR     | Graded Area      | VT     | Vertical Tank       |
| GS     | Ground Scar      | WS     | Wet Soil            |
| HT     | Horizontal Tank  |        |                     |



2000' 0 2000' 4000'



1" = 2275'

**SAIC** Science Applications  
 International Corporation  
 An Employee-Owned Company



## 2.12 1974 PHOTOGRAPHS

FIGURE: 13  
DATE: 9 DECEMBER 1974  
PHOTOGRAPH: TG-7400-10-16  
NOTE: The photographs do not provide complete stereographic coverage.

- c 270. Probable liquid (LQ) is noted on the southwest side of Building 279, near N 7th Street and H Street. Additional investigation is recommended.
- c 271. There are probable drums (D) on the southwest side of Building 287, near N 7th Street and J Street. Additional investigation is recommended.
- c 272. Stains (ST) or wet soil (WS) can be seen on the southwest side of Building 624, near N 6th Street and J Street. The pattern suggests probable liquid flow from the south corner of the building. Additional investigation is recommended.
- c 273. There is disturbed ground (DG) on the northwest sides of Buildings 25, 27 and 29, near West Marine Way and S 6th Street. Investigation of the site's history as a possible disposal area is recommended. Expansion of the Suspended Fuel Tank (Site 15) IR program field investigation to include this general area may be advisable.
- c 274. There are stains (ST) on the northwest side of Building 31, near West Marine Way and S 8th Street. Additional investigation is recommended. Expansion of the Suspended Fuel Tank (Site 15) IR program field investigation to include the entire area is recommended.
- c 275. There are possible stains (ST) southwest of the Battery Disposal Area (Site 14), adjacent to the parking area. The possible stains may be the result of healthier vegetation due to locally increased runoff. Additional investigation not recommended at this time.
- c 276. There is an impoundment (IM) with possible liquid (LQ) at Crash Crew Pit No. 2 (Site 16), stains (ST) about 220 feet south of Site 16, and vertical tank (VT) about 450 feet southeast of Site 16. Determination of the tank's contents is recommended. The origin of the stain (ST) is unknown. The current IR program field investigation of Site 16 appears to be adequate, relative to the features noted here, and additional investigation of the site is not recommended at this time. However, investigation of the other areas noted here is advisable.
- c 277. Light- and dark-toned mounded material (MMLT and MMDT) are located about 200 feet southwest of S 15th Street and Plant Road. The features appear to be stockpiling of soil (DG) on the northwesterly side of Bee Canyon Wash. There is a possible drum (D) in the open storage (OS) area on the northerly side of S 15th Street

contaminants would be used and probably stored at the facility. No additional investigation is recommended unless contamination is detected at the site, or downgradient of the site, in areas of interest to the IR program.

→ c 287. There is an excavation (EX) about 1600 feet west of the Perimeter Road and Magazine Road intersection. The purpose of the excavation is unknown, and investigation of the site history as a possible disposal area is recommended.

c 288. Disturbed ground (DG), mounded material (MM) and probable trench (TR) can be seen about 700 feet southeast of the Perimeter Road and Quarry Road intersection. The purpose of the features is unknown, and investigation of site history as a possible disposal area is recommended.

c 289. There are wet soil (WS) or a stain (ST), and possible liquid (LQ) flow to the southwest from the open storage area on the northeast side of Building 415, adjacent to the Rodeo Area. Drums (D) may also be present. Additional investigation is recommended.

c 290. No significant changes are noted at the South Coast Agriculture Field Station.

c 291. No significant changes are noted at this apparent industrial or agricultural site.

a 292. At the Magazine Road Landfill, the trenches (TR) remain open and there are unidentified objects (UO) probably containers, but there are no significant changes.

c 293. There is wet soil (WS) and probable liquid (LQ) in the open area north of Trabuco Road, about 700 feet northwest of Gate No. 1. The features probably due to irrigation. Additional investigation is not recommended at this time.

a 571. No significant changes are noted at the EOD Range. The site is not indicated on the photograph.

Aerial Photographic Interpretation  
 MCAS El Toro  
 Santa Ana, California  
 1971

Figure 11

Sheet 1 of 1

May 19, 1971

Photo Number AXK-1MM-63

Source:

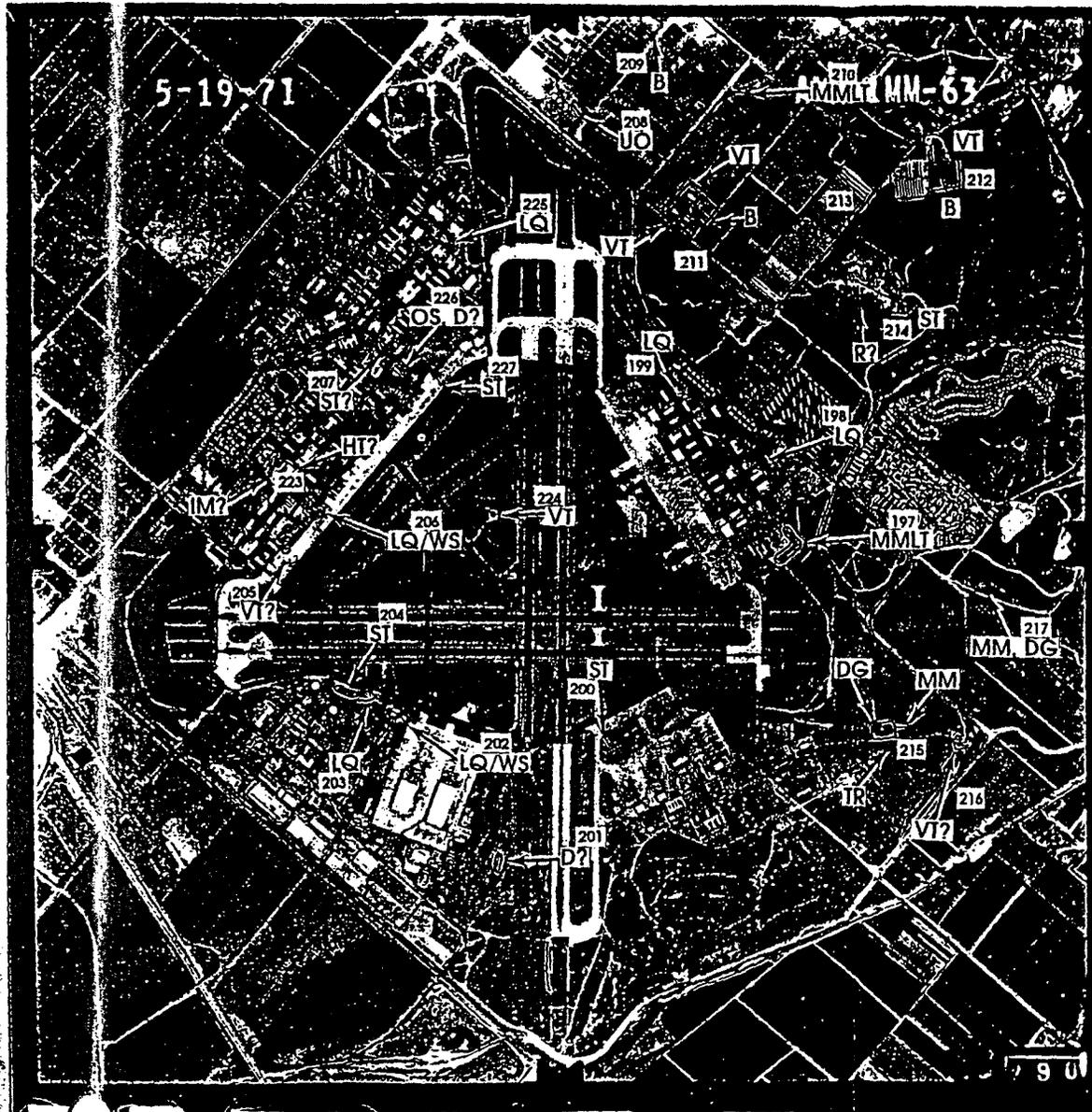
U.S. Department of Agriculture

Prepared for:

Southwest Division

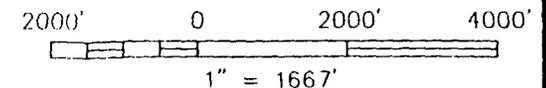
Naval Facilities Engineering Command

Contract N68711-92-D-4658



LEGEND:

| SYMBOL | DESCRIPTION      | SYMBOL | DESCRIPTION         |
|--------|------------------|--------|---------------------|
| B      | Building         | IM     | Impoundment         |
| D      | Drums            | LQ     | Liquid              |
| DB     | Debris           | LT     | Light-Toned         |
| DG     | Disturbed Ground | M      | Material            |
| DK     | Dark-Toned       | MM     | Mounded Material    |
| EX     | Excavation       | OS     | Open Storage        |
| EXT    | Extraction       | R      | Refuse              |
| FA     | Fill Area        | ST     | Stain               |
| FBR    | Fuel Bladder     | TR     | Trench              |
|        | Revetment        | UO     | Unidentified Object |
| GR     | Graded Area      | VT     | Vertical Tank       |
| GS     | Ground Scar      | WS     | Wet Soil            |
| HT     | Horizontal Tank  |        |                     |



## 2.10 1971 PHOTOGRAPHS

FIGURE: 11  
DATE: 19 MAY 1971  
PHOTOGRAPH: AXK-1MM-63

c 197. There are light-toned mounded materials (MMLT) on the northeast and southeast sides of Tank Farm No. 5. The mounds appear to be stockpiled soil. Expansion of the Original Landfill (Site 3) investigation to include this area is recommended.

a 198. Liquid (LQ) is flowing south to southwest from the Motor Pool (Building 392). This feature has been noted previously. Additional investigation is recommended.

a 199. Liquid (LQ) is flowing easterly from Building 138, near N 9th Street and N Street. Additional investigation is recommended.

b 200. There is a stain (ST) on north side of the fuel bladders at ACER (Site 19). No additional investigation is recommended at this time. The current IR program field investigation of Site 19 appears to be adequate, relative to the features noted here.

c 201. Probable drums (D) can be seen in the open storage (OS) area about 800 feet southeast of the southeast corner of the aircraft parking apron. Expansion of the Drop Tank Drainage Area No. 2 (Site 7) investigation to include this site is recommended.

b 202. Wet soil (WS) and probable liquid (LQ) can be seen at the east end of the Crash Crew complex (Buildings 435 and 1649). The features are also noted in other years. Additional investigation is not recommended at this time. The current IR program field investigation of Site 9 appears to be adequate, relative to the features noted here.

c 203. Liquid (LQ) is flowing northeast from near Crash Crew Pit No. 1 (Site 9), toward the taxiway about 300 feet east of the Crash Crew complex (Buildings 435 and 1649). The liquid may be contaminated with materials from the Site 9 area. Expansion of the Site 9 IR program field investigation to include this area is recommended.

c 204. There is a stain (ST) about 80 feet by 250 feet in dimension near Crash Crew Pit No. 1 (Site 9). Expansion of the IR program field investigation area to include the stained area is recommended.

a 205. There is a possible vertical tank (VT) near the Oil Change Area (Site 13), adjacent to Building 1505. There is also a stain (ST) on the northerly side of the tank area. Additional investigation is not recommended at this time. The current IR program field investigation of Site 13 appears to be adequate, relative to the features noted here.

between the developed quarry and the MCAS El Toro residential area appear to be inactive.

→ c 215. There is disturbed ground (DG) about 250 feet by 350 feet in area, dark-toned mounded material (MMDT), and a probable trench (TR), all about 1600 feet westerly of West Marine Road and Magazine Road. There is also a possible light-toned unidentified object (UO). Additional investigation of the site as a possible disposal or storage site is recommended.

c 216. Two (2) probable vertical tanks (VT) are adjacent to buildings at the west corner of Perimeter Road and Magazine Road. Verification of the tanks and determination of their contents is recommended.

c 217. Mounded material (MM) and disturbed ground (DG) can be seen about 500 feet southeast of Perimeter Road and Quarry Road. The purpose is unknown. Investigation of the site's history as a possible disposal area is recommended.

b 218. At the Magazine Road Landfill (Site 2) there is a trench (TR) about 600 feet by 70 feet in area, containing probable liquid (LQ). There are also three smaller trenches (TR), an excavation (EX) in the southern portion of area, and disturbed ground (DG) over the entire site. Additional investigation is not recommended at this time. The current IR program field investigation of Site 2 appears to be adequate, relative to the features noted here. The site area is not shown on the photograph.

c 219. There is an area of disturbed ground (DG) with a trench (TR), mounded material (MM) and an excavation (EX) located east of Magazine Road Landfill, near the MCAS El Toro boundary. The purpose of the features is unknown. Additional investigation is recommended. The site area is not shown on the photograph.

c 220. At the County Industrial Farm and Sewage Disposal Facility there are impoundments (IM) with liquids (LQ), two (2) vertical tanks (VT), a trench (TR) and a southerly flow of liquid (LQ) from a building. No additional investigation is recommended unless contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program. The site area is not shown on the photograph.

b 221. No significant changes are noted at the EOD Range. The site area is not shown on the photograph.

c 222. The Magazine Road Landfill (Site 2) remains active and extraction (EXT) from the ridge west of the landfill continues. No additional investigation is recommended at this time. The current IR program field investigation of Site 2 appears to be adequate, relative to the features noted here. The site area is not shown on the photograph.

c 223. There is a probable horizontal tank (HT) (Building 517?) with a revetment (IM) near 4th Street and H Street. Verification of the tank and determination of its contents are recommended.

Aerial Photographic Interpretation  
 MCAS El Toro  
 Santa Ana, California

1975  
 Figure 14  
 Sheet 2 of 2

January 13, 1975  
 Photo Number 157-11-16  
 Source:  
 Continental Aerial Photo, Inc.

Prepared for:

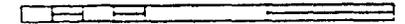
Southwest Division  
 Naval Facilities Engineering Command  
 Contract N68711-92-D-4658

LEGEND:

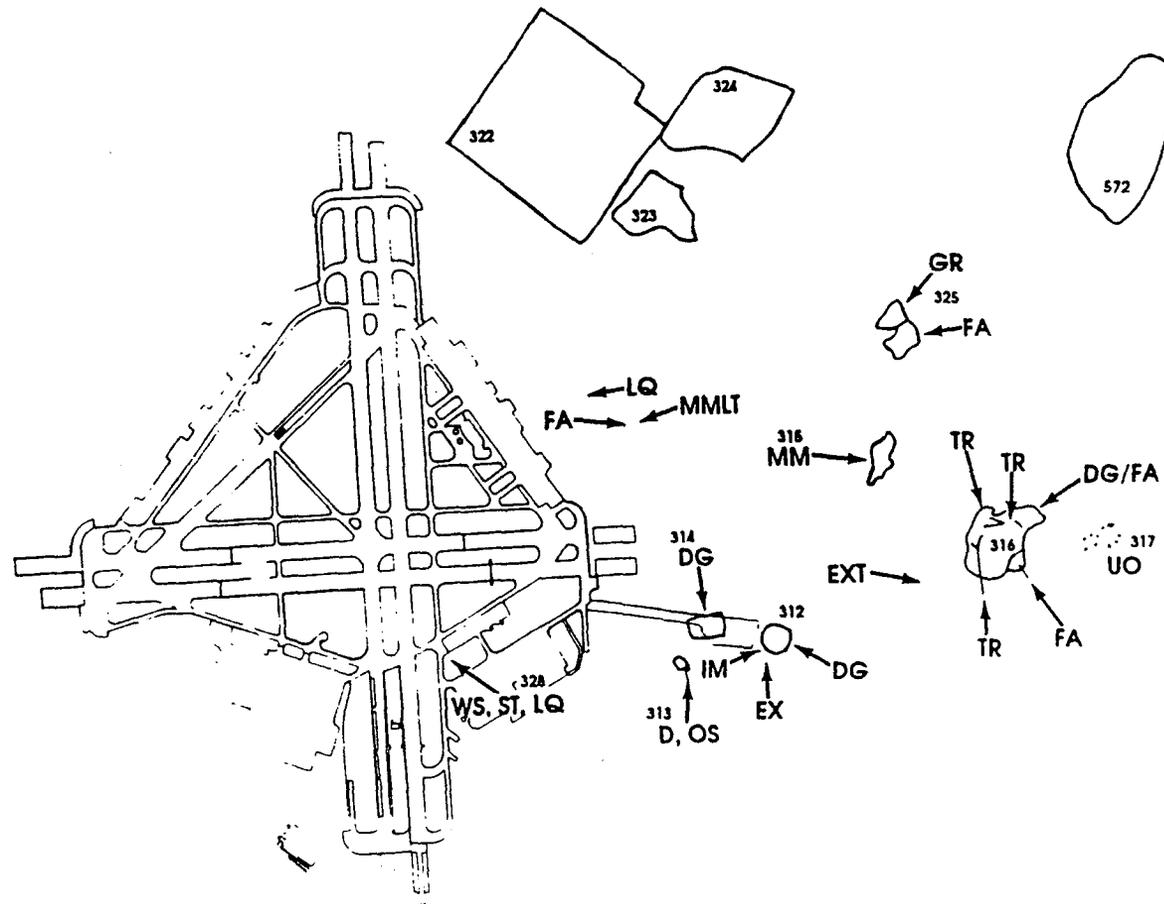
| SYMBOL | DESCRIPTION      | SYMBOL | DESCRIPTION         |
|--------|------------------|--------|---------------------|
| B      | Building         | IM     | Impoundment         |
| D      | Drums            | LQ     | Liquid              |
| DB     | Debris           | LT     | Light-Toned         |
| DG     | Disturbed Ground | M      | Material            |
| DK     | Dark-Toned       | MM     | Mounded Material    |
| EX     | Excavation       | OS     | Open Storage        |
| EXT    | Extraction       | R      | Refuse              |
| FA     | Fill Area        | ST     | Stain               |
| FBR    | Fuel Bladder     | TR     | Trench              |
|        | Revetment        | UO     | Unidentified Objec. |
| GR     | Graded Area      | VT     | Vertical Tank       |
| GS     | Ground Scar      | WS     | Wet Soil            |
| HT     | Horizontal Tank  |        |                     |



2000' 0 2000' 4000'



1" = 2000'



1992 Airfield Outline  
 Used for Reference

**SAIC** Science Applications  
 International Corporation  
 An Employee-Owned Company

Aerial Photographic Interpretation  
 MCAS El Toro  
 Santa Ana, California  
 1975

Figure 14

Sheet 1 of 2

January 13, 1975

Photo Number 157-10-17

Source:

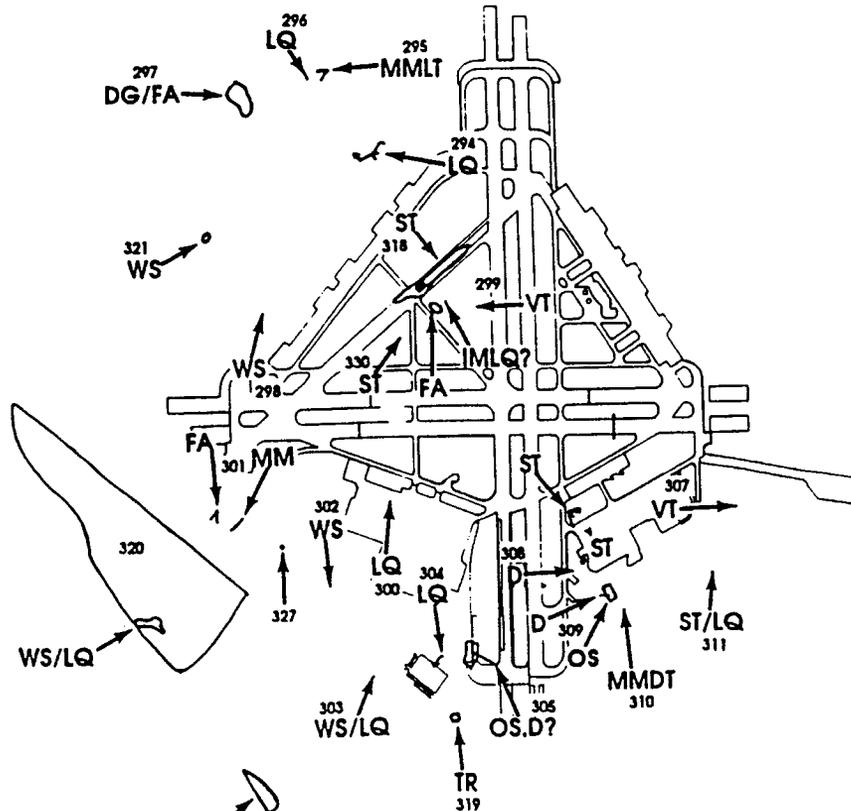
Continental Aerial Photo, Inc.

Prepared for:

Southwest Division  
 Naval Facilities Engineering Command  
 Contract N68711-92-D-4658

LEGEND:

| SYMBOL | DESCRIPTION      | SYMBOL | DESCRIPTION         |
|--------|------------------|--------|---------------------|
| B      | Building         | IM     | Impoundment         |
| D      | Drums            | LQ     | Liquid              |
| DB     | Debris           | LT     | Light-Toned         |
| DG     | Disturbed Ground | M      | Material            |
| DK     | Dark-Toned       | MM     | Mounded Material    |
| EX     | Excavation       | OS     | Open Storage        |
| EXT    | Extraction       | R      | Refuse              |
| FA     | Fill Area        | ST     | Stain               |
| FBR    | Fuel Bladder     | TR     | Trench              |
|        | Revetment        | UO     | Unidentified Object |
| GR     | Graded Area      | VT     | Vertical Tank       |
| GS     | Ground Scar      | WS     | Wet Soil            |
| HT     | Horizontal Tank  |        |                     |

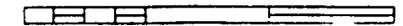


1992 Airfield Outline  
 Used for Reference

E7-1R1.DWG



2000' 0 2000' 4000'



1" = 2000'

**SAC** Science Applications  
 International Corporation  
 An Employee-Owned Company

## 2.13 1975 PHOTOGRAPHS

FIGURE: 14  
DATE: 13 JANUARY 1975  
PHOTOGRAPHS: 157-10-17 and 157-11-16  
NOTE: Copyrighted photograph, reproduction not authorized.

c 294. Liquid (LQ) can be seen flowing southeast and then southwest from the area of Building 99, near N 3rd Street and West Marine Way. The liquid appears to be irrigation runoff; additional investigation is not recommended at this time.

c 295. Light-toned mounded material (MMLT), probably construction related, can be seen near B Street, between N 4th Street and N 5th Street. Additional investigation is not recommended at this time.

c 296. There is possible liquid (LQ) in the street at the front of Building 443. Additional investigation is not recommended at this time.

c 297. There are disturbed ground (DG) and a fill area (FA) at the site of Building 694, near N 4th Street and Perimeter Road. These features appear to be related to construction. Additional investigation is not recommended at this time.

c 298. Possible wet soil (WS) is noted on the westerly side of West Marine Way, between Buildings 27 and 29. Additional investigation is recommended.

c 299. No significant changes are observed at Crash Crew Pit No. 2 (Site 16), but an impoundment (IM) with possible liquid (LQ) and a fill area (FA) are noted. The current IR program field investigation of Site 16 should include this entire area.

a 300. Liquid (LQ) is flowing southeasterly into the parking area from the east side of Building 435 (Crash Crew). The liquid is noted over a period of several years. Verification of the type of liquid is recommended, however, the current IR program field investigation of the Site 9 area appears to be adequate, relative to the features noted here.

c 301. There are mounded material (MM) and a fill area (FA) about 1000 feet northwest of Building 317, near Bee Canyon Wash Aqueduct. No additional investigation is recommended unless contamination is detected near the site, or downgradient of the site, in areas of interest to the IR program.

c 302. There is probable wet soil (WS) in the open area about 200 feet east of Building 322 (Mess Hall). The feature appears to be related to irrigation. Additional investigation is not recommended at this time.

c 313. There is an open storage (OS) area with possible drums (D) about 700 feet northeast of Building 673, near North/East Marine and N 3rd Street. Additional investigation is recommended.

→ c314. Disturbed ground (DG) can be seen about 1000 feet northeast of Building 673, near North / East Marine and N 3rd Street. The cause of the disturbance is unknown. Investigation of the site's history as a possible disposal area is recommended.

b 315. Light-and dark-toned mounded material (MMLT, MMDT) occur over much of the Communication Station Landfill (Site 17). The mounds appear to be soil. Additional investigation is not recommended at this time; the current IR program field investigation of the Site 17 area appears to be adequate, relative to the features noted here.

b 316. The Magazine Road Landfill (Site 2) is active with disturbed ground (DG) several trenches (TR) and fill areas (FA) noted. Most of area has been stripped of vegetation. No additional investigation is recommended at this time; the current IR program field investigation of the Site 2 area appears to be adequate, relative to the features noted here.

c 317. Ten (10) unidentified objects (UO) can be observed on the hillside about 1000 feet east of the Magazine Road Landfill. The objects are light colored, and may be vertical tanks (VT). Identification of the objects is recommended.

c 318. There is a large stain (ST), about 1600 feet long, on Runway 21, apparently caused by a flowing liquid. The stain extends to soil areas adjacent to the runway and into a drainage ditch. The cause of the stain is unknown, but it may be related to a fuel spill or fire suppressant. Investigation of recent occurrences on runway prior to date of photograph (13 Jan 1975) is recommended.

c 319. There is a trench (TR) about 300 feet northerly of the railroad tracks, on the easterly side of Agua Chinon Wash. The purpose of the trench is unknown. Investigation of the site's history as a possible disposal area is recommended.

c 320. With the exception of localized wet soil (WS) and liquid (LQ) no significant changes are noted at the International Raceway, near the southwestern corner of the activity.

c 321. There is wet soil (WS) in the cultivated field west of Perimeter Road near S 5th Street. The wet soil is probably due to irrigation; additional investigation is not recommended at this time.

c 322. No significant changes are noted at the South Coast Agriculture Field Station.

c 323. No significant changes are noted at the former quarry site.

c 324. No significant changes are noted at industrial/agricultural complex.

*Appendix H*  
*Soil Boring Logs*

# Geologic Log of Boring PHA5-SB01

|                                      |  |                             |                                  |
|--------------------------------------|--|-----------------------------|----------------------------------|
| Project <b>MCAS/EL TORO</b>          | Northing - 2129369.693                 | Drilling Company BC2        |                                  |
| Project Number <b>18609</b>          | Easting - 6117308.753                  | Drill Rig <b>CME75</b>      | Begin Drilling 12/10/99          |
| Client <b>SWDIV</b>                  | TOC Elevation <b>NA</b>                | Driller <b>Diego Torres</b> | End Drilling 12/10/99            |
| Location <b>PHOTO ANOMALY AREA 5</b> | TOP OF RIM <b>NA</b>                   | Drill Method <b>HSA</b>     | Well Completion Date<br>12/10/99 |
| Geologist <b>B. Tanaka</b>           | DIAGRAM NOT TO SCALE                   |                             |                                  |
| Borehole Diameter <b>8-INCHES</b>    | Total Depth of Borehole <b>16 FEET</b> | Depth to Water              | <b>NOT ENCOUNTERED</b>           |

| DESCRIPTION   | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) | BORING DETAIL |
|---|--------------|------------|-------------|---------|---------------|-------------|-------------------|---------------|
| Soil surface. Hand augured to 4 feet bgs, 5 foot sample was collected, hand augured to 10 feet bgs.   | 0            |            |             |         |               |             |                   |               |
| Silty Sands (SM): Pale brown (10YR 6/5), fine to coarse, subrounded to subangular sands, fine non plastic silts, slightly moist to dry, no odor detected.   | 2            | SM         |             |         |               |             |                   |               |
| Sands (SW). Pinkish white (7.5YR 8/2), very fine to medium, medium dense to loose, poorly sorted, subrounded to subangular, slightly moist, no odor detected.<br><b>18609-216 Sample collected at 5.0-5.5 feet bgs.</b> | 6            | SW         |             |         | 000           | =000        | 00000             |               |
| Silts (ML). Strong brown (7.5YR 5/6), fine, slightly plastic to plastic, firm to soft, mica, slightly moist, no odor detected.<br><b>18609-217 Sample collected at 10.0-10.5 feet bgs.</b>                              | 10           | ML         |             |         | 000           | 14500       | 00000             |               |
| Silty Sands (SM): Strong brown (7.5YR 5/6), very fine to fine sand, fine slightly plastic to plastic silts, slightly moist, no odor detected.   | 16           | SM         |             |         | 000           | 00000       | 00000             |               |
| End of boring at 16 feet bgs. No groundwater was encountered in the boring. Boring was back filled with 3 (100lb) bags of cement mixed with 50 gallons of potable water.  | 18           |            |             |         |               |             |                   |               |
|   | 20           |            |             |         |               |             |                   |               |
|   | 22           |            |             |         |               |             |                   |               |
|   | 24           |            |             |         |               |             |                   |               |
|   | 26           |            |             |         |               |             |                   |               |
|   | 28           |            |             |         |               |             |                   |               |
|   | 30           |            |             |         |               |             |                   |               |
|   | 32           |            |             |         |               |             |                   |               |
|   | 34           |            |             |         |               |             |                   |               |
|   | 36           |            |             |         |               |             |                   |               |
|   | 38           |            |             |         |               |             |                   |               |
|   | 40           |            |             |         |               |             |                   |               |

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# Geologic Log of Boring PHA5-SB02

|                                      |  |                                 |  |                                |  |                                  |
|--------------------------------------|--|---------------------------------|--|--------------------------------|--|----------------------------------|
| Project <b>MCAS/EL TORO</b>          |  | Northing - 2189552.054          |  | Drilling Company BC2           |  |                                  |
| Project Number <b>18609</b>          |  | Easting - 6117593.411           |  | Drill Rig CME75                |  |                                  |
| Client SWDIV                         |  | TOC Elevation NA                |  | Driller Diego Torres           |  |                                  |
| Location <b>PHOTO ANOMALY AREA 5</b> |  | TOP OF RIM NA                   |  | Drill Method HSA               |  |                                  |
| Geologist B. Tanaka                  |  | DIAGRAM NOT TO SCALE            |  |                                |  | Well Completion Date<br>12/10/99 |
| Borehole Diameter 8-INCHES           |  | Total Depth of Borehole 16 FEET |  | Depth to Water NOT ENCOUNTERED |  |                                  |

| DESCRIPTION  | Depth (feet)   | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) | BORING DETAIL |
|--|--|------------|-------------|---------|---------------|-------------|-------------------|---------------|
| Soil surface. Hand augured to 4 feet bgs, 5 foot sample was collected, hand augured to 10 feet bgs.<br>Silty Sands (SM): Pale brown (10YR 6/5), fine to coarse, subrounded to subangular sands, fine non plastic silts, slightly moist to dry, no odor detected. | 0  |            |             |         |               |             |                   |               |
| Same as above (SM). Strong brown (7.5YR 4/6), no odor detected.<br><b>18609-2514 Sample collected at 5.0-5.5 feet bgs.</b>   | 2<br>4<br>6  | SM         |             | X       | 000           | 1000        | 0000              |               |
| Silts (ML). Strong brown (7.5YR 4/6), fine plastic silts, firm to hard, slightly moist, no odor detected.<br><b>18609-2515 Sample collected at 10.0-10.5 feet bgs.</b>   | 8<br>10<br>12  | ML         |             | X       | 000           | 100         | 0000              |               |
| Sands (SP): Strong brown (7.5YR 5/6), very fine to fine, subrounded to subangular, medium dense, well sorted sands, slightly moist, no odor detected.  | 14<br>16   | SP         |             | X       | 000           | 100         | 0000              |               |
| End of boring at 16 feet bgs. No groundwater was encountered in the boring. Boring was back filled with 3 (100lb) bags of cement mixed with 50 gallons of potable water.   | 18<br>20<br>22<br>24<br>26<br>28<br>30<br>32<br>34<br>36<br>38<br>40 |            |             |         |               |             |                   |               |

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# Geologic Log of Boring PHA5-SB03

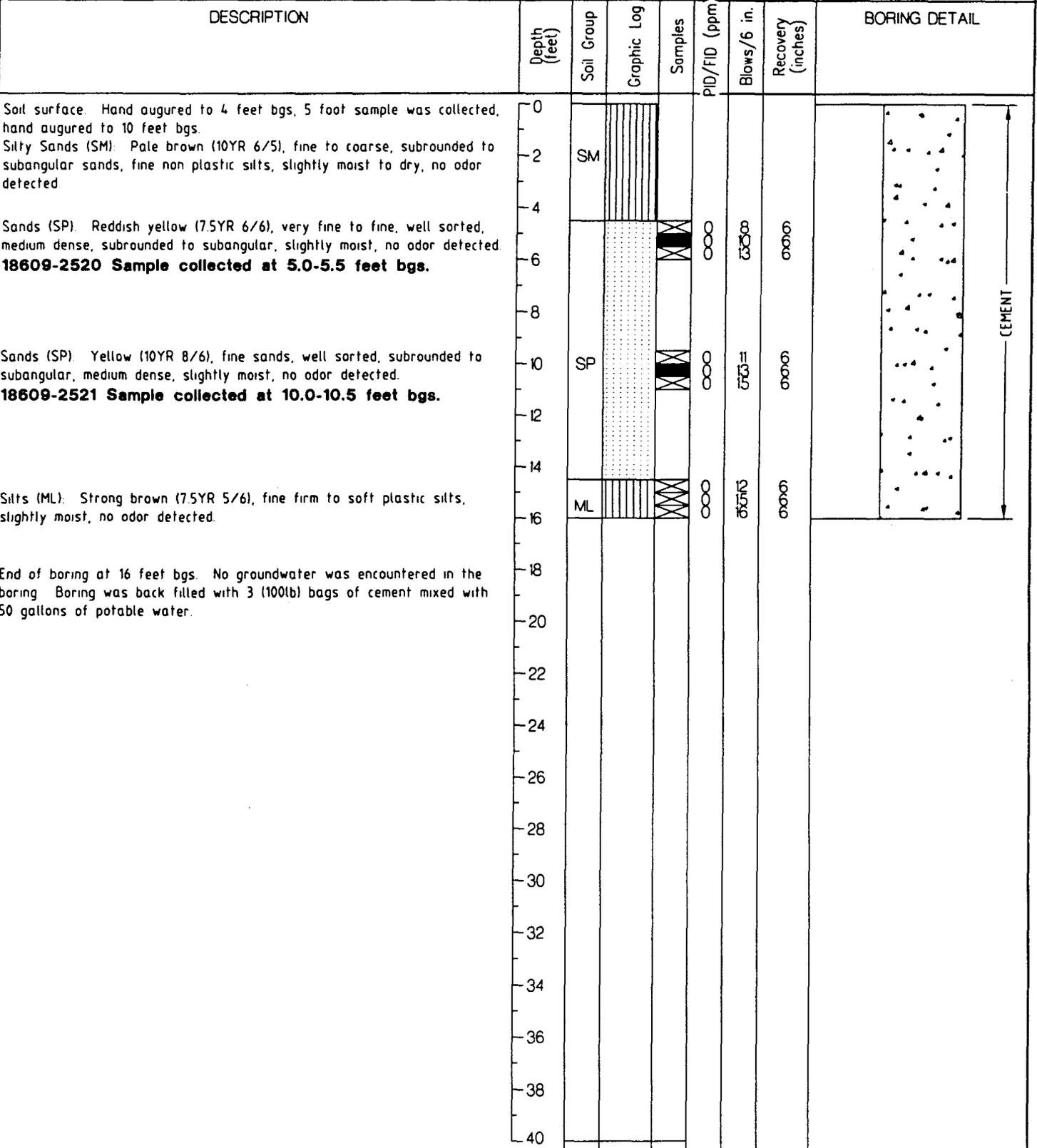
|                                      |                                 |                      |                         |
|--------------------------------------|---------------------------------|----------------------|-------------------------|
| Project <b>MCAS/EL TORO</b>          | Northing - 2189590.811          | Drilling Company BC2 |                         |
| Project Number <b>18609</b>          | Easting - 6116654.147           | Drill Rig CME75      | Begin Drilling 12/10/99 |
| Client SWDIV                         | TOC Elevation NA                | Driller Diego Torres | End Drilling 12/10/99   |
| Location <b>PHOTO ANOMALY AREA 5</b> | TOP OF RIM NA                   | Drill Method HSA     | Well Completion Date    |
| Geologist B. Tanaka                  | DIAGRAM NOT TO SCALE            |                      | 12/10/99                |
| Borehole Diameter 8-INCHES           | Total Depth of Borehole 16 FEET | Depth to Water       | NOT ENCOUNTERED         |

| DESCRIPTION  | Depth (feet) | Soil Group | Graphic Log      | Samples     | PID/FID (ppm) | Blows/6 in. | Recovery (inches) | BORING DETAIL |
|--|--------------|------------|------------------|-------------|---------------|-------------|-------------------|---------------|
| Soil surface. Hand augured to 4 feet bgs. 5 foot sample was collected, hand augured to 10 feet bgs.<br>Silty Sands (SM): Pale brown (10YR 6/5), fine to coarse, subrounded to subangular sands, fine non plastic silts, slightly moist to dry, no odor detected. | 0            |            |                  |             |               |             |                   |               |
| Same as above (SM). Strong brown (7.5YR 5/3), slightly moist, no odor detected.<br><b>18609-2522 &amp; 18609-2523 Sample collected at 5.0-5.5 feet bgs.</b>  | 2            | SM         | [Vertical lines] | [X-pattern] | 000           | 0000        | 0000              |               |
| Sands (SP). Yellow (10YR 8/6), fine sands, well sorted, medium dense, subrounded to subangular, slightly moist, no odor detected.<br><b>18609-2524 Sample collected at 10.0-10.5 feet bgs.</b>   | 4            |            |                  |             |               |             |                   |               |
|  | 6            | SP         | [Dotted pattern] | [X-pattern] | 000           | 0000        | 0000              |               |
|  | 8            | ML         | [Vertical lines] | [X-pattern] | 000           | 0000        | 0000              |               |
| Silts (ML): Strong brown (7.5YR 5/6), fine slightly plastic firm to hard silts, slightly moist, no odor detected.  | 10           |            |                  |             |               |             |                   |               |
| End of boring at 16 feet bgs. No groundwater was encountered in the boring. Boring was back filled with 3 (100lb) bags of cement mixed with 50 gallons of potable water.   | 12           |            |                  |             |               |             |                   |               |
|  | 14           |            |                  |             |               |             |                   |               |
|  | 16           |            |                  |             |               |             |                   |               |
|  | 18           |            |                  |             |               |             |                   |               |
|  | 20           |            |                  |             |               |             |                   |               |
|  | 22           |            |                  |             |               |             |                   |               |
|  | 24           |            |                  |             |               |             |                   |               |
|  | 26           |            |                  |             |               |             |                   |               |
|  | 28           |            |                  |             |               |             |                   |               |
|  | 30           |            |                  |             |               |             |                   |               |
|  | 32           |            |                  |             |               |             |                   |               |
|  | 34           |            |                  |             |               |             |                   |               |
|  | 36           |            |                  |             |               |             |                   |               |
|  | 38           |            |                  |             |               |             |                   |               |
|  | 40           |            |                  |             |               |             |                   |               |

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# Geologic Log of Boring PHA5-SB04

|                                      |                                 |                                |
|--------------------------------------|---------------------------------|--------------------------------|
| Project <b>MCAS/EL TORO</b>          | Northing - 2189437.804          | Drilling Company BC2           |
| Project Number <b>18609</b>          | Easting - 6116853.192           | Drill Rig CME75                |
| Client SWDIV                         | TOC Elevation NA                | Driller Diego Torres           |
| Location <b>PHOTO ANOMALY AREA 5</b> | TOP OF RIM NA                   | Drill Method HSA               |
| Geologist B. Tanaka                  | DIAGRAM NOT TO SCALE            |                                |
| Borehole Diameter 8-INCHES           | Total Depth of Borehole 16 FEET | Depth to Water NOT ENCOUNTERED |



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# Geologic Log of Boring PHA5-SB05

|                                      |                                 |                                |
|--------------------------------------|---------------------------------|--------------------------------|
| Project <b>MCAS/EL TORO</b>          | Northing - 2189336.962          | Drilling Company BC2           |
| Project Number <b>18609</b>          | Easting - 6116938.700           | Drill Rig CME75                |
| Client SWDIV                         | TOC Elevation NA                | Driller Diego Torres           |
| Location <b>PHOTO ANOMALY AREA 5</b> | TOP OF RIM NA                   | Drill Method HSA               |
| Geologist B. Tanaka                  | DIAGRAM NOT TO SCALE            |                                |
| Borehole Diameter 8-INCHES           | Total Depth of Borehole 16 FEET | Depth to Water NOT ENCOUNTERED |

| DESCRIPTION   | Depth (feet) | Soil Group | Graphic Log | Samples | PID/FID (ppm) | Blows/6 in. | Recovery (inches) | BORING DETAIL |
|---|--------------|------------|-------------|---------|---------------|-------------|-------------------|---------------|
| Soil surface Hand augured to 4 feet bgs, 5 foot sample was collected, hand augured to 10 feet bgs.  | 0            |            |             |         |               |             |                   |               |
| Silty Sands (SM). Pale brown (10YR 6/5), fine to coarse, subrounded to subangular sands, fine non plastic silts, slightly moist to dry, no odor detected  | 2            | SM         |             |         |               |             |                   |               |
| Sands (SW). Pink (7.5YR 7/4), fine to coarse, subrounded to subangular, medium dense, partly sorted, slightly moist, no odor detected.<br><b>18609-2518 Sample collected at 5.0-5.5 feet bgs.</b> | 6            | SW         |             |         |               | 13400       | 00000             |               |
| Silts (ML). Strong brown, fine firm to hard, slightly plastic silts, slightly moist, no odor detected.<br><b>18609-2519 Sample collected at 10.0-10.5 feet bgs.</b>                               | 10           | ML         |             |         |               | 67000       | 00000             |               |
| Silts (SM). Strong brown, fine slightly plastic silts, mica, very fine to fine sands, subangular to subrounded, medium dense, slightly moist, no odor detected.                                   | 16           | SM         |             |         |               | 60000       | 00000             |               |
| End of boring at 16 feet bgs. No groundwater was encountered in the boring. Boring was back filled with 3 (100lb) bags of cement mixed with 50 gallons of potable water.                          | 16           |            |             |         |               |             |                   |               |
|   | 18           |            |             |         |               |             |                   |               |
|   | 20           |            |             |         |               |             |                   |               |
|   | 22           |            |             |         |               |             |                   |               |
|   | 24           |            |             |         |               |             |                   |               |
|   | 26           |            |             |         |               |             |                   |               |
|   | 28           |            |             |         |               |             |                   |               |
|   | 30           |            |             |         |               |             |                   |               |
|   | 32           |            |             |         |               |             |                   |               |
|   | 34           |            |             |         |               |             |                   |               |
|   | 36           |            |             |         |               |             |                   |               |
|   | 38           |            |             |         |               |             |                   |               |
|   | 40           |            |             |         |               |             |                   |               |

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***Appendix I***  
***Laboratory Analytical Results***





# EMAX

LABORATORIES, INC.

630 Maple Ave.

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Date: 01-19-2000

EMAX Batch No.: 99L066

Attn: Dwayne Ishida

IT Corporation  
3347 Michelson Dr. # 200  
Irvine CA 92612

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

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Enclosed is the Laboratory report for samples received on  
12/10/99. The data reported include :

| Sample ID  | Control # | Col Date | Matrix | Analysis  |
|------------|-----------|----------|--------|---|
| 18609-2513 | L066-01   | 12/10/99 | WATER  | Modified 8015 by Purge & Trap<br>Volatile Organics by GC/MS   |
| 18609-2514 | L066-02   | 12/10/99 | SOIL   | Modified 8015 by Purge & Trap<br>Modified 8015 by Extraction<br>Volatile Organics by GC/MS<br>M8015 JP-5<br>CAM Metals<br>Mercury |
| 18609-2515 | L066-03   | 12/10/99 | SOIL   | Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals<br>Mercury |
| 18609-2516 | L066-04   | 12/10/99 | SOIL   | Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals            |

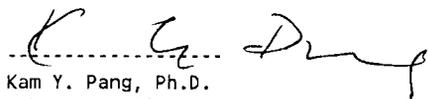
| Sample ID  | Control # | Col Date | Matrix | Analysis  |
|------------|-----------|----------|--------|---|
| 18609-2517 | L066-05   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2518 | L066-06   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2519 | L066-07   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2520 | L066-08   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2521 | L066-09   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2522 | L066-10   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2523 | L066-11   | 12/10/99 | SOIL   | Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS               |

| Sample ID  | Control # | Col Date | Matrix | Analysis  |
|------------|-----------|----------|--------|---|
| 18609-2524 | L066-12   | 12/10/99 | SOIL   | CAM Metals<br>Mercury<br>Modified 8015 by Extraction<br>Modified 8015 by Purge & Trap<br>M8015 JP-5<br>Volatile Organics by GC/MS<br>CAM Metals |
| 18609-2525 | L066-13   | 12/10/99 | WATER  | Mercury<br>Modified 8015 by Purge & Trap<br>Modified 8015 by Extraction<br>Volatile Organics by GC/MS<br>M8015 JP-5<br>CAM Metals<br>Mercury    |

The results are summarized on the following pages.

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

Sincerely yours,

  
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 Kam Y. Pang, Ph.D.  
 Laboratory Director

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No. : 99L066                 Date Extracted: 12/22/99 21:19
Sample ID: 18609-2513              Date Analyzed: 12/22/99 21:19
Lab Samp ID: L066-01               Dilution Factor: 1
Lab File ID: RLP223                Matrix       : WATER
Ext Btch ID: VOL1502               % Moisture   : NA
Calib. Ref.: RLP208                Instrument ID : T-002
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| PARAMETERS                | RESULTS<br>(ug/L) | PRL<br>(ug/L) | MDL<br>(ug/L) |
|---------------------------|-------------------|---------------|---------------|
| 1,1,1-TRICHLOROETHANE     | ND                | 5             | 1.1           |
| 1,1,2,2-TETRACHLOROETHANE | ND                | 5             | .49           |
| 1,1,2-TRICHLOROETHANE     | ND                | 5             | .52           |
| 1,1-DICHLOROETHANE        | ND                | 5             | 1.2           |
| 1,1-DICHLOROETHENE        | ND                | 5             | 2             |
| 1,2-DICHLOROETHANE        | ND                | 5             | .58           |
| 1,2-DICHLOROPROPANE       | ND                | 5             | .53           |
| 2-BUTANONE                | ND                | 50            | 7.9           |
| 2-CHLOROETHYL VINYLETHER  | ND                | 50            | .83           |
| 2-HEXANONE                | ND                | 50            | 1             |
| 4-METHYL-2-PENTANONE      | ND                | 50            | 1             |
| ACETONE                   | ND                | 50            | 10            |
| BENZENE                   | ND                | 5             | .85           |
| BROMODICHLOROMETHANE      | ND                | 5             | .33           |
| BROMOFORM                 | ND                | 5             | .29           |
| BROMOMETHANE              | ND                | 5             | 1.5           |
| CARBON DISULFIDE          | ND                | 5             | 1.3           |
| CARBON TETRACHLORIDE      | ND                | 5             | 1.3           |
| CHLOROBENZENE             | ND                | 5             | .68           |
| CHLOROETHANE              | ND                | 5             | 2.9           |
| CHLOROFORM                | ND                | 5             | .85           |
| CHLOROMETHANE             | ND                | 5             | 1.7           |
| CIS-1,2-DICHLOROETHENE    | ND                | 5             | .97           |
| CIS-1,3-DICHLOROPROPENE   | ND                | 5             | .47           |
| DIBROMOCHLOROMETHANE      | ND                | 5             | .29           |
| ETHYLBENZENE              | ND                | 5             | .72           |
| MTBE                      | ND                | 10            | .96           |
| METHYLENE CHLORIDE        | 4.7JB             | 5             | 1.8           |
| STYRENE                   | ND                | 5             | .58           |
| TETRACHLOROETHENE         | ND                | 5             | 1.2           |
| TOLUENE                   | ND                | 5             | .92           |
| TRANS-1,2-DICHLOROETHENE  | ND                | 5             | 1.5           |
| TRANS-1,3-DICHLOROPROPENE | ND                | 5             | .45           |
| TRICHLOROETHENE           | ND                | 5             | .9            |
| VINYL ACETATE             | ND                | 50            | 6.2           |
| VINYL CHLORIDE            | ND                | 5             | 1.7           |
| XYLENES                   | ND                | 5             | 2.4           |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 98         | 62-139   |
| TOLUENE-D8            | 95         | 75-125   |
| BROMOFLUOROBENZENE    | 92         | 75-125   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.   : 99L066                 Date Extracted: 12/22/99 22:26
Sample ID   : 18609-2514             Date Analyzed: 12/22/99 22:26
Lab Samp ID: L066-02                 Dilution Factor: 1
Lab File ID: RLP225                  Matrix          : SOIL
Ext Btch ID: VOL1502                 % Moisture      : 13.6
Calib. Ref.: RLP208                  Instrument ID    : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.8            | .38            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.8            | .38            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.8            | .27            |
| 1,1-DICHLOROETHANE        | ND                 | 5.8            | .35            |
| 1,1-DICHLOROETHENE        | ND                 | 5.8            | .62            |
| 1,2-DICHLOROETHANE        | ND                 | 5.8            | .38            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.8            | .44            |
| 2-BUTANONE                | ND                 | 58             | 5.9            |
| 2-CHLOROETHYLVINYLETHER   | ND                 | 58             | .2             |
| 2-HEXANONE                | ND                 | 58             | 1.4            |
| 4-METHYL-2-PENTANONE      | ND                 | 58             | 1.3            |
| ACETONE                   | ND                 | 58             | 4.7            |
| BENZENE                   | ND                 | 5.8            | .29            |
| BROMODICHLOROMETHANE      | ND                 | 5.8            | .3             |
| BROMOFORM                 | ND                 | 5.8            | .32            |
| BROMOMETHANE              | ND                 | 5.8            | .74            |
| CARBON DISULFIDE          | ND                 | 5.8            | .15            |
| CARBON TETRACHLORIDE      | ND                 | 5.8            | .92            |
| CHLOROBENZENE             | ND                 | 5.8            | .23            |
| CHLOROETHANE              | ND                 | 5.8            | 2.1            |
| CHLOROFORM                | ND                 | 5.8            | .49            |
| CHLOROMETHANE             | ND                 | 5.8            | 2.4            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.8            | .34            |
| -1,3-DICHLOROPROPENE      | ND                 | 5.8            | .26            |
| DIBROMOCHLOROMETHANE      | ND                 | 5.8            | .091           |
| ETHYLBENZENE              | ND                 | 5.8            | .45            |
| MTBE                      | ND                 | 12             | .43            |
| METHYLENE CHLORIDE        | 4.6JB              | 5.8            | .47            |
| STYRENE                   | ND                 | 5.8            | .51            |
| TETRACHLOROETHENE         | ND                 | 5.8            | .28            |
| TOLUENE                   | ND                 | 5.8            | .36            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.8            | .33            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.8            | .77            |
| TRICHLOROETHENE           | ND                 | 5.8            | .3             |
| VINYL ACETATE             | ND                 | 58             | .83            |
| VINYL CHLORIDE            | ND                 | 5.8            | 1.2            |
| XYLENES                   | ND                 | 5.8            | 1.3            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 102        | 52-149   |
| TOLUENE-D8            | 97         | 65-135   |
| BROMOFLUOROBENZENE    | 92         | 65-135   |

PRL: Project Reporting Limit  
 \* : Out side of QC Limit  
 J : An estimated value between PRL and MDL  
 E : Value exceed the upper level of the initial calibration  
 B : Found in the associated blank  
 D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No. : 99L066                 Date Extracted: 12/22/99 23:00
Sample ID: 18609-2515              Date Analyzed: 12/22/99 23:00
Lab Samp ID: L066-03               Dilution Factor: 1
Lab File ID: RLP226                Matrix          : SOIL
Ext Btch ID: VOL1502               % Moisture      : 12.1
Calib. Ref.: RLP208                Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.7            | .38            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.7            | .38            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.7            | .27            |
| 1,1-DICHLOROETHANE        | ND                 | 5.7            | .34            |
| 1,1-DICHLOROETHENE        | ND                 | 5.7            | .61            |
| 1,2-DICHLOROETHANE        | ND                 | 5.7            | .37            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.7            | .43            |
| 2-BUTANONE                | ND                 | 57             | 5.8            |
| 2-CHLOROETHYLVINYLEETHER  | ND                 | 57             | .19            |
| 2-HEXANONE                | ND                 | 57             | 1.4            |
| 4-METHYL-2-PENTANONE      | ND                 | 57             | 1.3            |
| ACETONE                   | ND                 | 57             | 4.7            |
| BENZENE                   | ND                 | 5.7            | .28            |
| BROMODICHLOROMETHANE      | ND                 | 5.7            | .29            |
| BROMOFORM                 | ND                 | 5.7            | .32            |
| BROMOMETHANE              | ND                 | 5.7            | .73            |
| CARBON DISULFIDE          | ND                 | 5.7            | .14            |
| CARBON TETRACHLORIDE      | ND                 | 5.7            | .9             |
| CHLOROBENZENE             | ND                 | 5.7            | .22            |
| CHLOROETHANE              | ND                 | 5.7            | 2              |
| CHLOROFORM                | ND                 | 5.7            | .48            |
| CHLOROMETHANE             | ND                 | 5.7            | 2.3            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.7            | .33            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.7            | .25            |
| DIBROMOCHLOROMETHANE      | ND                 | 5.7            | .09            |
| ETHYLBENZENE              | ND                 | 5.7            | .45            |
| MTBE                      | ND                 | 11             | .42            |
| METHYLENE CHLORIDE        | 3.6JB              | 5.7            | .47            |
| STYRENE                   | ND                 | 5.7            | .5             |
| TETRACHLOROETHENE         | ND                 | 5.7            | .28            |
| TOLUENE                   | ND                 | 5.7            | .36            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.7            | .33            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.7            | .76            |
| TRICHLOROETHENE           | ND                 | 5.7            | .29            |
| VINYL ACETATE             | ND                 | 57             | .81            |
| VINYL CHLORIDE            | ND                 | 5.7            | 1.1            |
| XYLENES                   | ND                 | 5.7            | 1.2            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 101        | 52-149   |
| TOLUENE-D8            | 97         | 65-135   |
| BROMOFLUOROBENZENE    | 93         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client   : IT CORPORATION           Date Collected: 12/10/99
Object  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No. : 99L066                 Date Extracted: 12/22/99 23:34
Sample ID: 18609-2516              Date Analyzed: 12/22/99 23:34
Lab Samp ID: L066-04               Dilution Factor: 1
Lab File ID: RLP227                Matrix       : SOIL
Ext Btch ID: VOL1502               % Moisture   : 1.8
Calib. Ref.: RLP208                Instrument ID : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.1            | .34            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.1            | .34            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.1            | .24            |
| 1,1-DICHLOROETHANE        | ND                 | 5.1            | .31            |
| 1,1-DICHLOROETHENE        | ND                 | 5.1            | .55            |
| 1,2-DICHLOROETHANE        | ND                 | 5.1            | .33            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.1            | .38            |
| 2-BUTANONE                | ND                 | 5.1            | 5.2            |
| 2-CHLOROETHYLVINYLETHYR   | ND                 | 5.1            | .17            |
| 2-HEXANONE                | ND                 | 5.1            | 1.3            |
| 4-METHYL-2-PENTANONE      | ND                 | 5.1            | 1.2            |
| ACETONE                   | ND                 | 5.1            | 4.2            |
| BENZENE                   | ND                 | 5.1            | .25            |
| BROMODICHLOROMETHANE      | ND                 | 5.1            | .26            |
| BROMOFORM                 | ND                 | 5.1            | .28            |
| BROMOMETHANE              | ND                 | 5.1            | .65            |
| CARBON DISULFIDE          | ND                 | 5.1            | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5.1            | .81            |
| CHLOROBENZENE             | ND                 | 5.1            | .2             |
| CHLOROETHANE              | ND                 | 5.1            | 1.8            |
| CHLOROFORM                | ND                 | 5.1            | .43            |
| CHLOROMETHANE             | ND                 | 5.1            | 2.1            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.1            | .3             |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.1            | .23            |
| BROMOCHLOROMETHANE        | ND                 | 5.1            | .08            |
| ETHYLBENZENE              | ND                 | 5.1            | .4             |
| MTBE                      | ND                 | 10             | .38            |
| METHYLENE CHLORIDE        | 3.1JB              | 5.1            | .42            |
| STYRENE                   | ND                 | 5.1            | .45            |
| TETRACHLOROETHENE         | ND                 | 5.1            | .25            |
| TOLUENE                   | ND                 | 5.1            | .32            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.1            | .29            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.1            | .68            |
| TRICHLOROETHENE           | ND                 | 5.1            | .26            |
| VINYL ACETATE             | ND                 | 5.1            | .73            |
| VINYL CHLORIDE            | ND                 | 5.1            | 1              |
| XYLENES                   | ND                 | 5.1            | 1.1            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 105        | 52-149   |
| TOLUENE-D8            | 98         | 65-135   |
| BROMOFLUOROBENZENE    | 93         | 65-135   |

PRL: Project Reporting Limit  
 \* : Out side of QC Limit  
 J : An estimated value between PRL and MDL  
 E : Value exceed the upper level of the initial calibration  
 B : Found in the associated blank  
 D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No. : 99L066                 Date Extracted: 12/23/99 04:04
Sample ID: 18609-2517              Date Analyzed: 12/23/99 04:04
Lab Samp ID: L066-05               Dilution Factor: 1
Lab File ID: RLP235                Matrix : SOIL
Ext Btch ID: VOL1602               % Moisture : 18.1
Calib. Ref.: RLP230                Instrument ID : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 6.1            | .4             |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 6.1            | .4             |
| 1,1,2-TRICHLOROETHANE     | ND                 | 6.1            | .28            |
| 1,1-DICHLOROETHANE        | ND                 | 6.1            | .37            |
| 1,1-DICHLOROETHENE        | ND                 | 6.1            | .66            |
| 1,2-DICHLOROETHANE        | ND                 | 6.1            | .4             |
| 1,2-DICHLOROPROPANE       | ND                 | 6.1            | .46            |
| 2-BUTANONE                | ND                 | 61             | 6.3            |
| 2-CHLOROETHYLVINYLETHER   | ND                 | 61             | .21            |
| 2-HEXANONE                | ND                 | 61             | 1.5            |
| 4-METHYL-2-PENTANONE      | ND                 | 61             | 1.4            |
| ACETONE                   | ND                 | 61             | 5              |
| BENZENE                   | ND                 | 6.1            | .3             |
| BROMODICHLOROMETHANE      | ND                 | 6.1            | .32            |
| BROMOFORM                 | ND                 | 6.1            | .34            |
| BROMOMETHANE              | ND                 | 6.1            | .78            |
| CARBON DISULFIDE          | ND                 | 6.1            | .15            |
| CARBON TETRACHLORIDE      | ND                 | 6.1            | .97            |
| CHLOROETHANE              | ND                 | 6.1            | .24            |
| CHLOROETHENE              | ND                 | 6.1            | 2.2            |
| CHLOROFORM                | ND                 | 6.1            | .52            |
| CHLOROMETHANE             | ND                 | 6.1            | 2.5            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 6.1            | .36            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 6.1            | .27            |
| DIBROMOCHLOROMETHANE      | ND                 | 6.1            | .096           |
| ETHYLBENZENE              | ND                 | 6.1            | .48            |
| MTBE                      | ND                 | 12             | .45            |
| METHYLENE CHLORIDE        | 4.1JB              | 6.1            | .5             |
| STYRENE                   | ND                 | 6.1            | .53            |
| TETRACHLOROETHENE         | ND                 | 6.1            | .3             |
| TOLUENE                   | ND                 | 6.1            | .38            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 6.1            | .35            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 6.1            | .81            |
| TRICHLOROETHENE           | ND                 | 6.1            | .31            |
| VINYL ACETATE             | ND                 | 61             | .87            |
| VINYL CHLORIDE            | ND                 | 6.1            | 1.2            |
| XYLENES                   | ND                 | 6.1            | 1.3            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 98         | 52-149   |
| TOLUENE-DB            | 97         | 65-135   |
| BROMOFLUOROBENZENE    | 88         | 65-135   |

PRL: Project Reporting Limit

\* : Out side of QC Limit

J : An estimated value between PRL and MDL

E : Value exceed the upper level of the initial calibration

B : Found in the associated blank

D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.  : 99L066                  Date Extracted: 12/23/99 04:37
Sample ID  : 18609-2518              Date Analyzed: 12/23/99 04:37
Lab Samp ID: L066-06                 Dilution Factor: 1
Lab File ID: RLP236                  Matrix          : SOIL
Ext Btch ID: VOL1602                 % Moisture     : 4.4
Calib. Ref.: RLP230                  Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.2            | .35            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.2            | .35            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.2            | .24            |
| 1,1-DICHLOROETHANE        | ND                 | 5.2            | .32            |
| 1,1-DICHLOROETHENE        | ND                 | 5.2            | .56            |
| 1,2-DICHLOROETHANE        | ND                 | 5.2            | .34            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.2            | .39            |
| 2-BUTANONE                | ND                 | 52             | 5.4            |
| 2-CHLOROETHYL VINYLETHER  | ND                 | 52             | .18            |
| 2-HEXANONE                | ND                 | 52             | 1.3            |
| 4-METHYL-2-PENTANONE      | ND                 | 52             | 1.2            |
| ACETONE                   | ND                 | 52             | 4.3            |
| BENZENE                   | ND                 | 5.2            | .26            |
| BROMODICHLOROMETHANE      | ND                 | 5.2            | .27            |
| BROMOFORM                 | ND                 | 5.2            | .29            |
| BROMOMETHANE              | ND                 | 5.2            | .67            |
| CARBON DISULFIDE          | ND                 | 5.2            | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5.2            | .83            |
| CHLOROETHANE              | ND                 | 5.2            | 1.9            |
| CHLOROFORM                | ND                 | 5.2            | .44            |
| CHLOROMETHANE             | ND                 | 5.2            | 2.2            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.2            | .3             |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.2            | .23            |
| BROMOCHLOROMETHANE        | ND                 | 5.2            | .083           |
| ETHYLBENZENE              | ND                 | 5.2            | .41            |
| MTBE                      | ND                 | 10             | .39            |
| METHYLENE CHLORIDE        | 3.2JB              | 5.2            | .43            |
| STYRENE                   | ND                 | 5.2            | .46            |
| TETRACHLOROETHENE         | ND                 | 5.2            | .25            |
| TOLUENE                   | ND                 | 5.2            | .33            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.2            | .3             |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.2            | .7             |
| TRICHLOROETHENE           | ND                 | 5.2            | .27            |
| VINYL ACETATE             | ND                 | 52             | .75            |
| VINYL CHLORIDE            | ND                 | 5.2            | 1.1            |
| XYLENES                   | ND                 | 5.2            | 1.1            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 102        | 52-149   |
| TOLUENE-D8            | 97         | 65-135   |
| BROMOFLUOROBENZENE    | 89         | 65-135   |

PRL: Project Reporting Limit  
 \* : Out side of QC Limit  
 J : An estimated value between PRL and MDL  
 E : Value exceed the upper level of the initial calibration  
 B : Found in the associated blank  
 D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.   : 99L066                 Date Extracted: 12/23/99 05:11
Sample ID   : 18609-2519             Date Analyzed: 12/23/99 05:11
Lab Samp ID: L066-07                 Dilution Factor: 1
Lab File ID: RLP237                  Matrix          : SOIL
Ext Btch ID: VOL1602                 % Moisture      : 9.5
Calib. Ref.: RLP230                  Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.5            | .37            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.5            | .37            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.5            | .26            |
| 1,1-DICHLOROETHANE        | ND                 | 5.5            | .33            |
| 1,1-DICHLOROETHENE        | ND                 | 5.5            | .59            |
| 1,2-DICHLOROETHANE        | ND                 | 5.5            | .36            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.5            | .42            |
| 2-BUTANONE                | ND                 | 55             | 5.7            |
| 2-CHLOROETHYLVINYLETHER   | ND                 | 55             | .19            |
| 2-HEXANONE                | ND                 | 55             | 1.4            |
| 4-METHYL-2-PENTANONE      | ND                 | 55             | 1.3            |
| ACETONE                   | ND                 | 55             | 4.5            |
| BENZENE                   | ND                 | 5.5            | .27            |
| BROMODICHLOROMETHANE      | ND                 | 5.5            | .29            |
| BROMOFORM                 | ND                 | 5.5            | .31            |
| BROMOMETHANE              | ND                 | 5.5            | .71            |
| CARBON DISULFIDE          | ND                 | 5.5            | .14            |
| CARBON TETRACHLORIDE      | ND                 | 5.5            | .87            |
| CHLOROBENZENE             | ND                 | 5.5            | .22            |
| CHLOROETHANE              | ND                 | 5.5            | 2              |
| CHLOROFORM                | ND                 | 5.5            | .47            |
| CHLOROMETHANE             | ND                 | 5.5            | 2.3            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.5            | .32            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.5            | .25            |
| DIBROMOCHLOROMETHANE      | ND                 | 5.5            | .087           |
| ETHYLBENZENE              | ND                 | 5.5            | .43            |
| MTBE                      | ND                 | 11             | .41            |
| METHYLENE CHLORIDE        | 3.2JB              | 5.5            | .45            |
| STYRENE                   | ND                 | 5.5            | .48            |
| TETRACHLOROETHENE         | ND                 | 5.5            | .27            |
| TOLUENE                   | ND                 | 5.5            | .35            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.5            | .32            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.5            | .74            |
| TRICHLOROETHENE           | ND                 | 5.5            | .28            |
| VINYL ACETATE             | ND                 | 55             | .79            |
| VINYL CHLORIDE            | ND                 | 5.5            | 1.1            |
| XYLENES                   | ND                 | 5.5            | 1.2            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 99         | 52-149   |
| TOLUENE-D8            | 98         | 65-135   |
| BROMOFLUOROBENZENE    | 89         | 65-135   |

PRL: Project Reporting Limit  
 \* : Out side of QC Limit  
 J : An estimated value between PRL and MDL  
 E : Value exceed the upper level of the initial calibration  
 B : Found in the associated blank  
 D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.  : 99L066                  Date Extracted: 12/23/99 05:44
Sample ID  : 18609-2520              Date Analyzed: 12/23/99 05:44
Lab Samp ID: L066-08                 Dilution Factor: 1
Lab File ID: RLP238                  Matrix          : SOIL
Ext Btch ID: VOL1602                % Moisture     : 10.4
Calib. Ref.: RLP230                  Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.6            | .37            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.6            | .37            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.6            | .26            |
| 1,1-DICHLOROETHANE        | ND                 | 5.6            | .34            |
| 1,1-DICHLOROETHENE        | ND                 | 5.6            | .6             |
| 1,2-DICHLOROETHANE        | ND                 | 5.6            | .36            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.6            | .42            |
| 2-BUTANONE                | ND                 | 56             | 5.7            |
| 2-CHLOROETHYL VINYLETHER  | ND                 | 56             | .19            |
| 2-HEXANONE                | ND                 | 56             | 1.4            |
| 4-METHYL-2-PENTANONE      | ND                 | 56             | 1.3            |
| ACETONE                   | ND                 | 56             | 4.6            |
| BENZENE                   | ND                 | 5.6            | .28            |
| BROMODICHLOROMETHANE      | ND                 | 5.6            | .29            |
| BROMOFORM                 | ND                 | 5.6            | .31            |
| BROMOMETHANE              | ND                 | 5.6            | .71            |
| CARBON DISULFIDE          | ND                 | 5.6            | .14            |
| CARBON TETRACHLORIDE      | ND                 | 5.6            | .88            |
| CHLOROBENZENE             | ND                 | 5.6            | .22            |
| CHLOROETHANE              | ND                 | 5.6            | .2             |
| CHLOROFORM                | ND                 | 5.6            | .47            |
| CHLOROMETHANE             | ND                 | 5.6            | 2.3            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.6            | .32            |
| 1,3-DICHLOROPROPENE       | ND                 | 5.6            | .25            |
| BROMOCHLOROMETHANE        | ND                 | 5.6            | .088           |
| ETHYLBENZENE              | ND                 | 5.6            | .44            |
| MTBE                      | ND                 | 11             | .41            |
| METHYLENE CHLORIDE        | 3.7JB              | 5.6            | .46            |
| STYRENE                   | ND                 | 5.6            | .49            |
| TETRACHLOROETHENE         | ND                 | 5.6            | .27            |
| TOLUENE                   | ND                 | 5.6            | .35            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.6            | .32            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.6            | .74            |
| TRICHLOROETHENE           | ND                 | 5.6            | .28            |
| VINYL ACETATE             | ND                 | 56             | .8             |
| VINYL CHLORIDE            | ND                 | 5.6            | 1.1            |
| XYLENES                   | ND                 | 5.6            | 1.2            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 101        | 52-149   |
| TOLUENE-DB            | 97         | 65-135   |
| BROMOFLUOROBENZENE    | 88         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client       : IT CORPORATION           Date Collected: 12/10/99
Project      : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.    : 99L066                  Date Extracted: 12/23/99 06:18
Sample ID    : 18609-2521              Date Analyzed: 12/23/99 06:18
Lab Samp ID  : L066-09                 Dilution Factor: 1
Lab File ID  : RLP239                  Matrix          : SOIL
Ext Btch ID  : VOL1602                 % Moisture     : 5.7
Calib. Ref.  : RLP230                  Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.3            | .35            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.3            | .35            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.3            | .25            |
| 1,1-DICHLOROETHANE        | ND                 | 5.3            | .32            |
| 1,1-DICHLOROETHENE        | ND                 | 5.3            | .57            |
| 1,2-DICHLOROETHANE        | ND                 | 5.3            | .35            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.3            | .4             |
| 2-BUTANONE                | ND                 | 53             | 5.4            |
| 2-CHLOROETHYL VINYLETHER  | ND                 | 53             | .18            |
| 2-HEXANONE                | ND                 | 53             | 1.3            |
| 4-METHYL-2-PENTANONE      | ND                 | 53             | 1.2            |
| ACETONE                   | ND                 | 53             | 4.3            |
| BENZENE                   | ND                 | 5.3            | .26            |
| BROMODICHLOROMETHANE      | ND                 | 5.3            | .27            |
| BROMOFORM                 | ND                 | 5.3            | .3             |
| BROMOMETHANE              | ND                 | 5.3            | .68            |
| CARBON DISULFIDE          | ND                 | 5.3            | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5.3            | .84            |
| CHLOROETHANE              | ND                 | 5.3            | 1.9            |
| CHLOROBENZENE             | ND                 | 5.3            | .21            |
| CHLOROETHANE              | ND                 | 5.3            | 1.9            |
| CHLOROFORM                | ND                 | 5.3            | .45            |
| CHLOROMETHANE             | ND                 | 5.3            | 2.2            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.3            | .31            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.3            | .24            |
| DIBROMOCHLOROMETHANE      | ND                 | 5.3            | .084           |
| ETHYLBENZENE              | ND                 | 5.3            | .42            |
| MTBE                      | ND                 | 11             | .39            |
| METHYLENE CHLORIDE        | 3JB                | 5.3            | .43            |
| STYRENE                   | ND                 | 5.3            | .46            |
| TETRACHLOROETHENE         | ND                 | 5.3            | .26            |
| TOLUENE                   | ND                 | 5.3            | .33            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.3            | .31            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.3            | .71            |
| TRICHLOROETHENE           | ND                 | 5.3            | .27            |
| VINYL ACETATE             | ND                 | 53             | .76            |
| VINYL CHLORIDE            | ND                 | 5.3            | 1.1            |
| XYLENES                   | ND                 | 5.3            | 1.2            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 98         | 52-149   |
| TOLUENE-D8            | 98         | 65-135   |
| BROMOFLUOROBENZENE    | 92         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Subject     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.   : 99L066                 Date Extracted: 12/23/99 18:23
Sample ID   : 18609-2522             Date Analyzed: 12/23/99 18:23
Lab Samp ID : L066-10                Dilution Factor: 1
Lab File ID : RLP257                 Matrix          : SOIL
Ext Btch ID: VOL1702                 % Moisture     : 9.8
Calib. Ref.: RLP252                 Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.5            | .37            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.5            | .37            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.5            | .26            |
| 1,1-DICHLOROETHANE        | ND                 | 5.5            | .34            |
| 1,1-DICHLOROETHENE        | ND                 | 5.5            | .6             |
| 1,2-DICHLOROETHANE        | ND                 | 5.5            | .36            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.5            | .42            |
| 2-BUTANONE                | ND                 | 55             | 5.7            |
| 2-CHLOROETHYL VINYLETHER  | ND                 | 55             | .19            |
| 2-HEXANONE                | ND                 | 55             | 1.4            |
| 4-METHYL-2-PENTANONE      | ND                 | 55             | 1.3            |
| ACETONE                   | 18J                | 55             | 4.5            |
| BENZENE                   | ND                 | 5.5            | .27            |
| BROMODICHLOROMETHANE      | ND                 | 5.5            | .29            |
| BROMOFORM                 | ND                 | 5.5            | .31            |
| BROMOMETHANE              | ND                 | 5.5            | .71            |
| CARBON DISULFIDE          | ND                 | 5.5            | .14            |
| CARBON TETRACHLORIDE      | ND                 | 5.5            | .88            |
| CHLORO BENZENE            | ND                 | 5.5            | .22            |
| CHLOROETHANE              | ND                 | 5.5            | .2             |
| CHLOROFORM                | ND                 | 5.5            | .47            |
| CHLOROMETHANE             | ND                 | 5.5            | 2.3            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.5            | .32            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.5            | .25            |
| BROMOCHLOROMETHANE        | ND                 | 5.5            | .088           |
| ETHYLBENZENE              | ND                 | 5.5            | .43            |
| MTBE                      | ND                 | 11             | .41            |
| METHYLENE CHLORIDE        | 2J                 | 5.5            | .45            |
| STYRENE                   | ND                 | 5.5            | .49            |
| TETRACHLOROETHENE         | ND                 | 5.5            | .27            |
| TOLUENE                   | ND                 | 5.5            | .35            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.5            | .32            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.5            | .74            |
| TRICHLOROETHENE           | ND                 | 5.5            | .28            |
| VINYL ACETATE             | ND                 | 55             | .79            |
| VINYL CHLORIDE            | ND                 | 5.5            | 1.1            |
| XYLENES                   | ND                 | 5.5            | 1.2            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 103        | 52-149   |
| TOLUENE-D8            | 97         | 65-135   |
| BROMOFLUOROBENZENE    | 88         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.  : 99L066                  Date Extracted: 12/23/99 07:25
Sample ID  : 18609-2523              Date Analyzed: 12/23/99 07:25
Lab Samp ID: L066-11                 Dilution Factor: 1
Lab File ID: RLP241                  Matrix          : SOIL
Ext Btch ID: VOL1602                 % Moisture     : 13.1
Calib. Ref.: RLP230                  Instrument ID   : I-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.8            | .38            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.8            | .38            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.8            | .27            |
| 1,1-DICHLOROETHANE        | ND                 | 5.8            | .35            |
| 1,1-DICHLOROETHENE        | ND                 | 5.8            | .62            |
| 1,2-DICHLOROETHANE        | ND                 | 5.8            | .38            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.8            | .43            |
| 2-BUTANONE                | ND                 | 58             | 5.9            |
| 2-CHLOROETHYLVINYLETHER   | ND                 | 58             | .2             |
| 2-HEXANONE                | ND                 | 58             | 1.4            |
| 4-METHYL-2-PENTANONE      | ND                 | 58             | 1.3            |
| ACETONE                   | ND                 | 58             | 4.7            |
| BENZENE                   | ND                 | 5.8            | .29            |
| BROMODICHLOROMETHANE      | ND                 | 5.8            | .3             |
| BROMOFORM                 | ND                 | 5.8            | .32            |
| BROMOMETHANE              | ND                 | 5.8            | .74            |
| CARBON DISULFIDE          | ND                 | 5.8            | .14            |
| CARBON TETRACHLORIDE      | ND                 | 5.8            | .91            |
| CHLOROBENZENE             | ND                 | 5.8            | .23            |
| CHLOROETHANE              | ND                 | 5.8            | .2             |
| CHLOROFORM                | ND                 | 5.8            | .49            |
| CHLOROMETHANE             | ND                 | 5.8            | 2.4            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.8            | .33            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.8            | .26            |
| DIBROMOCHLOROMETHANE      | ND                 | 5.8            | .091           |
| ETHYLBENZENE              | ND                 | 5.8            | .45            |
| MTBE                      | ND                 | 12             | .43            |
| METHYLENE CHLORIDE        | ND                 | 5.8            | .47            |
| STYRENE                   | ND                 | 5.8            | .5             |
| TETRACHLOROETHENE         | ND                 | 5.8            | .28            |
| TOLUENE                   | ND                 | 5.8            | .36            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.8            | .33            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.8            | .77            |
| TRICHLOROETHENE           | ND                 | 5.8            | .29            |
| VINYL ACETATE             | ND                 | 58             | .82            |
| VINYL CHLORIDE            | ND                 | 5.8            | 1.2            |
| XYLENES                   | ND                 | 5.8            | 1.3            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 102        | 52-149   |
| TOLUENE-D8            | 95         | 65-135   |
| BROMOFLUOROBENZENE    | 82         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client      : IT CORPORATION           Date Collected: 12/10/99
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No.  : 99L066                  Date Extracted: 12/23/99 09:50
Sample ID  : 18609-2524              Date Analyzed: 12/23/99 09:50
Lab Samp ID: L066-12                 Dilution Factor: 1
Lab File ID: RLP245                  Matrix          : SOIL
Ext Btch ID: VOL1602                 % Moisture     : 2.9
Calib. Ref.: RLP230                  Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5.1            | .34            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5.1            | .34            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5.1            | .24            |
| 1,1-DICHLOROETHANE        | ND                 | 5.1            | .31            |
| 1,1-DICHLOROETHENE        | ND                 | 5.1            | .55            |
| 1,2-DICHLOROETHANE        | ND                 | 5.1            | .34            |
| 1,2-DICHLOROPROPANE       | ND                 | 5.1            | .39            |
| 2-BUTANONE                | ND                 | 51             | 5.3            |
| 2-CHLOROETHYL VINYLETHER  | ND                 | 51             | .18            |
| 2-HEXANONE                | ND                 | 51             | 1.3            |
| 4-METHYL-2-PENTANONE      | ND                 | 51             | 1.2            |
| ACETONE                   | ND                 | 51             | 4.2            |
| BENZENE                   | ND                 | 5.1            | .26            |
| BROMODICHLOROMETHANE      | ND                 | 5.1            | .27            |
| BROMOFORM                 | ND                 | 5.1            | .29            |
| BROMOMETHANE              | ND                 | 5.1            | .66            |
| CARBON DISULFIDE          | ND                 | 5.1            | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5.1            | .81            |
| CHLORO BENZENE            | ND                 | 5.1            | .2             |
| CHLOROETHANE              | ND                 | 5.1            | 1.8            |
| CHLOROFORM                | ND                 | 5.1            | .44            |
| CHLOROMETHANE             | ND                 | 5.1            | 2.1            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5.1            | .3             |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5.1            | .23            |
| BROMOCHLOROMETHANE        | ND                 | 5.1            | .081           |
| ETHYLBENZENE              | ND                 | 5.1            | .4             |
| MTBE                      | ND                 | 10             | .38            |
| METHYLENE CHLORIDE        | ND                 | 5.1            | .42            |
| STYRENE                   | ND                 | 5.1            | .45            |
| TETRACHLOROETHENE         | ND                 | 5.1            | .25            |
| TOLUENE                   | ND                 | 5.1            | .32            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5.1            | .3             |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5.1            | .69            |
| TRICHLOROETHENE           | ND                 | 5.1            | .26            |
| VINYL ACETATE             | ND                 | 51             | .74            |
| VINYL CHLORIDE            | ND                 | 5.1            | .1             |
| XYLENES                   | ND                 | 5.1            | 1.1            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 102        | 52-149   |
| TOLUENE-D8            | 96         | 65-135   |
| BROMOFLUOROBENZENE    | 92         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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=====
Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Batch No. : 99L066                 Date Extracted: 12/22/99 21:53
Sample ID: 18609-2525              Date Analyzed: 12/22/99 21:53
Lab Samp ID: L066-13              Dilution Factor: 1
Lab File ID: RLP224                Matrix       : WATER
Ext Btch ID: VOL1502              % Moisture   : NA
Calib. Ref.: RLP208                Instrument ID : T-002
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| PARAMETERS                | RESULTS<br>(ug/L) | PRL<br>(ug/L) | MDL<br>(ug/L) |
|---------------------------|-------------------|---------------|---------------|
| 1,1,1-TRICHLOROETHANE     | ND                | 5             | 1.1           |
| 1,1,2,2-TETRACHLOROETHANE | ND                | 5             | .49           |
| 1,1,2-TRICHLOROETHANE     | ND                | 5             | .52           |
| 1,1-DICHLOROETHANE        | ND                | 5             | 1.2           |
| 1,1-DICHLOROETHENE        | ND                | 5             | 2             |
| 1,2-DICHLOROETHANE        | ND                | 5             | .58           |
| 1,2-DICHLOROPROPANE       | ND                | 5             | .53           |
| 2-BUTANONE                | ND                | 50            | 7.9           |
| 2-CHLOROETHYLVINYLEETHER  | ND                | 50            | .83           |
| 2-HEXANONE                | ND                | 50            | 1             |
| 4-METHYL-2-PENTANONE      | ND                | 50            | 1             |
| ACETONE                   | ND                | 50            | 10            |
| BENZENE                   | ND                | 5             | .85           |
| BROMODICHLOROMETHANE      | ND                | 5             | .33           |
| BROMOFORM                 | ND                | 5             | .29           |
| BROMOMETHANE              | ND                | 5             | 1.5           |
| CARBON DISULFIDE          | ND                | 5             | 1.3           |
| CARBON TETRACHLORIDE      | ND                | 5             | 1.3           |
| CHLOROBENZENE             | ND                | 5             | .68           |
| CHLOROETHANE              | ND                | 5             | 2.9           |
| CHLOROFORM                | ND                | 5             | .85           |
| CHLOROMETHANE             | ND                | 5             | 1.7           |
| CIS-1,2-DICHLOROETHENE    | ND                | 5             | .97           |
| CIS-1,3-DICHLOROPROPENE   | ND                | 5             | .47           |
| DIBROMOCHLOROMETHANE      | ND                | 5             | .29           |
| ETHYLBENZENE              | ND                | 5             | .72           |
| MTBE                      | ND                | 10            | .96           |
| METHYLENE CHLORIDE        | 3.7JB             | 5             | 1.8           |
| STYRENE                   | ND                | 5             | .58           |
| TETRACHLOROETHENE         | ND                | 5             | 1.2           |
| TOLUENE                   | ND                | 5             | .92           |
| TRANS-1,2-DICHLOROETHENE  | ND                | 5             | 1.5           |
| TRANS-1,3-DICHLOROPROPENE | ND                | 5             | .45           |
| TRICHLOROETHENE           | ND                | 5             | .9            |
| VINYL ACETATE             | ND                | 50            | 6.2           |
| VINYL CHLORIDE            | ND                | 5             | 1.7           |
| XYLENES                   | ND                | 5             | 2.4           |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 99         | 62-139   |
| TOLUENE-D8            | 97         | 75-125   |
| BROMOFLUOROBENZENE    | 93         | 75-125   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

METHOD 5030A/B260A  
VOLATILE ORGANICS BY GC/MS

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=====
Client      : IT CORPORATION           Date Collected: NA
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/22/99
Batch No.  : 99L066                   Date Extracted: 12/22/99 15:04
Sample ID  : MBLK1W                    Date Analyzed: 12/22/99 15:04
Lab Samp ID: VOL1502Q                  Dilution Factor: 1
Lab File ID: RLP212                    Matrix          : WATER
Ext Btch ID: VOL1502                    % Moisture     : NA
Calib. Ref.: RLP208                     Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/L) | PRL<br>(ug/L) | MDL<br>(ug/L) |
|---------------------------|-------------------|---------------|---------------|
| 1,1,1-TRICHLOROETHANE     | ND                | 5             | 1.1           |
| 1,1,2,2-TETRACHLOROETHANE | ND                | 5             | .49           |
| 1,1,2-TRICHLOROETHANE     | ND                | 5             | .52           |
| 1,1-DICHLOROETHANE        | ND                | 5             | 1.2           |
| 1,1-DICHLOROETHENE        | ND                | 5             | .2            |
| 1,2-DICHLOROETHANE        | ND                | 5             | .58           |
| 1,2-DICHLOROPROPANE       | ND                | 5             | .53           |
| 2-BUTANONE                | ND                | 50            | 7.9           |
| 2-CHLOROETHYL VINYLETHER  | ND                | 50            | .83           |
| 2-HEXANONE                | ND                | 50            | .1            |
| 4-METHYL-2-PENTANONE      | ND                | 50            | .1            |
| ACETONE                   | ND                | 50            | 10            |
| BENZENE                   | ND                | 5             | .85           |
| BROMODICHLOROMETHANE      | ND                | 5             | .33           |
| BROMOFORM                 | ND                | 5             | .29           |
| BROMOMETHANE              | ND                | 5             | 1.5           |
| CARBON DISULFIDE          | ND                | 5             | 1.3           |
| CARBON TETRACHLORIDE      | ND                | 5             | 1.3           |
| CHLORO BENZENE            | ND                | 5             | .68           |
| CHLOROETHANE              | ND                | 5             | 2.9           |
| CHLOROFORM                | ND                | 5             | .85           |
| CHLOROMETHANE             | ND                | 5             | 1.7           |
| CIS-1,2-DICHLOROETHENE    | ND                | 5             | .97           |
| CIS-1,3-DICHLOROPROPENE   | ND                | 5             | .47           |
| BROMOCHLOROMETHANE        | ND                | 5             | .29           |
| ETHYLBENZENE              | ND                | 5             | .72           |
| MTBE                      | ND                | 10            | .96           |
| METHYLENE CHLORIDE        | 3.8J              | 5             | 1.8           |
| STYRENE                   | ND                | 5             | .58           |
| TETRACHLOROETHENE         | ND                | 5             | 1.2           |
| TOLUENE                   | ND                | 5             | .92           |
| TRANS-1,2-DICHLOROETHENE  | ND                | 5             | 1.5           |
| TRANS-1,3-DICHLOROPROPENE | ND                | 5             | .45           |
| TRICHLOROETHENE           | ND                | 5             | .9            |
| VINYL ACETATE             | ND                | 50            | 6.2           |
| VINYL CHLORIDE            | ND                | 5             | 1.7           |
| XYLENES                   | ND                | 5             | 2.4           |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 98         | 62-139   |
| TOLUENE-D8            | 98         | 75-125   |
| BROMOFLUOROBENZENE    | 96         | 75-125   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD 5030A/8260A

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 1  
SAMPLE ID: MBLK1W  
LAB SAMP ID: VOL1502Q VOL1502L VOL1502C  
LAB FILE ID: RLP212 RLP209 RLP210  
DATE EXTRACTED: 12/22/9915:04 12/22/9913:20 12/22/9913:54 DATE COLLECTED: NA  
DATE ANALYZED: 12/22/9915:04 12/22/9913:20 12/22/9913:54 DATE RECEIVED: 12/22/99  
PREP. BATCH: VOL1502 VOL1502 VOL1502  
CALIB. REF: RLP208 RLP208 RLP208

ACCESSION:

| PARAMETER          | BLNK RSLT<br>(ug/L) | SPIKE AMT<br>(ug/L) | BS RSLT<br>(ug/L) | BS<br>% REC | SPIKE AMT<br>(ug/L) | BSD RSLT<br>(ug/L) | BSD<br>% REC | RPD<br>( % ) | QC LIMIT<br>( % ) | MAX RPD<br>( % ) |
|--------------------|---------------------|---------------------|-------------------|-------------|---------------------|--------------------|--------------|--------------|-------------------|------------------|
| 1,1-Dichloroethene | ND                  | 20                  | 20.5              | 102         | 20                  | 20.8               | 104          | 1            | 75-125            | 20               |
| Benzene            | ND                  | 20                  | 20                | 100         | 20                  | 20                 | 100          | 0            | 75-125            | 20               |
| Chlorobenzene      | ND                  | 20                  | 20.3              | 102         | 20                  | 20.4               | 102          | 0            | 75-125            | 20               |
| Toluene            | ND                  | 20                  | 19.9              | 99          | 20                  | 20.3               | 101          | 2            | 74-125            | 20               |
| Trichloroethene    | ND                  | 20                  | 19.7              | 99          | 20                  | 19.9               | 99           | 1            | 71-125            | 20               |

| SURROGATE PARAMETER   | SPIKE AMT<br>(ug/L) | BS RSLT<br>(ug/L) | BS<br>% REC | SPIKE AMT<br>(ug/L) | BSD RSLT<br>(ug/L) | BSD<br>% REC | QC LIMIT<br>( % ) |
|-----------------------|---------------------|-------------------|-------------|---------------------|--------------------|--------------|-------------------|
| 1,2-Dichloroethane-d4 | 50                  | 49.7              | 99          | 50                  | 49.1               | 98           | 62-139            |
| Toluene-d8            | 50                  | 48.6              | 97          | 50                  | 48.4               | 97           | 75-125            |
| Bromofluorobenzene    | 50                  | 48.2              | 96          | 50                  | 47.2               | 94           | 75-125            |

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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=====
Client      : IT CORPORATION           Date Collected: NA
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/22/99
Batch No.  : 99L066                   Date Extracted: 12/22/99 15:04
Sample ID  : MBLK1S                    Date Analyzed: 12/22/99 15:04
Lab Samp ID: VOL1502Q                  Dilution Factor: 1
Lab File ID: RLP212                    Matrix          : SOIL
Ext Btch ID: VOL1502                    % Moisture      : NA
Calib. Ref.: RLP208                     Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5              | .33            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5              | .33            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5              | .23            |
| 1,1-DICHLOROETHANE        | ND                 | 5              | .3             |
| 1,1-DICHLOROETHENE        | ND                 | 5              | .54            |
| 1,2-DICHLOROETHANE        | ND                 | 5              | .33            |
| 1,2-DICHLOROPROPANE       | ND                 | 5              | .38            |
| 2-BUTANONE                | ND                 | 50             | 5.1            |
| 2-CHLOROETHYLVINYLETHER   | ND                 | 50             | .17            |
| 2-HEXANONE                | ND                 | 50             | 1.2            |
| 4-METHYL-2-PENTANONE      | ND                 | 50             | 1.1            |
| ACETONE                   | ND                 | 50             | 4.1            |
| BENZENE                   | ND                 | 5              | .25            |
| BROMODICHLOROMETHANE      | ND                 | 5              | .26            |
| BROMOFORM                 | ND                 | 5              | .28            |
| BROMOMETHANE              | ND                 | 5              | .64            |
| CARBON DISULFIDE          | ND                 | 5              | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5              | .79            |
| CHLOROBENZENE             | ND                 | 5              | .2             |
| CHLOROETHANE              | ND                 | 5              | 1.8            |
| CHLOROFORM                | ND                 | 5              | .42            |
| CHLOROMETHANE             | ND                 | 5              | 2.1            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5              | .29            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5              | .22            |
| BROMOCHLOROMETHANE        | ND                 | 5              | .079           |
| ETHYLBENZENE              | ND                 | 5              | .39            |
| MTBE                      | ND                 | 10             | .37            |
| METHYLENE CHLORIDE        | 3.8J               | 5              | .41            |
| STYRENE                   | ND                 | 5              | .44            |
| TETRACHLOROETHENE         | ND                 | 5              | .24            |
| TOLUENE                   | ND                 | 5              | .31            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5              | .29            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5              | .67            |
| TRICHLOROETHENE           | ND                 | 5              | .25            |
| VINYL ACETATE             | ND                 | 50             | .72            |
| VINYL CHLORIDE            | ND                 | 5              | 1              |
| XYLENES                   | ND                 | 5              | 1.1            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 98         | 52-149   |
| TOLUENE-DB            | 98         | 65-135   |
| BROMOFLUOROBENZENE    | 96         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD 5030A/8260A

MATRIX: SOIL % MOISTURE: NA  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: MBLK1S  
LAB SAMP ID: VOL1502Q VOL1502L VOL1502C  
LAB FILE ID: RLP212 RLP209 RLP210  
DATE EXTRACTED: 12/22/9915:04 12/22/9913:20 12/22/9913:54 DATE COLLECTED: NA  
DATE ANALYZED: 12/22/9915:04 12/22/9913:20 12/22/9913:54 DATE RECEIVED: 12/22/99  
PREP. BATCH: VOL1702 VOL1702 VOL1702  
CALIB. REF: RLP208 RLP208 RLP208

ACCESSION:

| PARAMETER          | BLNK RSLT<br>(ug/kg) | SPIKE AMT<br>(ug/kg) | BS RSLT<br>(ug/kg) | BS<br>% REC | SPIKE AMT<br>(ug/kg) | BSD RSLT<br>(ug/kg) | BSD<br>% REC | RPD<br>( % ) | QC LIMIT<br>( % ) | MAX RPD<br>( % ) |
|--------------------|----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|--------------|-------------------|------------------|
| 1,1-Dichloroethene | ND                   | 20                   | 20.5               | 102         | 20                   | 20.8                | 104          | 1            | 65-135            | 30               |
| Benzene            | ND                   | 20                   | 20                 | 100         | 20                   | 20                  | 100          | 0            | 65-135            | 30               |
| Chlorobenzene      | ND                   | 20                   | 20.3               | 102         | 20                   | 20.4                | 102          | 0            | 65-135            | 30               |
| Toluene            | ND                   | 20                   | 19.9               | 99          | 20                   | 20.3                | 101          | 2            | 64-135            | 30               |
| Trichloroethene    | ND                   | 20                   | 19.7               | 99          | 20                   | 19.9                | 99           | 1            | 61-135            | 30               |

| SURROGATE PARAMETER   | SPIKE AMT<br>(ug/kg) | BS RSLT<br>(ug/kg) | BS<br>% REC | SPIKE AMT<br>(ug/kg) | BSD RSLT<br>(ug/kg) | BSD<br>% REC | QC LIMIT<br>( % ) |
|-----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-------------------|
| 1,2-Dichloroethane-d4 | 50                   | 49.7               | 99          | 50                   | 49.1                | 98           | 52-149            |
| Toluene-d8            | 50                   | 48.6               | 97          | 50                   | 48.4                | 97           | 65-135            |
| Bromofluorobenzene    | 50                   | 48.2               | 96          | 50                   | 47.2                | 94           | 65-135            |

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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=====
Client      : IT CORPORATION           Date Collected: NA
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/23/99
Batch No.  : 99L066                  Date Extracted: 12/23/99 03:30
Sample ID  : MBLK2S                   Date Analyzed: 12/23/99 03:30
Lab Samp ID: VOL1602Q                 Dilution Factor: 1
Lab File ID: RLP234                   Matrix          : SOIL
Ext Btch ID: VOL1602                  % Moisture      : NA
Calib. Ref.: RLP230                   Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5              | .33            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5              | .33            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5              | .23            |
| 1,1-DICHLOROETHANE        | ND                 | 5              | .3             |
| 1,1-DICHLOROETHENE        | ND                 | 5              | .54            |
| 1,2-DICHLOROETHANE        | ND                 | 5              | .33            |
| 1,2-DICHLOROPROPANE       | ND                 | 5              | .38            |
| 2-BUTANONE                | ND                 | 50             | 5.1            |
| 2-CHLOROETHYLVINYLETHER   | ND                 | 50             | .17            |
| 2-HEXANONE                | ND                 | 50             | 1.2            |
| 4-METHYL-2-PENTANONE      | ND                 | 50             | 1.1            |
| ACETONE                   | ND                 | 50             | 4.1            |
| BENZENE                   | ND                 | 5              | .25            |
| BROMODICHLOROMETHANE      | ND                 | 5              | .26            |
| BROMOFORM                 | ND                 | 5              | .28            |
| BROMOMETHANE              | ND                 | 5              | .64            |
| CARBON DISULFIDE          | ND                 | 5              | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5              | .79            |
| CHLOROETHANE              | ND                 | 5              | .2             |
| CHLOROETHENE              | ND                 | 5              | 1.8            |
| CHLOROFORM                | ND                 | 5              | .42            |
| CHLOROMETHANE             | ND                 | 5              | 2.1            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5              | .29            |
| 1,3-DICHLOROPROPENE       | ND                 | 5              | .22            |
| BROMOCHLOROMETHANE        | ND                 | 5              | .079           |
| ETHYLBENZENE              | ND                 | 5              | .39            |
| MTBE                      | ND                 | 10             | .37            |
| METHYLENE CHLORIDE        | 3.9J               | 5              | .41            |
| STYRENE                   | ND                 | 5              | .44            |
| TETRACHLOROETHENE         | ND                 | 5              | .24            |
| TOLUENE                   | ND                 | 5              | .31            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5              | .29            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5              | .67            |
| TRICHLOROETHENE           | ND                 | 5              | .25            |
| VINYL ACETATE             | ND                 | 50             | .72            |
| VINYL CHLORIDE            | ND                 | 5              | 1              |
| XYLENES                   | ND                 | 5              | 1.1            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 98         | 52-149   |
| TOLUENE-DB            | 91         | 65-135   |
| BROMOFLUOROBENZENE    | 87         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD 5030A/8260A

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MATRIX: SOIL % MOISTURE: NA  
DILUTION FACTOR: 1 1  
SAMPLE ID: MBLK2S  
LAB SAMP ID: VOL1602Q VOL1602L VOL1602C  
LAB FILE ID: RLP234 RLP231 RLP232  
DATE EXTRACTED: 12/23/9903:30 12/23/9901:50 12/23/9902:23 DATE COLLECTED: NA  
DATE ANALYZED: 12/23/9903:30 12/23/9901:50 12/23/9902:23 DATE RECEIVED: 12/23/99  
PREP. BATCH: VOL1702 VOL1702 VOL1702  
CALIB. REF: RLP230 RLP230 RLP230

ACCESSION:

| PARAMETER          | BLNK RSLT<br>(ug/kg) | SPIKE AMT<br>(ug/kg) | BS RSLT<br>(ug/kg) | BS<br>% REC | SPIKE AMT<br>(ug/kg) | BSD RSLT<br>(ug/kg) | BSD<br>% REC | RPD<br>( % ) | QC LIMIT<br>( % ) | MAX RPD<br>( % ) |
|--------------------|----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|--------------|-------------------|------------------|
| 1,1-Dichloroethene | ND                   | 20                   | 20.8               | 104         | 20                   | 21.4                | 107          | 3            | 65-135            | 30               |
| Benzene            | ND                   | 20                   | 19.2               | 96          | 20                   | 20                  | 100          | 4            | 65-135            | 30               |
| Chlorobenzene      | ND                   | 20                   | 20.4               | 102         | 20                   | 20.4                | 102          | 0            | 65-135            | 30               |
| Toluene            | ND                   | 20                   | 18.8               | 94          | 20                   | 19.7                | 99           | 5            | 64-135            | 30               |
| Trichloroethene    | ND                   | 20                   | 21                 | 105         | 20                   | 20.9                | 105          | 0            | 61-135            | 30               |

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| SURROGATE PARAMETER   | SPIKE AMT<br>(ug/kg) | BS RSLT<br>(ug/kg) | BS<br>% REC | SPIKE AMT<br>(ug/kg) | BSD RSLT<br>(ug/kg) | BSD<br>% REC | QC LIMIT<br>( % ) |
|-----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-------------------|
| 1,2-Dichloroethane-d4 | 50                   | 50.9               | 102         | 50                   | 52.3                | 105          | 52-149            |
| Toluene-d8            | 50                   | 45.7               | 91          | 50                   | 47.9                | 96           | 65-135            |
| Bromofluorobenzene    | 50                   | 43.9               | 88          | 50                   | 45.5                | 91           | 65-135            |

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SAMP NO.: 99L066  
METHOD: METHOD 5030A/8260A

MATRIX: SOIL % MOISTURE: 2.9  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: 18609-2524  
LAB SAMP ID: L066-12 L066-12M L066-12S  
LAB FILE ID: RLP245 RLP243 RLP244  
DATE EXTRACTED: 12/23/9909:50 12/23/9908:32 12/23/9909:16 DATE COLLECTED: 12/10/99  
DATE ANALYZED: 12/23/9909:50 12/23/9908:32 12/23/9909:16 DATE RECEIVED: 12/10/99  
PREP. BATCH: VOL1702 VOL1702 VOL1702  
CALIB. REF: RLP230 RLP230 RLP230

ACCESSION:

| PARAMETER          | SAMPL RSLT<br>(ug/kg) | SPIKE AMT<br>(ug/kg) | MS RSLT<br>(ug/kg) | MS<br>% REC | SPIKE AMT<br>(ug/kg) | MSD RSLT<br>(ug/kg) | MSD<br>% REC | RPD<br>(%) | QC LIMIT<br>(%) | MAX RPD<br>(%) |
|--------------------|-----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|------------|-----------------|----------------|
| 1,1-Dichloroethene | ND                    | 51.5                 | 53.6               | 104         | 51.5                 | 52.2                | 101          | 3          | 65-135          | 30             |
| Benzene            | ND                    | 51.5                 | 49.5               | 96          | 51.5                 | 49.3                | 96           | 1          | 65-135          | 30             |
| Chlorobenzene      | ND                    | 51.5                 | 49.7               | 97          | 51.5                 | 50.8                | 99           | 2          | 65-135          | 30             |
| Toluene            | ND                    | 51.5                 | 49                 | 95          | 51.5                 | 50.1                | 97           | 2          | 64-135          | 30             |
| Trichloroethene    | ND                    | 51.5                 | 52.9               | 103         | 51.5                 | 51.3                | 100          | 3          | 61-135          | 30             |

| SURROGATE PARAMETER   | SPIKE AMT<br>(ug/kg) | MS RSLT<br>(ug/kg) | MS<br>% REC | SPIKE AMT<br>(ug/kg) | MSD RSLT<br>(ug/kg) | MSD<br>% REC | QC LIMIT<br>(%) |
|-----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-----------------|
| 1,2-Dichloroethane-d4 | 51.5                 | 53.1               | 103         | 51.5                 | 51.7                | 100          | 52-149          |
| Toluene-d8            | 51.5                 | 50.3               | 98          | 51.5                 | 50.4                | 98           | 65-135          |
| Bromofluorobenzene    | 51.5                 | 46.3               | 90          | 51.5                 | 46.4                | 90           | 65-135          |

Out side of QC Limit

METHOD 5030A/8260A  
VOLATILE ORGANICS BY GC/MS

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Client   : IT CORPORATION           Date Collected: NA
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/23/99
Batch No. : 99L066                 Date Extracted: 12/23/99 17:15
Sample ID: MBLK3S                   Date Analyzed: 12/23/99 17:15
Lab Samp ID: VOL1702B               Dilution Factor: 1
Lab File ID: RLP255                 Matrix          : SOIL
Ext Btch ID: VOL1702                % Moisture      : NA
Calib. Ref.: RLP252                 Instrument ID   : T-002
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| PARAMETERS                | RESULTS<br>(ug/kg) | PRL<br>(ug/kg) | MDL<br>(ug/kg) |
|---------------------------|--------------------|----------------|----------------|
| 1,1,1-TRICHLOROETHANE     | ND                 | 5              | .33            |
| 1,1,2,2-TETRACHLOROETHANE | ND                 | 5              | .33            |
| 1,1,2-TRICHLOROETHANE     | ND                 | 5              | .23            |
| 1,1-DICHLOROETHANE        | ND                 | 5              | .3             |
| 1,1-DICHLOROETHENE        | ND                 | 5              | .54            |
| 1,2-DICHLOROETHANE        | ND                 | 5              | .33            |
| 1,2-DICHLOROPROPANE       | ND                 | 5              | .38            |
| 2-BUTANONE                | ND                 | 50             | 5.1            |
| 2-CHLOROETHYL VINYLETHER  | ND                 | 50             | .17            |
| 2-HEXANONE                | ND                 | 50             | 1.2            |
| 4-METHYL-2-PENTANONE      | ND                 | 50             | 1.1            |
| ACETONE                   | ND                 | 50             | 4.1            |
| BENZENE                   | ND                 | 5              | .25            |
| BROMODICHLOROMETHANE      | ND                 | 5              | .26            |
| BROMOFORM                 | ND                 | 5              | .28            |
| BROMOMETHANE              | ND                 | 5              | .64            |
| CARBON DISULFIDE          | ND                 | 5              | .13            |
| CARBON TETRACHLORIDE      | ND                 | 5              | .79            |
| CHLOROETHANE              | ND                 | 5              | .2             |
| CHLOROETHENE              | ND                 | 5              | 1.8            |
| CHLOROFORM                | ND                 | 5              | .42            |
| CHLOROMETHANE             | ND                 | 5              | 2.1            |
| CIS-1,2-DICHLOROETHENE    | ND                 | 5              | .29            |
| CIS-1,3-DICHLOROPROPENE   | ND                 | 5              | .22            |
| DIBROMOCHLOROMETHANE      | ND                 | 5              | .079           |
| ETHYLBENZENE              | ND                 | 5              | .39            |
| MTBE                      | ND                 | 10             | .37            |
| METHYLENE CHLORIDE        | ND                 | 5              | .41            |
| STYRENE                   | ND                 | 5              | .44            |
| TETRACHLOROETHENE         | ND                 | 5              | .24            |
| TOLUENE                   | ND                 | 5              | .31            |
| TRANS-1,2-DICHLOROETHENE  | ND                 | 5              | .29            |
| TRANS-1,3-DICHLOROPROPENE | ND                 | 5              | .67            |
| TRICHLOROETHENE           | ND                 | 5              | .25            |
| VINYL ACETATE             | ND                 | 50             | .72            |
| VINYL CHLORIDE            | ND                 | 5              | 1              |
| XYLENES                   | ND                 | 5              | 1.1            |

| SURROGATE PARAMETERS  | % RECOVERY | QC LIMIT |
|-----------------------|------------|----------|
| 1,2-DICHLOROETHANE-D4 | 94         | 52-149   |
| TOLUENE-D8            | 93         | 65-135   |
| BROMOFLUOROBENZENE    | 89         | 65-135   |

PRL: Project Reporting Limit  
\* : Out side of QC Limit  
J : An estimated value between PRL and MDL  
E : Value exceed the upper level of the initial calibration  
B : Found in the associated blank  
D : Value from dilution analysis

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
H NO.: 99L066  
METHOD: METHOD 5030A/8260A

MATRIX: SOIL % MOISTURE: NA  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: MBLK3S  
LAB SAMP ID: VOL1702B VOL1702L VOL1702C  
LAB FILE ID: RLP255 RLP253 RLP254  
DATE EXTRACTED: 12/23/9917:15 12/23/9916:08 12/23/9916:41 DATE COLLECTED: NA  
DATE ANALYZED: 12/23/9917:15 12/23/9916:08 12/23/9916:41 DATE RECEIVED: 12/23/99  
PREP. BATCH: VOL1702 VOL1702 VOL1702  
CALIB. REF: RLP252 RLP252 RLP252

ACCESSION:

| PARAMETER          | BLNK RSLT<br>(ug/kg) | SPIKE AMT<br>(ug/kg) | BS RSLT<br>(ug/kg) | BS<br>% REC | SPIKE AMT<br>(ug/kg) | BSD RSLT<br>(ug/kg) | BSD<br>% REC | RPD<br>( % ) | QC LIMIT<br>( % ) | MAX RPD<br>( % ) |
|--------------------|----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|--------------|-------------------|------------------|
| 1,1-Dichloroethene | ND                   | 20                   | 20.8               | 104         | 20                   | 20.3                | 101          | 3            | 65-135            | 30               |
| Benzene            | ND                   | 20                   | 20.4               | 102         | 20                   | 20.1                | 100          | 1            | 65-135            | 30               |
| Chlorobenzene      | ND                   | 20                   | 20.9               | 104         | 20                   | 20.2                | 101          | 4            | 65-135            | 30               |
| Toluene            | ND                   | 20                   | 20.3               | 101         | 20                   | 19.8                | 99           | 2            | 64-135            | 30               |
| Trichloroethenc    | ND                   | 20                   | 19.8               | 99          | 20                   | 19.3                | 96           | 3            | 61-135            | 30               |

| SURROGATE PARAMETER   | SPIKE AMT<br>(ug/kg) | BS RSLT<br>(ug/kg) | BS<br>% REC | SPIKE AMT<br>(ug/kg) | BSD RSLT<br>(ug/kg) | BSD<br>% REC | QC LIMIT<br>( % ) |
|-----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-------------------|
| 1,2-Dichloroethane-d4 | 50                   | 49.9               | 100         | 50                   | 48.1                | 96           | 52-149            |
| Toluene-d8            | 50                   | 48.1               | 96          | 50                   | 47                  | 94           | 65-135            |
| Bromofluorobenzene    | 50                   | 46.4               | 93          | 50                   | 44.9                | 90           | 65-135            |

METHOD 5030A/M8015  
 TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

Client : IT CORPORATION  
 Project : MCAS EL TORO/18609/D.O. 70  
 Batch No. : 99L066

Matrix : WATER  
 Instrument ID : GCT039

| SAMPLE ID     | EMAX<br>SAMPLE ID | RESULTS<br>(mg/L) | SURR<br>(%) | DLF | MOIST | PRL<br>(mg/L) | MDL<br>(mg/L) | Analysis<br>DATETIME | Extraction<br>DATETIME | LFID    | CAL REF | PREP BATCH | Collection<br>DATETIME | Received<br>DATETIME |
|---------------|-------------------|-------------------|-------------|-----|-------|---------------|---------------|----------------------|------------------------|---------|---------|------------|------------------------|----------------------|
| MBLK1W        | VAL2539B          | ND                | 80          | 1   | NA    | .1            | .018          | 12/15/9914:59        | 12/15/9914:59          | EL10-3  | EL10-2  | VAL2539    | NA                     | NA                   |
| LCS1W         | VAL2539L          | .96               | 97          | 1   | NA    | .1            | .018          | 12/15/9915:35        | 12/15/9915:35          | EL10-4  | EL10-2  | VAL2539    | NA                     | NA                   |
| LCD1W         | VAL2539C          | 1                 | 85          | 1   | NA    | .1            | .018          | 12/15/9916:10        | 12/15/9916:10          | EL10-5  | EL10-2  | VAL2539    | NA                     | NA                   |
| 18609-2513    | L066-01           | ND                | 87          | 1   | NA    | .1            | .018          | 12/15/9917:22        | 12/15/9917:22          | EL10-7  | EL10-2  | VAL2539    | 12/10/99               | 12/10/99             |
| 18609-2525    | L066-13           | ND                | 83          | 1   | NA    | .1            | .018          | 12/15/9917:57        | 12/15/9917:57          | EL10-8  | EL10-2  | VAL2539    | 12/10/99               | 12/10/99             |
| 18609-2525MS  | L066-13M          | 1.2               | 91          | 1   | NA    | .1            | .018          | 12/15/9918:32        | 12/15/9918:32          | EL10-9  | EL10-2  | VAL2539    | 12/10/99               | 12/10/99             |
| 18609-2525MSD | L066-13S          | 1                 | 90          | 1   | NA    | .1            | .018          | 12/15/9919:08        | 12/15/9919:08          | EL10-10 | EL10-2  | VAL2539    | 12/10/99               | 12/10/99             |

SURR : Bromofluorobenzene

PRL : Reporting Limit

E : Value exceed the upper level of the initial calibration

D : Value from dilution

4004

METHOD 5030A/M8015  
TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

Client : IT CORPORATION  
Project : MCAS EL TORO/18609/D.O. 70  
Batch No. : 99L066

Matrix : SOIL  
Instrument ID : GCT039

| SAMPLE ID     | EMAX<br>SAMPLE ID | RESULTS<br>(mg/kg) | SURR<br>(%) | DLF | MOIST | PRL<br>(mg/kg) | MDL<br>(mg/kg) | Analysis<br>DATETIME | Extraction<br>DATETIME | LFID    | CAL REF | PREP BATCH | Collection<br>DATETIME | Received<br>DATETIME |
|---------------|-------------------|--------------------|-------------|-----|-------|----------------|----------------|----------------------|------------------------|---------|---------|------------|------------------------|----------------------|
| MBLK1S        | VAL2739B          | ND                 | 92          | 1   | NA    | 1              | .088           | 12/16/9922:09        | 12/16/9922:09          | EL11-3  | EL11-2  | VAL2739    | NA                     | NA                   |
| LCS1S         | VAL2739L          | 5.9                | 111         | 1   | NA    | 1              | .088           | 12/16/9922:44        | 12/16/9922:44          | EL11-4  | EL11-2  | VAL2739    | NA                     | NA                   |
| LCD1S         | VAL2739C          | 6                  | 107         | 1   | NA    | 1              | .088           | 12/16/9923:19        | 12/16/9923:19          | EL11-5  | EL11-2  | VAL2739    | NA                     | NA                   |
| MBLK2S        | VAL2839B          | ND                 | 97          | 1   | NA    | 1              | .088           | 12/17/9913:55        | 12/17/9913:55          | EL11-30 | EL11-26 | VAL2839    | NA                     | NA                   |
| LCS2S         | VAL2839L          | 5.7                | 111         | 1   | NA    | 1              | .088           | 12/17/9914:31        | 12/17/9914:31          | EL11-31 | EL11-26 | VAL2839    | NA                     | NA                   |
| LCD2S         | VAL2839C          | 6                  | 116         | 1   | NA    | 1              | .088           | 12/17/9915:07        | 12/17/9915:07          | EL11-32 | EL11-26 | VAL2839    | NA                     | NA                   |
| 18609-2514    | L066-02           | ND                 | 88          | 1   | 13.6  | 1.2            | .1             | 12/17/9912:08        | 12/17/9912:08          | EL11-27 | EL11-26 | VAL2739    | 12/10/99               | 12/10/99             |
| 18609-2515    | L066-03           | ND                 | 97          | 1   | 12.1  | 1.1            | .1             | 12/17/9912:43        | 12/17/9912:43          | EL11-28 | EL11-26 | VAL2739    | 12/10/99               | 12/10/99             |
| 18609-2516    | L066-04           | ND                 | 97          | 1   | 1.8   | 1              | .09            | 12/17/9915:41        | 12/17/9915:41          | EL11-33 | EL11-26 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2516MS  | L066-04M          | 6.5                | 110         | 1   | 1.8   | 1              | .09            | 12/17/9916:17        | 12/17/9916:17          | EL11-34 | EL11-26 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2516MSD | L066-04S          | 6.3                | 109         | 1   | 1.8   | 1              | .09            | 12/17/9916:52        | 12/17/9916:52          | EL11-35 | EL11-26 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2517    | L066-05           | ND                 | 96          | 1   | 18.1  | 1.2            | .11            | 12/17/9913:19        | 12/17/9913:19          | EL11-29 | EL11-26 | VAL2739    | 12/10/99               | 12/10/99             |
| 18609-2518    | L066-06           | ND                 | 95          | 1   | 4.4   | 1              | .092           | 12/17/9917:28        | 12/17/9917:28          | EL11-36 | EL11-26 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2519    | L066-07           | ND                 | 97          | 1   | 9.5   | 1.1            | .097           | 12/17/9919:15        | 12/17/9919:15          | EL11-39 | EL11-38 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2520    | L066-08           | ND                 | 95          | 1   | 10.4  | 1.1            | .098           | 12/17/9919:50        | 12/17/9919:50          | EL11-40 | EL11-38 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2521    | L066-09           | ND                 | 95          | 1   | 5.7   | 1.1            | .093           | 12/17/9920:26        | 12/17/9920:26          | EL11-41 | EL11-38 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2522    | L066-10           | ND                 | 96          | 1   | 9.8   | 1.1            | .098           | 12/17/9921:02        | 12/17/9921:02          | EL11-42 | EL11-38 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2523    | L066-11           | ND                 | 94          | 1   | 13.1  | 1.2            | .1             | 12/17/9921:37        | 12/17/9921:37          | EL11-43 | EL11-38 | VAL2839    | 12/10/99               | 12/10/99             |
| 18609-2524    | L066-12           | ND                 | 95          | 1   | 2.9   | 1              | .091           | 12/17/9922:12        | 12/17/9922:12          | EL11-44 | EL11-38 | VAL2839    | 12/10/99               | 12/10/99             |

SURR : Bromofluorobenzene

PRL : Reporting Limit

E : Value exceed the upper level of the initial calibration

D : Value from dilution

4005

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 5030A/M8015

MATRIX: WATER % MOISTURE: NA  
DILTN FACTR: 1 1 1  
SAMPLE ID: MBLK1W  
CONTROL NO.: VAL2539B VAL2539L VAL2539C  
LAB FILE ID: EL10-3 EL10-4 EL10-5  
DATIME EXTRCTD: 12/15/9914:59 12/15/9915:35 12/15/9916:10 DATE COLLECTED: NA  
DATIME ANALYZD: 12/15/9914:59 12/15/9915:35 12/15/9916:10 DATE RECEIVED:  
PREP. BATCH: VAL2539 VAL2539 VAL2539  
CALIB. REF: EL10-2 EL10-2 EL10-2

ACCESSION:

| PARAMETER | BLNK RSLT<br>mg/L | SPIKE AMT<br>mg/L | BS RSLT<br>mg/L | BS<br>% REC | SPIKE AMT<br>mg/L | BSD RSLT<br>mg/L | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|-------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|----------|---------------|--------------|
| Gasoline  | ND                | 1.1               | .965            | 88          | 1.1               | 1.04             | 94           | 7        | 67-136        | 30           |

| SURROGATE PARAMETER | SPIKE AMT<br>mg/L | BS RSLT<br>mg/L | BS<br>% REC | SPIKE AMT<br>mg/L | BSD RSLT<br>mg/L | BSD<br>% REC | QC LIMIT<br>% |
|---------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|---------------|
| Bromofluorobenzene  | .05               | .0483           | 97          | .05               | .0423            | 85           | 65-135        |

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
 OBJECT: MCAS EL TORO/18609/D.O. 70  
 BATCH NO.: 99L066  
 METHOD: METHOD 5030A/M8015

MATRIX: WATER % MOISTURE: NA  
 DILUTION FACTOR: 1 1 1  
 SAMPLE ID: 18609-2525  
 LAB SAMP ID: L066-13 L066-13M L066-13S  
 LAB FILE ID: EL10-8 EL10-9 EL10-10  
 DATE EXTRACTED: 12/15/9917:57 12/15/9918:32 12/15/9919:08 DATE COLLECTED: 12/10/99  
 DATE ANALYZED: 12/15/9917:57 12/15/9918:32 12/15/9919:08 DATE RECEIVED: 12/10/99  
 PREP. BATCH: VAL2539 VAL2539 VAL2539  
 CALIB. REF: EL10-2 EL10-2 EL10-2

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/L) | SPIKE AMT<br>(mg/L) | MS RSLT<br>(mg/L) | MS<br>% REC | SPIKE AMT<br>(mg/L) | MSD RSLT<br>(mg/L) | MSD<br>% REC | RPD<br>(%) | QC LIMIT<br>(%) | MAX RPD<br>(%) |
|-----------|---------------------|---------------------|-------------------|-------------|---------------------|--------------------|--------------|------------|-----------------|----------------|
| Gasoline  | ND                  | 1.1                 | 1.24              | 113         | 1.1                 | 1.04               | 94           | 18         | 67-136          | 30             |

| PROBATE PARAMETER  | SPIKE AMT<br>(mg/L) | MS RSLT<br>(mg/L) | MS<br>% REC | SPIKE AMT<br>(mg/L) | MSD RSLT<br>(mg/L) | MSD<br>% REC | QC LIMIT<br>(%) |
|--------------------|---------------------|-------------------|-------------|---------------------|--------------------|--------------|-----------------|
| Bromofluorobenzene | .05                 | .0455             | 91          | .05                 | .045               | 90           | 65-135          |

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 5030A/M8015

=====

MATRIX: SOIL % MOISTURE: NA  
DILTN FACTR: 1 1 1  
SAMPLE ID: MBLK1S  
CONTROL NO.: VAL2739B VAL2739L VAL2739C  
LAB FILE ID: EL11-3 EL11-4 EL11-5  
DATIME EXTRCTD: 12/16/9922:09 12/16/9922:44 12/16/9923:19 DATE COLLECTED: NA  
DATIME ANALYZD: 12/16/9922:09 12/16/9922:44 12/16/9923:19 DATE RECEIVED:  
PREP. BATCH: VAL2739 VAL2739 VAL2739  
CALIB. REF: EL11-2 EL11-2 EL11-2

ACCESSION:

| PARAMETER | BLNK RSLT<br>mg/kg | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|----------|---------------|--------------|
| Gasoline  | ND                 | 5.5                | 5.94             | 108         | 5.5                | 5.97              | 109          | 1        | 57-146        | 50           |

=====

| SURROGATE PARAMETER | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | QC LIMIT<br>% |
|---------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|---------------|
| Bromofluorobenzene  | .25                | .277             | 111         | .25                | .269              | 107          | 60-140        |

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
 PROJECT: MCAS EL TORO/18609/D.O. 70  
 SDG NO.: 99L066  
 METHOD: METHOD 5030A/M8015

MATRIX: SOIL % MOISTURE: NA  
 DILTN FACTR: 1 1 1  
 SAMPLE ID: MBLK2S  
 CONTROL NO.: VAL2839B VAL2839L VAL2839C  
 LAB FILE ID: EL11-30 EL11-31 EL11-32  
 DATIME EXTRACTD: 12/17/9913:55 12/17/9914:31 12/17/9915:07 DATE COLLECTED: NA  
 DATIME ANALYZD: 12/17/9913:55 12/17/9914:31 12/17/9915:07 DATE RECEIVED:  
 PREP. BATCH: VAL2839 VAL2839 VAL2839  
 CALIB. REF: EL11-26 EL11-26 EL11-26

ACCESSION:

| PARAMETER | BLNK RSLT<br>mg/kg | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|----------|---------------|--------------|
| Gasoline  | ND                 | 5.5                | 5.69             | 103         | 5.5                | 6.01              | 109          | 5        | 57-146        | 50           |

| SPROGATE PARAMETER | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | QC LIMIT<br>% |
|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|---------------|
| Bromofluorobenzene | .25                | .279             | 111         | .25                | .289              | 116          | 60-140        |

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD 5030A/M8015

=====

MATRIX: SOIL % MOISTURE: 1.8  
DILUTION FACTOR: 1 1  
SAMPLE ID: 18609-2516  
LAB SAMP ID: L066-04 L066-04M L066-04S  
LAB FILE ID: EL11-33 EL11-34 EL11-35  
DATE EXTRACTED: 12/17/9915:41 12/17/9916:17 12/17/9916:52 DATE COLLECTED: 12/10/99  
DATE ANALYZED: 12/17/9915:41 12/17/9916:17 12/17/9916:52 DATE RECEIVED: 12/10/99  
PREP. BATCH: VAL2839 VAL2839 VAL2839  
CALIB. REF: EL11-26 EL11-26 EL11-26

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/kg) | SPIKE AMT<br>(mg/kg) | MS RSLT<br>(mg/kg) | MS<br>% REC | SPIKE AMT<br>(mg/kg) | MSD RSLT<br>(mg/kg) | MSD<br>% REC | RPD<br>( % ) | QC LIMIT<br>( % ) | MAX RPD<br>( % ) |
|-----------|----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|--------------|-------------------|------------------|
| Gasoline  | ND                   | 5.6                  | 6.46               | 115         | 5.6                  | 6.26                | 112          | 3            | 57-146            | 50               |

=====

| SURROGATE PARAMETER | SPIKE AMT<br>(mg/kg) | MS RSLT<br>(mg/kg) | MS<br>% REC | SPIKE AMT<br>(mg/kg) | MSD RSLT<br>(mg/kg) | MSD<br>% REC | QC LIMIT<br>( % ) |
|---------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-------------------|
| Bromofluorobenzene  | .255                 | .279               | 110         | .255                 | .276                | 109          | 60-140            |

METHOD M8015  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : IT CORPORATION  
Project : MCAS EL TORO/18609/D.O. 70  
Batch No. : 99L066

Matrix : WATER  
Instrument ID : GCT043

| SAMPLE ID  | EMAX SAMPLE ID | RESULTS (mg/L) | SUR1 (%) | SUR2 (%) | DLF | MOIST | RL (mg/L) | MDL (mg/L) | Analysis DATETIME | Extraction DATETIME | LFID    | CAL REF | PREP BATCH | Collection DATETIME | Received DATETIME |
|------------|----------------|----------------|----------|----------|-----|-------|-----------|------------|-------------------|---------------------|---------|---------|------------|---------------------|-------------------|
| MBLK1W     | DSL020WB       | ND             | 99       | 88       | 1   | NA    | .1        | .038       | 12/22/9902:00     | 12/14/9914:00       | DL09-16 | DL09-14 | DSL020W    | NA                  | 12/14/99          |
| LCS1W      | DSL020WL       | 4.65           | 94       | 89       | 1   | NA    | .1        | .038       | 12/22/9902:39     | 12/14/9914:00       | DL09-17 | DL09-14 | DSL020W    | NA                  | 12/14/99          |
| LCD1W      | DSL020WC       | 5.05           | 97       | 90       | 1   | NA    | .1        | .038       | 12/22/9903:19     | 12/14/9914:00       | DL09-18 | DL09-14 | DSL020W    | NA                  | 12/14/99          |
| 18609-2525 | L066-13        | ND             | 102      | 84       | .98 | NA    | .098      | .037       | 12/22/9903:59     | 12/14/9914:00       | DL09-19 | DL09-14 | DSL020W    | 12/10/99            | 12/10/99          |

QC LIMIT : (SOIL) 60-140 55-150

QC LIMIT : (WATER) 65-135 60-145

SURR1 : Bromobenzene

SURR2 : Hexacosane

RL : Reporting Limit

H-C RANGE: C7-C18 = JP-5

C6-C12 = Gas

C10-C24 = Diesel

C18-C34 = Motor Oil

E : Value exceed the upper level of the initial calibration

D : Value from dilution

5004

METHOD M8015  
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : IT CORPORATION  
Project : MCAS EL TORO/18609/D.O. 70  
Batch No. : 99L066

Matrix : SOIL  
Instrument ID : GCT043

| SAMPLE ID     | EMAX<br>SAMPLE ID | RESULTS<br>(mg/kg) | SUR1<br>(%) | SUR2<br>(%) | DLF | MOIST | RL<br>(mg/kg) | MDL<br>(mg/kg) | Analysis<br>DATETIME | Extraction<br>DATETIME | LFID    | CAL REF | PREP BATCH | Collection<br>DATETIME | Received<br>DATETIME |
|---------------|-------------------|--------------------|-------------|-------------|-----|-------|---------------|----------------|----------------------|------------------------|---------|---------|------------|------------------------|----------------------|
| MBLK1S        | DSL019SB          | ND                 | 98          | 72          | 1   | NA    | 10            | 2.1            | 12/22/9904:38        | 12/13/9915:00          | DL09-20 | DL09-14 | DSL019S    | NA                     | 12/13/99             |
| LCS1S         | DSL019SL          | 443                | 100         | 73          | 1   | NA    | 10            | 2.1            | 12/22/9905:18        | 12/13/9915:00          | DL09-21 | DL09-14 | DSL019S    | NA                     | 12/13/99             |
| LCD1S         | DSL019SC          | 411                | 97          | 71          | 1   | NA    | 10            | 2.1            | 12/22/9905:57        | 12/13/9915:00          | DL09-22 | DL09-14 | DSL019S    | NA                     | 12/13/99             |
| 18609-2514    | L066-02           | ND                 | 119         | 91          | 1   | 13.6  | 12            | 2.4            | 12/22/9906:36        | 12/13/9915:00          | DL09-23 | DL09-14 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2515    | L066-03           | ND                 | 116         | 87          | 1   | 12.1  | 11            | 2.4            | 12/22/9907:16        | 12/13/9915:00          | DL09-24 | DL09-14 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2516    | L066-04           | ND                 | 118         | 88          | 1   | 1.8   | 10            | 2.1            | 12/22/9909:14        | 12/13/9915:00          | DL09-27 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2517    | L066-05           | ND                 | 109         | 78          | 1   | 18.1  | 12            | 2.4            | 12/22/9909:54        | 12/13/9915:00          | DL09-28 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2518    | L066-06           | ND                 | 111         | 84          | 1   | 4.4   | 10            | 2.2            | 12/22/9910:34        | 12/13/9915:00          | DL09-29 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2519    | L066-07           | ND                 | 123         | 93          | 1   | 9.5   | 11            | 2.3            | 12/22/9911:13        | 12/13/9915:00          | DL09-30 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2520    | L066-08           | ND                 | 114         | 96          | 1   | 10.4  | 11            | 2.3            | 12/22/9919:52        | 12/13/9915:00          | DL09-43 | DL09-38 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2521    | L066-09           | ND                 | 139         | 111         | 1   | 5.7   | 11            | 2.2            | 12/22/9912:33        | 12/13/9915:00          | DL09-32 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2522    | L066-10           | ND                 | 109         | 83          | 1   | 9.8   | 11            | 2.3            | 12/22/9913:12        | 12/13/9915:00          | DL09-33 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2523    | L066-11           | ND                 | 115         | 86          | 1   | 13.1  | 12            | 2.4            | 12/22/9913:52        | 12/13/9915:00          | DL09-34 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2524    | L066-12           | ND                 | 125         | 98          | 1   | 2.9   | 10            | 2.2            | 12/22/9914:32        | 12/13/9915:00          | DL09-35 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2524MS  | L066-12M          | 553                | 123         | 94          | 1   | 2.9   | 10.3          | 2.16           | 12/22/9915:12        | 12/13/9915:00          | DL09-36 | DL09-26 | DSL019S    | 12/10/99               | 12/10/99             |
| 18609-2524MSD | L066-12S          | 546                | 124         | 96          | 1   | 2.9   | 10.3          | 2.16           | 12/22/9917:12        | 12/13/9915:00          | DL09-39 | DL09-38 | DSL019S    | 12/10/99               | 12/10/99             |

\* Chromatogram exhibits a non-diesel pattern

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
 SUBJECT: MCAS EL TORO/18609/D.O. 70  
 BATCH NO.: 99L066  
 METHOD: METHOD M8015

=====

MATRIX: WATER % MOISTURE: NA  
 DILUTION FACTOR: 1 1 1  
 SAMPLE ID: MBLK1W  
 LAB SAMP ID: DSL020WB DSL020WL DSL020WC  
 LAB FILE ID: DL09-16 DL09-17 DL09-18  
 DATE EXTRACTED: 12/14/9914:00 12/14/9914:00 12/14/9914:00 DATE COLLECTED: NA  
 DATE ANALYZED: 12/22/9902:00 12/22/9902:39 12/22/9903:19 DATE RECEIVED: 12/14/99  
 PREP. BATCH: DSL020W DSL020W DSL020W  
 CALIB. REF: DL09-14 DL09-14 DL09-14

ACCESSION:

| PARAMETER | BLNK RSLT<br>(mg/L) | SPIKE AMT<br>(mg/L) | BS RSLT<br>(mg/L) | BS<br>% REC | SPIKE AMT<br>(mg/L) | BSD RSLT<br>(mg/L) | BSD<br>% REC | RPD<br>(%) | QC LIMIT<br>(%) | MAX RPD<br>(%) |
|-----------|---------------------|---------------------|-------------------|-------------|---------------------|--------------------|--------------|------------|-----------------|----------------|
| Diesel    | ND                  | 5                   | 4.65              | 93          | 5                   | 5.05               | 101          | 8          | 61-143          | 30             |

=====

| SURROGATE PARAMETER | SPIKE AMT<br>(mg/L) | BS RSLT<br>(mg/L) | BS<br>% REC | SPIKE AMT<br>(mg/L) | BSD RSLT<br>(mg/L) | BSD<br>% REC | QC LIMIT<br>(%) |
|---------------------|---------------------|-------------------|-------------|---------------------|--------------------|--------------|-----------------|
| Bromobenzene        | 1                   | .938              | 94          | 1                   | .97                | 97           | 65-135          |
| Decacosane          | 1                   | .893              | 89          | 1                   | .9                 | 90           | 60-145          |

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD M8015

=====

MATRIX: SOIL % MOISTURE: NA  
DILUTION FACTOR: 1 1 1  
SAMPLE ID: MBLK1S  
LAB SAMP ID: DSL019SB DSL019SL DSL019SC  
LAB FILE ID: DL09-20 DL09-21 DL09-22  
DATE EXTRACTED: 12/13/9915:00 12/13/9915:00 12/13/9915:00 DATE COLLECTED: NA  
DATE ANALYZED: 12/22/9904:38 12/22/9905:18 12/22/9905:57 DATE RECEIVED: 12/13/99  
PREP. BATCH: DSL019S DSL019S DSL019S  
CALIB. REF: DL09-14 DL09-14 DL09-14

ACCESSION:

| PARAMETER | BLNK RSLT<br>(mg/kg) | SPIKE AMT<br>(mg/kg) | BS RSLT<br>(mg/kg) | BS<br>% REC | SPIKE AMT<br>(mg/kg) | BSD RSLT<br>(mg/kg) | BSD<br>% REC | RPD<br>( % ) | QC LIMIT<br>( % ) | MAX RPD<br>( % ) |
|-----------|----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|--------------|-------------------|------------------|
| Diesel    | ND                   | 500                  | 443                | 89          | 500                  | 411                 | 82           | 8            | 51-153            | 50               |

=====

| SURROGATE PARAMETER | SPIKE AMT<br>(mg/kg) | BS RSLT<br>(mg/kg) | BS<br>% REC | SPIKE AMT<br>(mg/kg) | BSD RSLT<br>(mg/kg) | BSD<br>% REC | QC LIMIT<br>( % ) |
|---------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-------------------|
| Bromobenzene        | 100                  | 99.9               | 100         | 100                  | 96.8                | 97           | 60-140            |
| Hexacosane          | 100                  | 73                 | 73          | 100                  | 71.3                | 71           | 55-150            |

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
 PROJECT: MCAS EL TORO/18609/D.O. 70  
 BATCH NO.: 99L066  
 METHOD: METHOD M8015

MATRIX: SOIL % MOISTURE: 2.9  
 DILUTION FACTOR: 1 1 1  
 SAMPLE ID: 18609-2524  
 LAB SAMP ID: L066-12 L066-12M L066-12S  
 LAB FILE ID: DL09-35 DL09-36 DL09-39  
 DATE EXTRACTED: 12/13/9915:00 12/13/9915:00 12/13/9915:00 DATE COLLECTED: 12/10/99  
 DATE ANALYZED: 12/22/9914:32 12/22/9915:12 12/22/9917:12 DATE RECEIVED: 12/10/99  
 PREP. BATCH: DSL019S DSL019S DSL019S  
 CALIB. REF: DL09-26 DL09-26 DL09-38

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/kg) | SPIKE AMT<br>(mg/kg) | MS RSLT<br>(mg/kg) | MS<br>% REC | SPIKE AMT<br>(mg/kg) | MSD RSLT<br>(mg/kg) | MSD<br>% REC | RPD<br>(%) | QC LIMIT<br>(%) | MAX RPD<br>(%) |
|-----------|----------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|------------|-----------------|----------------|
| Diesel    | ND                   | 515                  | 553                | 107         | 515                  | 546                 | 106          | 1          | 51-153          | 50             |

| SURROGATE PARAMETER | SPIKE AMT<br>(mg/kg) | MS RSLT<br>(mg/kg) | MS<br>% REC | SPIKE AMT<br>(mg/kg) | MSD RSLT<br>(mg/kg) | MSD<br>% REC | QC LIMIT<br>(%) |
|---------------------|----------------------|--------------------|-------------|----------------------|---------------------|--------------|-----------------|
| mobenzene           | 103                  | 127                | 123         | 103                  | 127                 | 124          | 60-140          |
| acosane             | 103                  | 97.2               | 94          | 103                  | 98.5                | 96           | 55-150          |

METHOD 3050A/6010A  
 CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2514              Date Analyzed: 12/18/99 01:22
Lab Samp ID: L066-02                  Dilution Factor: 1
Lab File ID: I07L046028               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture     : 13.6
Calib. Ref.: I07L046019               Instrument ID   : EMAXT107
=====
  
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 11.6          | 4.14           |
| Barium     | 99.2               | 1.16          | .15            |
| Beryllium  | .505               | .231          | .0231          |
| Cadmium    | ND                 | 1.16          | .081           |
| Chromium   | 12.2               | 1.16          | .694           |
| Cobalt     | 5.22               | 1.16          | .706           |
| Copper     | 7.48               | 1.16          | .856           |
| Manganese  | 233                | 2.31          | .139           |
| Molybdenum | ND                 | 2.31          | .752           |
| Nickel     | 8.47               | 2.31          | .532           |
| Silver     | ND                 | 2.31          | 1.63           |
| Vanadium   | 30.3               | 1.16          | .961           |
| Zinc       | 30.3               | 1.16          | .301           |

RL: Reporting Limit

: Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SAG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2514              Date Analyzed: 12/20/99 19:40
Lab Samp ID : L066-02                 Dilution Factor: 1
Lab File ID : I31L051014             Matrix          : SOIL
Ext Btch ID : IPL018S                 % Moisture      : 13.6
Calib. Ref.: I31L051008              Instrument ID   : EMAXT131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 2.67               | 1.16          | .594           |
| Lead       | 3.17               | 1.16          | .306           |
| Selenium   | ND                 | 1.16          | .524           |
| Thallium   | 1.19               | 1.16          | .539           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID: 18609-2515                 Date Analyzed: 12/18/99 01:28
Lab Samp ID: L066-03                  Dilution Factor: 1
Lab File ID: I07L046029               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture     : 12.1
Calib. Ref.: I07L046019               Instrument ID  : EMAXTI07
=====

```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 11.4          | 4.07           |
| Barium     | 75.2               | 1.14          | .148           |
| Beryllium  | .419               | .228          | .0228          |
| Cadmium    | ND                 | 1.14          | .0796          |
| Chromium   | 9.81               | 1.14          | .683           |
| Cobalt     | 2.67               | 1.14          | .694           |
| Copper     | 4.86               | 1.14          | .842           |
| Manganese  | 75.4               | 2.28          | .137           |
| Molybdenum | ND                 | 2.28          | .739           |
| Nickel     | 5.37               | 2.28          | .523           |
| Silver     | ND                 | 2.28          | 1.6            |
| Vanadium   | 23                 | 1.14          | .944           |
| Zinc       | 23.4               | 1.14          | .296           |

RL: Reporting Limit

: Analyzed on 12-20-99 File #131L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
LOG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2515              Date Analyzed: 12/20/99 19:44
Lab Samp ID: L066-03                  Dilution Factor: 1
Lab File ID: I31L051015               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture     : 12.1
Calib. Ref.: I31L051008               Instrument ID   : EMAXT131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 2.57               | 1.14          | .584           |
| Lead       | 2.76               | 1.14          | .3             |
| Selenium   | ND                 | 1.14          | .515           |
| Thallium   | ND                 | 1.14          | .53            |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID: 18609-2516                 Date Analyzed: 12/18/99 01:33
Lab Samp ID: L066-04                  Dilution Factor: 1
Lab File ID: I07L046030               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture     : 1.8
Calib. Ref.: I07L046019               Instrument ID  : EMAXTI07
=====

```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 10.2          | 3.65           |
| Barium     | 11.8               | 1.02          | .132           |
| Beryllium  | ND                 | .204          | .0204          |
| Cadmium    | ND                 | 1.02          | .0713          |
| Chromium   | ND                 | 1.02          | .611           |
| Cobalt     | ND                 | 1.02          | .621           |
| Copper     | ND                 | 1.02          | .754           |
| Manganese  | 31.7               | 2.04          | .122           |
| Molybdenum | ND                 | 2.04          | .662           |
| Nickel     | ND                 | 2.04          | .468           |
| Silver     | ND                 | 2.04          | 1.44           |
| Vanadium   | 3.27               | 1.02          | .845           |
| Zinc       | 4.09               | 1.02          | .265           |

RL: Reporting Limit

Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
ject       : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
NO.        : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID: 18609-2516                 Date Analyzed: 12/20/99 19:48
Lab Samp ID: L066-04                  Dilution Factor: 1
Lab File ID: I31L051016               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture     : 1.8
Calib. Ref.: I31L051008               Instrument ID  : EMAXI131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | ND                 | 1.02          | .522           |
| Lead       | ND                 | 1.02          | .269           |
| Selenium   | ND                 | 1.02          | .461           |
| Thallium   | ND                 | 1.02          | .475           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
 CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2517             Date Analyzed: 12/18/99 01:49
Lab Samp ID: L066-05                 Dilution Factor: 1
Lab File ID: I07L046033              Matrix          : SOIL
Ext Btch ID: IPL018S                 % Moisture      : 18.1
Calib. Ref.: I07L046031              Instrument ID   : EMAXT107
=====
  
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 12.2          | 4.37           |
| Barium     | 144                | 1.22          | .159           |
| Beryllium  | .618               | .244          | .0244          |
| Cadmium    | ND                 | 1.22          | .0855          |
| Chromium   | 13.5               | 1.22          | .733           |
| Cobalt     | 5.45               | 1.22          | .745           |
| Copper     | 8.25               | 1.22          | .904           |
| Manganese  | 239                | 2.44          | .147           |
| Molybdenum | ND                 | 2.44          | .794           |
| Nickel     | 9.3                | 2.44          | .562           |
| Silver     | ND                 | 2.44          | 1.72           |
| Vanadium   | 36.2               | 1.22          | 1.01           |
| Zinc       | 40                 | 1.22          | .317           |

RL: Reporting Limit

^: Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====  
Client      : IT CORPORATION           Date Collected: 12/10/99  
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99  
SOG NO.     : 99L066                 Date Extracted: 12/13/99 14:20  
Sample ID: 18609-2517                Date Analyzed: 12/20/99 19:53  
Lab Samp ID: L066-05                 Dilution Factor: 1  
Lab File ID: I31L051017              Matrix          : SOIL  
Ext Btch ID: IPL018S                 % Moisture     : 18.1  
Calib. Ref.: I31L051008              Instrument ID  : EMAXTI31  
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 3.57               | 1.22          | .626           |
| Lead       | 3.42               | 1.22          | .322           |
| Selenium   | ND                 | 1.22          | .553           |
| Thallium   | ND                 | 1.22          | .569           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
 CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                 Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2518             Date Analyzed: 12/18/99 01:54
Lab Samp ID: L066-06                 Dilution Factor: 1
Lab File ID: I07L046034              Matrix          : SOIL
Ext Btch ID: IPL018S                 % Moisture      : 4.4
Calib. Ref.: I07L046031              Instrument ID   : EMAXTI07
=====
  
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 10.5          | 3.74           |
| Barium     | 56.8               | 1.05          | .136           |
| Beryllium  | .255               | .209          | .0209          |
| Cadmium    | ND                 | 1.05          | .0732          |
| Chromium   | 5.68               | 1.05          | .628           |
| Cobalt     | 2.01               | 1.05          | .638           |
| Copper     | 3.23               | 1.05          | .774           |
| Manganese  | 132                | 2.09          | .126           |
| Molybdenum | ND                 | 2.09          | .68            |
| Nickel     | 3.8                | 2.09          | .481           |
| Silver     | ND                 | 2.09          | 1.47           |
| Vanadium   | 17                 | 1.05          | .868           |
| Zinc       | 21.4               | 1.05          | .272           |

RL: Reporting Limit  
 ^: Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Sample NO. : 99L066                Date Extracted: 12/13/99 14:20
Sample ID: 18609-2518              Date Analyzed: 12/20/99 19:58
Lab Samp ID: L066-06                Dilution Factor: 1
Lab File ID: I31L051018             Matrix       : SOIL
Ext Btch ID: IPL018S                % Moisture   : 4.4
Calib. Ref.: I31L051008             Instrument ID : EMAXT131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 1.87               | 1.05          | .537           |
| Lead       | 1.5                | 1.05          | .276           |
| Selenium   | ND                 | 1.05          | .474           |
| Thallium   | ND                 | 1.05          | .487           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID  : 18609-2519                Date Analyzed: 12/18/99 01:59
Lab Samp ID: L066-07                   Dilution Factor: 1
Lab File ID: I07L046035                Matrix          : SUIL
Ext Btch ID: IPL018S                    % Moisture     : 9.5
Calib. Ref.: I07L046031                Instrument ID   : EMAXT107
=====
  
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 11            | 3.96           |
| Barium     | 61.2               | 1.1           | .144           |
| Beryllium  | .275               | .221          | .0221          |
| Cadmium    | ND                 | 1.1           | .0773          |
| Chromium   | 6.65               | 1.1           | .663           |
| Cobalt     | 2.91               | 1.1           | .674           |
| Copper     | 3.89               | 1.1           | .818           |
| Manganese  | 153                | 2.21          | .133           |
| Molybdenum | ND                 | 2.21          | .718           |
| Nickel     | 4.33               | 2.21          | .508           |
| Silver     | ND                 | 2.21          | 1.56           |
| Vanadium   | 20                 | 1.1           | .917           |
| Zinc       | 22.4               | 1.1           | .287           |

RL: Reporting Limit

: Analyzed on 12-20-99 File #131L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
NO.        : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2519               Date Analyzed: 12/20/99 20:02
Lab Samp ID: L066-07                   Dilution Factor: 1
Lab File ID: I31L051019                Matrix          : SOIL
Ext Btch ID: IPL018S                    % Moisture      : 9.5
Calib. Ref.: I31L051008                 Instrument ID   : EMAXI131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 2.33               | 1.1           | .567           |
| Lead       | 1.71               | 1.1           | .292           |
| Selenium   | ND                 | 1.1           | .501           |
| Thallium   | ND                 | 1.1           | .515           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
 CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID: 18609-2520                 Date Analyzed: 12/18/99 02:05
Lab Samp ID: L066-08                  Dilution Factor: 1
Lab File ID: I07L046036               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture     : 10.4
Calib. Ref.: I07L046031               Instrument ID  : EMAXT107
=====
  
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 11.2          | 4              |
| Barium     | 76                 | 1.12          | .145           |
| Beryllium  | .331               | .223          | .0223          |
| Cadmium    | ND                 | 1.12          | .0781          |
| Chromium   | 7.43               | 1.12          | .67            |
| Cobalt     | 3.05               | 1.12          | .681           |
| Copper     | 4.42               | 1.12          | .826           |
| Manganese  | 163                | 2.23          | .134           |
| Molybdenum | ND                 | 2.23          | .725           |
| Nickel     | 4.89               | 2.23          | .513           |
| Silver     | ND                 | 2.23          | 1.57           |
| Vanadium   | 22.8               | 1.12          | .926           |
| Zinc       | 25.7               | 1.12          | .29            |

RL: Reporting Limit  
 : Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

=====  
Client : IT CORPORATION Date Collected: 12/10/99  
Project : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99  
SS NO. : 99L066 Date Extracted: 12/13/99 14:20  
Sample ID: 18609-2520 Date Analyzed: 12/20/99 20:18  
Lab Samp ID: L066-08 Dilution Factor: 1  
Lab File ID: I31L051023 Matrix : SOIL  
Ext Btch ID: IPL018S % Moisture : 10.4  
Calib. Ref.: I31L051020 Instrument ID : EMAXTI31  
=====

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 2.37               | 1.12          | .573           |
| Lead       | 1.76               | 1.12          | .295           |
| Selenium   | ND                 | 1.12          | .506           |
| Thallium   | 1.41               | 1.12          | .52            |

RL: Reporting Limit  
^ Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
CAM METALS BY ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID   : 18609-2521              Date Analyzed: 12/18/99 02:10
Lab Samp ID : L066-09                 Dilution Factor: 1
Lab File ID : I07L046037             Matrix          : SOIL
Ext Btch ID : IPL018S                % Moisture     : 5.7
Calib. Ref.: I07L046031             Instrument ID  : EMAXTI07
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 10.6          | 3.8            |
| Barium     | 45.9               | 1.06          | .138           |
| Beryllium  | ND                 | .212          | .0212          |
| Cadmium    | ND                 | 1.06          | .0742          |
| Chromium   | 5.32               | 1.06          | .636           |
| Cobalt     | 1.77               | 1.06          | .647           |
| Copper     | 3.02               | 1.06          | .785           |
| Manganese  | 87.7               | 2.12          | .127           |
| Molybdenum | ND                 | 2.12          | .689           |
| Nickel     | 4.81               | 2.12          | .488           |
| Silver     | ND                 | 2.12          | 1.5            |
| Vanadium   | 15.2               | 1.06          | .88            |
| Zinc       | 15.1               | 1.06          | .276           |

RL: Reporting Limit

: Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Sample NO. : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID  : 18609-2521                Date Analyzed: 12/20/99 20:23
Lab Samp ID: L066-09                   Dilution Factor: 1
Lab File ID: I31L051024                Matrix          : SOIL
Ext Btch ID: IPL018S                   % Moisture      : 5.7
Calib. Ref.: I31L051020                Instrument ID   : EMAXT131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 1.7                | 1.06          | .544           |
| Lead       | ND                 | 1.06          | .28            |
| Selenium   | ND                 | 1.06          | .48            |
| Thallium   | ND                 | 1.06          | .494           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
CAM METALS BY ICP

=====  
Client : IT CORPORATION Date Collected: 12/10/99  
Project : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99  
SDG NO. : 99L066 Date Extracted: 12/13/99 14:20  
Sample ID: 18609-2522 Date Analyzed: 12/18/99 02:15  
Lab Samp ID: L066-10 Dilution Factor: 1  
Lab File ID: I07L046038 Matrix : SOIL  
Ext Btch ID: IPL018S % Moisture : 9.8  
Calib. Ref.: I07L046031 Instrument ID : EMAXT107  
=====

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 11.1          | 3.97           |
| Barium     | 112                | 1.11          | .144           |
| Beryllium  | .502               | .222          | .0222          |
| Cadmium    | ND                 | 1.11          | .0776          |
| Chromium   | 11.1               | 1.11          | .665           |
| Cobalt     | 4.55               | 1.11          | .676           |
| Copper     | 6.89               | 1.11          | .82            |
| Manganese  | 214                | 2.22          | .133           |
| Molybdenum | ND                 | 2.22          | .721           |
| Nickel     | 7.39               | 2.22          | .51            |
| Silver     | ND                 | 2.22          | 1.56           |
| Vanadium   | 28.7               | 1.11          | .92            |
| Zinc       | 36                 | 1.11          | .288           |

RL: Reporting Limit

: Analyzed on 12-20-99 File # 131L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

=====  
Client : IT CORPORATION Date Collected: 12/10/99  
Project : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99  
NO. : 99L066 Date Extracted: 12/13/99 14:20  
Sample ID: 18609-2522 Date Analyzed: 12/20/99 20:27  
Lab Samp ID: L066-10 Dilution Factor: 1  
Lab File ID: I31L051025 Matrix : SOIL  
Ext Btch ID: IPL018S % Moisture : 9.8  
Calib. Ref.: I31L051020 Instrument ID : EMAXT131  
=====

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 2.84               | 1.11          | .569           |
| Lead       | 2.63               | 1.11          | .293           |
| Selenium   | ND                 | 1.11          | .502           |
| Thallium   | ND                 | 1.11          | .517           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3050A/6010A  
 CAM METALS BY ICP

```

=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID: 18609-2523                Date Analyzed: 12/18/99 02:21
Lab Samp ID: L066-11                 Dilution Factor: 1
Lab File ID: I07L046039              Matrix          : SOIL
Ext Btch ID: IPL018S                 % Moisture      : 13.1
Calib. Ref.: I07L046031              Instrument ID   : EMAXT107
=====
  
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 11.5          | 4.12           |
| Barium     | 113                | 1.15          | .15            |
| Beryllium  | .529               | .23           | .023           |
| Cadmium    | ND                 | 1.15          | .0806          |
| Chromium   | 12.2               | 1.15          | .69            |
| Cobalt     | 4.34               | 1.15          | .702           |
| Copper     | 6.9                | 1.15          | .852           |
| Manganese  | 223                | 2.3           | .138           |
| Molybdenum | ND                 | 2.3           | .748           |
| Nickel     | 8.04               | 2.3           | .529           |
| Silver     | ND                 | 2.3           | 1.62           |
| Vanadium   | 32.3               | 1.15          | .955           |
| Zinc       | 38.2               | 1.15          | .299           |

RL: Reporting Limit  
 : Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
Sample NO. : 99L066                 Date Extracted: 12/13/99 14:20
Sample ID: 18609-2523               Date Analyzed: 12/20/99 20:31
Lab Samp ID: L066-11                Dilution Factor: 1
Lab File ID: I31L051026             Matrix : SOIL
Ext Btch ID: IPL018S                % Moisture : 13.1
Calib. Ref.: I31L051020             Instrument ID : EMAXT131
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 3.27               | 1.15          | .59            |
| Lead       | 2.76               | 1.15          | .304           |
| Selenium   | ND                 | 1.15          | .521           |
| Thallium   | ND                 | 1.15          | .536           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31LC55

METHOD 3050A/6010A  
CAM METALS BY ICP

```
=====
Client      : IT CORPORATION           Date Collected: 12/10/99
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.    : 99L066                  Date Extracted: 12/13/99 14:20
Sample ID: 18609-2524                Date Analyzed: 12/18/99 02:26
Lab Samp ID: L066-12                 Dilution Factor: 1
Lab File ID: I07L046040              Matrix          : SOIL
Ext Btch ID: IPL018S                 % Moisture     : 2.9
Calib. Ref.: I07L046031              Instrument ID  : EMAXTI07
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 10.3          | 3.69           |
| Barium     | 25.3               | 1.03          | .134           |
| Beryllium  | ND                 | .206          | .0206          |
| Cadmium    | ND                 | 1.03          | .0721          |
| Chromium   | 3.38               | 1.03          | .618           |
| Cobalt     | 1.32               | 1.03          | .628           |
| Copper     | 1.82               | 1.03          | .762           |
| Manganese  | 76.4               | 2.06          | .124           |
| Molybdenum | ND                 | 2.06          | .669           |
| Nickel     | 2.08               | 2.06          | .474           |
| Silver     | ND                 | 2.06          | 1.45           |
| Vanadium   | 8.97               | 1.03          | .855           |
| Zinc       | 9.3                | 1.03          | .268           |

RL: Reporting Limit

^: Analyzed on 12-20-99 File #131L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

=====  
Client : IT CORPORATION Date Collected: 12/10/99  
Project : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99  
SUNO. : 99L066 Date Extracted: 12/13/99 14:20  
Sample ID: 18609-2524 Date Analyzed: 12/20/99 20:35  
Lab Samp ID: L066-12 Dilution Factor: 1  
Lab File ID: I31L051027 Matrix : SOIL  
Ext Btch ID: IPL018S % Moisture : 2.9  
Calib. Ref.: I31L051020 Instrument ID : EMAXT131  
=====

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | 1.2                | 1.03          | .528           |
| Lead       | ND                 | 1.03          | .272           |
| Selenium   | ND                 | 1.03          | .467           |
| Thallium   | ND                 | 1.03          | .48            |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

METHOD 3010A/6010A  
CAM METALS BY ICP

```

=====
Client   : IT CORPORATION           Date Collected: 12/10/99
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99
SDG NO.  : 99L066                  Date Extracted: 12/15/99 17:30
Sample ID: 18609-2525              Date Analyzed: 12/15/99 20:42
Lab Samp ID: L066-13              Dilution Factor: 1
Lab File ID: I07L039030           Matrix          : WATER
Ext Btch ID: IPL022W              % Moisture     : NA
Calib. Ref.: I07L039024           Instrument ID   : EMAXTI07
=====

```

| PARAMETERS | RESULTS<br>(ug/L) | RL<br>(ug/L) | MDL<br>(ug/L) |
|------------|-------------------|--------------|---------------|
| Antimony   | ND                | 500          | 39.8          |
| Barium     | ND                | 100          | 1.41          |
| Beryllium  | ND                | 10           | .12           |
| Cadmium    | ND                | 10           | 2.06          |
| Chromium   | ND                | 50           | 4.77          |
| Cobalt     | ND                | 50           | 6.64          |
| Copper     | ND                | 50           | 6.47          |
| Manganese  | ND                | 20           | .64           |
| Molybdenum | ND                | 100          | 9.37          |
| Nickel     | ND                | 150          | 3.93          |
| Silver     | ND                | 50           | 4.69          |
| Vanadium   | ND                | 100          | 4.7           |
| Zinc       | 75.4              | 20           | 2.47          |

RL: Reporting Limit

METHOD 3010A/6010A  
METALS BY TRACE-ICP

```
=====  
Client      : IT CORPORATION           Date Collected: 12/10/99  
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/10/99  
NO.        : 99L066                   Date Extracted: 12/15/99 17:30  
Sample ID   : 18609-2525               Date Analyzed: 12/17/99 13:12  
Lab Samp ID: L066-13                   Dilution Factor: 1  
Lab File ID: I31L041021                 Matrix          : WATER  
Ext Btch ID: IPL022W                     % Moisture     : NA  
Calib. Ref.: I31L041014                 Instrument ID   : EMAXT131  
=====
```

| PARAMETERS | RESULTS<br>(ug/L) | RL<br>(ug/L) | MDL<br>(ug/L) |
|------------|-------------------|--------------|---------------|
| Arsenic    | 33.5              | 10           | 4.37          |
| Lead       | ND                | 10           | 1.42          |
| Selenium   | ND                | 10           | 4.21          |
| Thallium   | ND                | 400          | 3.31          |

RL: Reporting Limit

METHOD 3010A/6010A  
CAM METALS BY ICP

```

=====
Client   : IT CORPORATION           Date Collected: NA
Project  : MCAS EL TORO/18609/D.O. 70 Date Received: 12/15/99
SDG NO.  : 99L066                  Date Extracted: 12/15/99 17:30
Sample ID: MBLK1W                   Date Analyzed: 12/15/99 19:21
Lab Samp ID: IPL022WB               Dilution Factor: 1
Lab File ID: I07L039015             Matrix          : WATER
Ext Btch ID: IPL022W                % Moisture     : NA
Calib. Ref.: I07L039013             Instrument ID   : EMAXT107
=====

```

| PARAMETERS | RESULTS<br>(ug/L) | RL<br>(ug/L) | MDL<br>(ug/L) |
|------------|-------------------|--------------|---------------|
| Antimony   | ND                | 500          | 39.8          |
| Barium     | ND                | 100          | 1.41          |
| Beryllium  | ND                | 10           | .12           |
| Cadmium    | ND                | 10           | 2.06          |
| Chromium   | ND                | 50           | 4.77          |
| Cobalt     | ND                | 50           | 6.64          |
| Copper     | ND                | 50           | 6.47          |
| Manganese  | ND                | 20           | .64           |
| Molybdenum | ND                | 100          | 9.37          |
| Nickel     | ND                | 150          | 3.93          |
| Silver     | ND                | 50           | 4.69          |
| Vanadium   | ND                | 100          | 4.7           |
| Zinc       | ND                | 20           | 2.47          |

RL: Reporting Limit

METHOD 3010A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: NA
Project     : MCAS EL TORO/18609/D.O. 70 Date Received: 12/15/99
NO.        : 99L066                   Date Extracted: 12/15/99 17:30
Sample ID   : MBLK1W                   Date Analyzed: 12/17/99 12:49
Lab Samp ID: IPL022WB                  Dilution Factor: 1
Lab File ID: I31L041016                Matrix          : WATER
Ext Btch ID: IPL022W                    % Moisture      : NA
Calib. Ref.: I31L041014                Instrument ID   : EMAXT131
=====
```

| PARAMETERS | RESULTS<br>(ug/L) | RL<br>(ug/L) | MDL<br>(ug/L) |
|------------|-------------------|--------------|---------------|
| Arsenic    | ND                | 10           | 4.37          |
| Lead       | ND                | 10           | 1.42          |
| Selenium   | ND                | 10           | 4.21          |
| Thallium   | ND                | 400          | 3.31          |

RL: Reporting Limit

METHOD 3050A/6010A  
CAM METALS BY ICP

=====  
Client : IT CORPORATION Date Collected: NA  
Project : MCAS EL TORO/18609/D.O. 70 Date Received: 12/13/99  
SDG NO. : 99L066 Date Extracted: 12/13/99 14:20  
Sample ID: MBLK1S Date Analyzed: 12/17/99 23:42  
Lab Samp ID: IPL018SB Dilution Factor: 1  
Lab File ID: I07L046009 Matrix : SOIL  
Ext Btch ID: IPL018S % Moisture : NA  
Calib. Ref.: I07L046007 Instrument ID : EMAXT107  
=====

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Antimony   | ND                 | 10            | 3.58           |
| Barium     | ND                 | 1             | .13            |
| Beryllium  | ND                 | .2            | .02            |
| Cadmium    | ND                 | 1             | .07            |
| Chromium   | ND                 | 1             | .6             |
| Cobalt     | ND                 | 1             | .61            |
| Copper     | ND                 | 1             | .74            |
| Manganese  | ND                 | 2             | .12            |
| Molybdenum | ND                 | 2             | .65            |
| Nickel     | ND                 | 2             | .46            |
| Silver     | ND                 | 2             | 1.41           |
| Vanadium   | ND                 | 1             | .83            |
| Zinc       | ND                 | 1             | .26            |

RL: Reporting Limit  
: Analyzed on 12-20-99 File #I31L051

METHOD 3050A/6010A  
METALS BY TRACE-ICP

```
=====
Client      : IT CORPORATION           Date Collected: NA
Project    : MCAS EL TORO/18609/D.O. 70 Date Received: 12/13/99
NO.       : 99L066                   Date Extracted: 12/13/99 14:20
Sample ID  : MBLK1S                   Date Analyzed: 12/20/99 19:23
Lab Samp ID: IPL018S8                 Dilution Factor: 1
Lab File ID: I31L051010               Matrix          : SOIL
Ext Btch ID: IPL018S                  % Moisture      : NA
Calib. Ref.: I31L051008               Instrument ID   : EMAXTI31
=====
```

| PARAMETERS | RESULTS<br>(mg/kg) | RL<br>(mg/kg) | MDL<br>(mg/kg) |
|------------|--------------------|---------------|----------------|
| Arsenic    | ND                 | 1             | .513           |
| Lead       | ND                 | 1             | .264           |
| Selenium   | ND                 | 1             | .453           |
| Thallium   | ND                 | 1             | .466           |

RL: Reporting Limit  
Analyzed on 12/21/99, File I31L055

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILTN FACTR: 1 1  
SAMPLE ID: MBLK1W  
CONTROL NO.: IPL022WB IPL022WL IPL022WC  
LAB FILE ID: I07L039015 I07L039016 I07L039017  
DATIME EXTRCTD: 12/15/9917:30 12/15/9917:30 12/15/9917:30 DATE COLLECTED: NA  
DATIME ANALYZD: 12/15/9919:21 12/15/9919:26 12/15/9919:31 DATE RECEIVED: 12/15/99  
PREP. BATCH: IPL022W IPL022W IPL022W  
CALIB. REF: I07L039013 I07L039013 I07L039013

ACCESSION:

| PARAMETER  | BLNK RSLT<br>ug/L | SPIKE AMT<br>ug/L | BS RSLT<br>ug/L | BS<br>% REC | SPIKE AMT<br>ug/L | BSD RSLT<br>ug/L | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|------------|-------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|----------|---------------|--------------|
| Antimony   | ND                | 5000              | 5130            | 103         | 5000              | 5190             | 104          | 1        | 80-120        | 20           |
| Barium     | ND                | 1000              | 1070            | 107         | 1000              | 1100             | 110          | 2        | 80-120        | 20           |
| Beryllium  | ND                | 1000              | 1070            | 107         | 1000              | 1090             | 109          | 2        | 80-120        | 20           |
| Cadmium    | ND                | 1000              | 1020            | 102         | 1000              | 1040             | 104          | 2        | 80-120        | 20           |
| Chromium   | ND                | 1000              | 1020            | 102         | 1000              | 1040             | 104          | 2        | 80-120        | 20           |
| Cobalt     | ND                | 1000              | 1020            | 102         | 1000              | 1040             | 104          | 2        | 80-120        | 20           |
| Copper     | ND                | 1000              | 1080            | 108         | 1000              | 1100             | 110          | 2        | 80-120        | 20           |
| Manganese  | ND                | 1000              | 1000            | 100         | 1000              | 1020             | 102          | 2        | 80-120        | 20           |
| Molybdenum | ND                | 1000              | 1010            | 101         | 1000              | 1040             | 104          | 3        | 80-120        | 20           |
| Nickel     | ND                | 1000              | 1010            | 101         | 1000              | 1030             | 103          | 2        | 80-120        | 20           |
| Silver     | ND                | 1000              | 1030            | 103         | 1000              | 1060             | 106          | 2        | 80-120        | 20           |
| Vanadium   | ND                | 1000              | 1030            | 103         | 1000              | 1060             | 106          | 3        | 80-120        | 20           |
| Zinc       | ND                | 1000              | 1100            | 110         | 1000              | 1090             | 109          | 0        | 80-120        | 20           |

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILTN FACTR: 1 1 1  
SAMPLE ID: MBLK1W  
CONTROL NO.: IPL022WB IPL022WL IPL022WC  
LAB FILE ID: I31L041016 I31L041017 I31L041018  
DATIME EXTRCTD: 12/15/9917:30 12/15/9917:30 12/15/9917:30 DATE COLLECTED: NA  
DATIME ANALYZD: 12/17/9912:49 12/17/9912:53 12/17/9912:57 DATE RECEIVED: 12/15/99  
PREP. BATCH: IPL022W IPL022W IPL022W  
CALIB. REF: I31L041014 I31L041014 I31L041014

ACCESSION:

| PARAMETER | BLNK RSLT<br>ug/L | SPIKE AMT<br>ug/L | BS RSLT<br>ug/L | BS<br>% REC | SPIKE AMT<br>ug/L | BSD RSLT<br>ug/L | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|-------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|----------|---------------|--------------|
| Arsenic   | ND                | 1000              | 1050            | 105         | 1000              | 1020             | 102          | 2        | 80-120        | 20           |
| Lead      | ND                | 1000              | 1050            | 105         | 1000              | 1020             | 102          | 3        | 80-120        | 20           |
| Selenium  | ND                | 1000              | 1070            | 107         | 1000              | 1030             | 103          | 4        | 80-120        | 20           |
| Thallium  | ND                | 1000              | 1140            | 114         | 1000              | 1110             | 111          | 2        | 80-120        | 20           |

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 3050A/6010A

=====

MATRIX: SOIL % MOISTURE: NA  
DILTN FACTR: 1 1  
SAMPLE ID: MBLK1S  
CONTROL NO.: IPL018SB IPL018SL IPL018SC  
LAB FILE ID: I07L046009 I07L046010 I07L046011  
DATIME EXTRACTD: 12/13/9914:20 12/13/9914:20 12/13/9914:20 DATE COLLECTED: NA  
DATIME ANALYZD: 12/17/9923:42 12/17/9923:47 12/17/9923:52 DATE RECEIVED: 12/13/99  
PREP. BATCH: IPL018S IPL018S IPL018S  
CALIB. REF: I07L046007 I07L046007 I07L046007

ACCESSION:

| PARAMETER  | BLNK RSLT<br>mg/kg | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|------------|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|----------|---------------|--------------|
| Antimony   | ND                 | 500                | 451              | 90          | 500                | 453               | 91           | 0        | 80-120        | 20           |
| Radium     | ND                 | 100                | 100              | 100         | 100                | 99.9              | 100          | 0        | 80-120        | 20           |
| Beryllium  | ND                 | 100                | 98.8             | 99          | 100                | 98.6              | 99           | 0        | 80-120        | 20           |
| Cadmium    | ND                 | 100                | 91               | 91          | 100                | 91.8              | 92           | 1        | 80-120        | 20           |
| Chromium   | ND                 | 100                | 96.8             | 97          | 100                | 96.9              | 97           | 0        | 80-120        | 20           |
| Cobalt     | ND                 | 100                | 95.9             | 96          | 100                | 96.1              | 96           | 0        | 80-120        | 20           |
| Copper     | ND                 | 100                | 96.6             | 97          | 100                | 96.2              | 96           | 0        | 80-120        | 20           |
| Manganese  | ND                 | 100                | 94.3             | 94          | 100                | 94.4              | 94           | 0        | 80-120        | 20           |
| Molybdenum | ND                 | 100                | 97.1             | 97          | 100                | 98                | 98           | 1        | 80-120        | 20           |
| Nickel     | ND                 | 100                | 94.2             | 94          | 100                | 94                | 94           | 0        | 80-120        | 20           |
| Silver     | ND                 | 100                | 95.3             | 95          | 100                | 95.3              | 95           | 0        | 80-120        | 20           |
| Vanadium   | ND                 | 100                | 97.4             | 97          | 100                | 97.4              | 97           | 0        | 80-120        | 20           |
| Zinc       | ND                 | 100                | 82.6             | 83          | 100                | 82.9              | 83           | 0        | 80-120        | 20           |

^: Analyzed on 12-20-99 File #I31L051

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
NO.: 99L066  
METHOD: METHOD 3050A/6010A

=====

MATRIX: SOIL % MOISTURE: NA  
DILTN FACTR: 1 1  
SAMPLE ID: MBLK1S  
CONTROL NO.: IPL018SB IPL018SL IPL018SC  
LAB FILE ID: I31L051010 I31L051011 I31L051012  
DATIME EXTRACTD: 12/13/9914:20 12/13/9914:20 12/13/9914:20 DATE COLLECTED: NA  
DATIME ANALYZD: 12/20/9919:23 12/20/9919:27 12/20/9919:31 DATE RECEIVED: 12/13/99  
PREP. BATCH: IPL018S IPL018S IPL018S  
CALIB. REF: I31L051008 I31L051008 I31L051008

ACCESSION:

| PARAMETER | BLNK RSLT<br>mg/kg | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|----------|---------------|--------------|
| Arsenic   | ND                 | 100                | 83.5             | 84          | 100                | 83.6              | 84           | 0        | 80-120        | 20           |
| Lead      | ND                 | 100                | 86.1             | 86          | 100                | 86.3              | 86           | 0        | 80-120        | 20           |
| Selenium  | ND                 | 100                | 83.2             | 83          | 100                | 83.6              | 84           | 1        | 80-120        | 20           |
| Thallium  | ND                 | 100                | 89.1             | 89          | 100                | 89.1              | 89           | 0        | 80-120        | 20           |

Analyzed on 12/21/99, File I31L055

EMAX QUALITY CONTROL DATA  
ANALYTICAL SPIKE ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILTN FACTR: 1 1  
SAMPLE ID: 779679-003  
CONTROL NO.: L064-01 L064-01A  
LAB FILE ID: I07L039027 I07L039033  
DATIME EXTRCTD: 12/15/9917:30 12/15/9917:30 DATE COLLECTED: 12/10/99  
DATIME ANALYZD: 12/15/9920:24 12/15/9920:58 DATE RECEIVED: 12/10/99  
PREP. BATCH: IPL022W IPL022W  
CALIB. REF: I07L039024 I07L039024

ACCESSION:

| PARAMETER  | SMPL RSLT<br>(ug/L) | SPIKE AMT<br>(ug/L) | AS RSLT<br>(ug/L) | AS<br>% REC | QC LIMIT<br>( % ) |
|------------|---------------------|---------------------|-------------------|-------------|-------------------|
| Antimony   | ND                  | 500                 | 556               | 111         | 75-125            |
| Barium     | 451                 | 1000                | 1440              | 99          | 75-125            |
| Beryllium  | ND                  | 1000                | 1000              | 100         | 75-125            |
| Cadmium    | ND                  | 1000                | 1110              | 111         | 75-125            |
| Chromium   | ND                  | 1000                | 1090              | 109         | 75-125            |
| Cobalt     | 224                 | 1000                | 1290              | 107         | 75-125            |
| Copper     | ND                  | 1000                | 1070              | 107         | 75-125            |
| Manganese  | 1110                | 1000                | 2150              | 104         | 75-125            |
| Molybdenum | ND                  | 1000                | 1100              | 110         | 75-125            |
| Nickel     | ND                  | 1000                | 1070              | 107         | 75-125            |
| Silver     | ND                  | 1000                | 914               | 91          | 75-125            |
| Vanadium   | 304                 | 1000                | 1370              | 107         | 75-125            |
| Zinc       | 142                 | 1000                | 1200              | 106         | 75-125            |

EMAX QUALITY CONTROL DATA  
ANALYTICAL SPIKE ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILTN FACTR: 1 1  
SAMPLE ID: 18609-2525  
CONTROL NO.: L066-13 L066-13A  
LAB FILE ID: I31L041021 I31L041023  
DATIME EXTRACTD: 12/15/9917:30 12/15/9917:30 DATE COLLECTED: 12/10/99  
DATIME ANALYZD: 12/17/9913:12 12/17/9913:19 DATE RECEIVED: 12/10/99  
PREP. BATCH: IPL022W IPL022W  
CALIB. REF: I31L041014 I31L041014

ACCESSION:

| PARAMETER | SMPL RSLT<br>(ug/L) | SPIKE AMT<br>(ug/L) | AS RSLT<br>(ug/L) | AS<br>% REC | QC LIMIT<br>( % ) |
|-----------|---------------------|---------------------|-------------------|-------------|-------------------|
| Arsenic   | 33.5                | 500                 | 490               | 92          | 75-125            |
| Lead      | ND                  | 500                 | 478               | 96          | 75-125            |
| Selenium  | ND                  | 500                 | 484               | 96          | 75-125            |
| Thallium  | ND                  | 500                 | 518               | 104         | 75-125            |

EMAX QUALITY CONTROL DATA  
ANALYTICAL SPIKE ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 3050A/6010A

=====

MATRIX: SOIL % MOISTURE: 11.3  
DILTN FACTR: 1 1  
SAMPLE ID: 020-SB01-SS0.0  
CONTROL NO.: L021-12 L021-12A  
LAB FILE ID: I07L046017 I07L046014  
DATIME EXTRACTD: 12/13/9914:20 12/13/9914:20 DATE COLLECTED: 12/02/99  
DATIME ANALYZD: 12/18/9900:24 12/18/9900:08 DATE RECEIVED: 12/03/99  
PREP. BATCH: IPL018S IPL018S  
CALIB. REF: I07L046007 I07L046007

ACCESSION:

| PARAMETER  | SMPL RSLT<br>(mg/kg) | SPIKE AMT<br>(mg/kg) | AS RSLT<br>(mg/kg) | AS<br>% REC | QC LIMIT<br>( % ) |
|------------|----------------------|----------------------|--------------------|-------------|-------------------|
| Antimony   | ND                   | 56.4                 | 56.5               | 100         | 75-125            |
| Barium     | 65.4                 | 113                  | 180                | 102         | 75-125            |
| Beryllium  | ND                   | 113                  | 114                | 101         | 75-125            |
| Cadmium    | ND                   | 113                  | 106                | 94          | 75-125            |
| Chromium   | 12.7                 | 113                  | 124                | 98          | 75-125            |
| Cobalt     | 1.54                 | 113                  | 112                | 98          | 75-125            |
| Copper     | 7.6                  | 113                  | 120                | 100         | 75-125            |
| Manganese  | 60                   | 113                  | 169                | 97          | 75-125            |
| Molybdenum | ND                   | 113                  | 112                | 99          | 75-125            |
| Nickel     | 12.1                 | 113                  | 119                | 95          | 75-125            |
| Silver     | ND                   | 113                  | 90.7               | 80          | 75-125            |
| Vanadium   | 11.5                 | 113                  | 124                | 99          | 75-125            |
| Zinc       | 86                   | 113                  | 182                | 85          | 75-125            |

: Analyzed on 12-20-99 File #I31L051

EMAX QUALITY CONTROL DATA  
ANALYTICAL SPIKE ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
NO.: 99L066  
METHOD: METHOD 3050A/6010A

=====

MATRIX: SOIL % MOISTURE: 11.3  
DILTN FACTR: 1 1  
SAMPLE ID: 020-SB01-SS0.0  
CONTROL NO.: L021-12 L021-12A  
LAB FILE ID: I31L051034 I31L051029  
DATIME EXTRACTD: 12/13/9914:20 12/13/9914:20 DATE COLLECTED: 12/02/99  
DATIME ANALYZD: 12/20/9921:04 12/20/9920:43 DATE RECEIVED: 12/03/99  
PREP. BATCH: IPL018S IPL018S  
CALIB. REF: I31L051032 I31L051020

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/kg) | SPIKE AMT<br>(mg/kg) | AS RSLT<br>(mg/kg) | AS<br>% REC | QC LIMIT<br>( % ) |
|-----------|----------------------|----------------------|--------------------|-------------|-------------------|
| Arsenic   | 3.74                 | 113                  | 107                | 91          | 75-125            |
| Lead      | 3.17                 | 58                   | 51.8               | 84          | 75-125            |
| Selenium  | ND                   | 113                  | 105                | 93          | 75-125            |
| Thallium  | ND                   | 113                  | 111                | 98          | 75-125            |

Analyzed on 12/21/99, File I31L055 (L066-02)

EMAX QUALITY CONTROL DATA  
SERIAL DILUTION ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 5  
SAMPLE ID: 779679-003 779679-003DL  
EMAX SAMP ID: L064-01 L064-01T  
LAB FILE ID: I07L039027 I07L039026  
DATE EXTRACTED: 12/15/9917:30 12/15/9917:30 DATE COLLECTED: 12/10/99  
DATE ANALYZED: 12/15/9920:24 12/15/9920:19 DATE RECEIVED: 12/10/99  
PREP. BATCH: IPL022W IPL022W  
CALIB. REF: I07L039024 I07L039024

ACCESSION:

| PARAMETER  | SMPL RSLT<br>(ug/L) | SERIAL DIL RSLT<br>(ug/L) | DIF RSLT<br>% | QC LIMIT<br>( % ) |
|------------|---------------------|---------------------------|---------------|-------------------|
| Antimony   | ND                  | ND                        | 0             | 10                |
| Barium     | 451                 | ND                        | NA            | 10                |
| Beryllium  | ND                  | ND                        | 0             | 10                |
| Cadmium    | ND                  | ND                        | 0             | 10                |
| Chromium   | ND                  | ND                        | 0             | 10                |
| Cobalt     | 224                 | ND                        | NA            | 10                |
| Copper     | ND                  | ND                        | 0             | 10                |
| Manganese  | 1110                | 1130                      | 3             | 10                |
| Molybdenum | ND                  | ND                        | 0             | 10                |
| Nickel     | ND                  | ND                        | 0             | 10                |
| Silver     | ND                  | ND                        | 0             | 10                |
| Vanadium   | 304                 | ND                        | NA            | 10                |
| Zinc       | 142                 | 170                       | 20*           | 10                |

\* Out of QC limit

EMAX QUALITY CONTROL DATA  
SERIAL DILUTION ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
CH NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILUTION FACTOR: 1 5  
SAMPLE ID: 18609-2525 18609-2525DL  
EMAX SAMP ID: L066-13 L066-13T  
LAB FILE ID: I31L041021 I31L041020  
DATE EXTRACTED: 12/15/9917:30 12/15/9917:30 DATE COLLECTED: 12/10/99  
DATE ANALYZED: 12/17/9913:12 12/17/9913:08 DATE RECEIVED: 12/10/99  
PREP. BATCH: IPL022W IPL022W  
CALIB. REF: I31L041014 I31L041014

ACCESSION:

| PARAMETER | SMPL RSLT<br>(ug/L) | SERIAL DIL RSLT<br>(ug/L) | DIF RSLT<br>% | QC LIMIT<br>( % ) |
|-----------|---------------------|---------------------------|---------------|-------------------|
| Arsenic   | 33.5                | ND                        | NA            | 10                |
| Lead      | ND                  | ND                        | 0             | 10                |
| Selenium  | ND                  | ND                        | 0             | 10                |
| Thallium  | ND                  | ND                        | 0             | 10                |

EMAX QUALITY CONTROL DATA  
SERIAL DILUTION ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
BATCH NO.: 99L066  
METHOD: METHOD 3050A/6010A

=====

MATRIX: SOIL % MOISTURE: 11.3  
DILUTION FACTOR: 1 5  
SAMPLE ID: 020-SB01-SS0.0 020-SB01-SS0.0DL  
EMAX SAMP ID: L021-12 L021-12T  
LAB FILE ID: I07L046017 I07L046016  
DATE EXTRACTED: 12/13/9914:20 12/13/9914:20 DATE COLLECTED: 12/02/99  
DATE ANALYZED: 12/18/9900:24 12/18/9900:19 DATE RECEIVED: 12/03/99  
PREP. BATCH: IPL018S IPL018S  
CALIB. REF: I07L046007 I07L046007

ACCESSION:

| PARAMETER  | SMPL RSLT<br>(mg/kg) | SERIAL DIL RSLT<br>(mg/kg) | DIF RSLT<br>% | QC LIMIT<br>(%) |
|------------|----------------------|----------------------------|---------------|-----------------|
| Antimony   | ND                   | ND                         | 0             | 10              |
| Barium     | 65.4                 | 73.1                       | 12*           | 10              |
| Beryllium  | ND                   | ND                         | 0             | 10              |
| Cadmium    | ND                   | ND                         | 0             | 10              |
| Chromium   | 12.7                 | 17.1                       | 35*           | 10              |
| Cobalt     | 1.54                 | ND                         | NA            | 10              |
| Copper     | 7.6                  | 9.13                       | 20*           | 10              |
| Manganese  | 60                   | 70.3                       | 17*           | 10              |
| Molybdenum | ND                   | ND                         | 0             | 10              |
| Nickel     | 12.1                 | 12.7                       | 5             | 10              |
| Silver     | ND                   | ND                         | 0             | 10              |
| Vanadium   | 11.5                 | 14.1                       | 22*           | 10              |
| Zinc       | 86                   | 96                         | 11*           | 10              |

\* Out of QC limit

^: Analyzed on 12-20-99 File #I31L051

EMAX QUALITY CONTROL DATA  
SERIAL DILUTION ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
CH NO.: 99L066  
METHOD: METHOD 3050A/6010A

=====

MATRIX: SOIL % MOISTURE: 11.3  
DILUTION FACTOR: 1 5  
SAMPLE ID: 020-SB01-SS0.0 020-SB01-SS0.ODL  
EMAX SAMP ID: L021-12 L021-12T  
LAB FILE ID: I31L051034 I31L051022  
DATE EXTRACTED: 12/13/9914:20 12/13/9914:20 DATE COLLECTED: 12/02/99  
DATE ANALYZED: 12/20/9921:04 12/20/9920:14 DATE RECEIVED: 12/03/99  
PREP. BATCH: IPL018S IPL018S  
CALIB. REF: I31L051032 I31L051020

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/kg) | SERIAL DIL RSLT<br>(mg/kg) | DIF RSLT<br>% | QC LIMIT<br>(%) |
|-----------|----------------------|----------------------------|---------------|-----------------|
| Arsenic   | 3.74                 | ND                         | NA            | 10              |
| Lead      | 3.17                 | ND                         | NA            | 10              |
| Selenium  | ND                   | ND                         | 0             | 10              |
| Thallium  | ND                   | ND                         | 0             | 10              |

Analyzed on 12/21/99, File I31L055 (L066-02)

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 3010A/6010A

=====

MATRIX: WATER % MOISTURE: NA  
DILTN FACTR: 1 1 1  
SAMPLE ID: 18609-2525  
CONTROL NO.: L066-13 L066-13M L066-13S  
LAB FILE ID: I07L039030 I07L039031 I07L039032  
DATIME EXTRACTD: 12/15/9917:30 12/15/9917:30 12/15/9917:30 DATE COLLECTED: 12/10/99  
DATIME ANALYZD: 12/15/9920:42 12/15/9920:47 12/15/9920:53 DATE RECEIVED: 12/10/99  
PREP. BATCH: IPL022W IPL022W IPL022W  
CALIB. REF: I07L039024 I07L039024 I07L039024

ACCESSION:

| PARAMETER  | SMPL RSLT<br>ug/L | SPIKE AMT<br>ug/L | MS RSLT<br>ug/L | MS<br>% REC | SPIKE AMT<br>ug/L | MSD RSLT<br>ug/L | MSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|------------|-------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|----------|---------------|--------------|
| Antimony   | ND                | 5000              | 5090            | 102         | 5000              | 4860             | 97           | 5        | 80-120        | 20           |
| Barium     | ND                | 1000              | 1050            | 105         | 1000              | 1000             | 100          | 5        | 80-120        | 20           |
| Beryllium  | ND                | 1000              | 1050            | 105         | 1000              | 1010             | 101          | 4        | 80-120        | 20           |
| Cadmium    | ND                | 1000              | 1030            | 103         | 1000              | 991              | 99           | 4        | 80-120        | 20           |
| Chromium   | ND                | 1000              | 1030            | 103         | 1000              | 989              | 99           | 4        | 80-120        | 20           |
| Cobalt     | ND                | 1000              | 1030            | 103         | 1000              | 992              | 99           | 4        | 80-120        | 20           |
| Copper     | ND                | 1000              | 1040            | 104         | 1000              | 991              | 99           | 5        | 80-120        | 20           |
| Manganese  | ND                | 1000              | 1010            | 101         | 1000              | 972              | 97           | 4        | 80-120        | 20           |
| Molybdenum | ND                | 1000              | 1020            | 102         | 1000              | 973              | 97           | 4        | 80-120        | 20           |
| Nickel     | ND                | 1000              | 1010            | 101         | 1000              | 980              | 98           | 3        | 80-120        | 20           |
| Silver     | ND                | 1000              | 1030            | 103         | 1000              | 992              | 99           | 4        | 80-120        | 20           |
| Vanadium   | ND                | 1000              | 1030            | 103         | 1000              | 989              | 99           | 4        | 80-120        | 20           |
| Zinc       | 75.4              | 1000              | 1070            | 99          | 1000              | 1050             | 98           | 2        | 80-120        | 20           |

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
NO.: 99L066  
METHOD: METHOD 3010A/6010A

MATRIX: WATER % MOISTURE: NA  
DILT N FACTR: 1 1 1  
SAMPLE ID: 18609-2525  
CONTROL NO.: L066-13 L066-13M L066-13S  
LAB FILE ID: I31L041021 I31L041024 I31L041025  
DATIME EXTRACTD: 12/15/9917:30 12/15/9917:30 12/15/9917:30 DATE COLLECTED: 12/10/99  
DATIME ANALYZD: 12/17/9913:12 12/17/9913:23 12/17/9913:32 DATE RECEIVED: 12/10/99  
PREP. BATCH: IPL022W IPL022W IPL022W  
CALIB. REF: I31L041014 I31L041014 I31L041014

ACCESSION:

| PARAMETER | SMPL RSLT<br>ug/L | SPIKE AMT<br>ug/L | MS RSLT<br>ug/L | MS<br>% REC | SPIKE AMT<br>ug/L | MSD RSLT<br>ug/L | MSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|-------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|----------|---------------|--------------|
| Arsenic   | 33.5              | 1000              | 1090            | 106         | 1000              | 1090             | 105          | 0        | 80-120        | 20           |
| Lead      | ND                | 1000              | 986             | 99          | 1000              | 1050             | 105          | 6        | 80-120        | 20           |
| Selenium  | ND                | 1000              | 1010            | 101         | 1000              | 1100             | 110          | 9        | 80-120        | 20           |
| Thallium  | ND                | 1000              | 1190            | 119         | 1000              | 1150             | 115          | 4        | 80-120        | 20           |

METHOD 7470A  
 MERCURY BY COLD VAPOR

=====  
 Client : IT CORPORATION  
 Project : MCAS EL TORO/18609/D.O. 70  
 Batch No. : 99L066  
 =====

Matrix : WATER  
 Instrument ID : T1023  
 =====

| SAMPLE ID  | EMAX<br>SAMPLE ID | RESULTS<br>(ug/L) | DLF | MOIST | RL<br>(ug/L) | MDL<br>(ug/L) | Analysis<br>DATETIME | Extraction<br>DATETIME | LFID       | CAL REF    | PREP BATCH | Collection<br>DATETIME | Received<br>DATETIME |
|------------|-------------------|-------------------|-----|-------|--------------|---------------|----------------------|------------------------|------------|------------|------------|------------------------|----------------------|
| MBLK1W     | HGL015WB          | ND                | 1   | NA    | .2           | .179          | 12/17/9909:29        | 12/16/9917:00          | M99L020008 | M99L020006 | HGL015W    | NA                     | 12/16/99             |
| LCS1W      | HGL015WL          | 5.17              | 1   | NA    | .2           | .179          | 12/17/9909:31        | 12/16/9917:00          | M99L020009 | M99L020006 | HGL015W    | NA                     | 12/16/99             |
| LCD1W      | HGL015WC          | 5.14              | 1   | NA    | .2           | .179          | 12/17/9909:33        | 12/16/9917:00          | M99L020010 | M99L020006 | HGL015W    | NA                     | 12/16/99             |
| 18609-2525 | L066-13           | ND                | 1   | NA    | .2           | .179          | 12/17/9909:37        | 12/16/9917:00          | M99L020012 | M99L020006 | HGL015W    | 12/10/99               | 12/10/99             |

RL: Reporting Limit

7201

METHOD 7471A  
MERCURY BY COLD VAPOR

Client : IT CORPORATION  
Project : MCAS EL TORO/18609/D.O. 70  
Batch No. : 99L066

Matrix : SOIL  
Instrument ID : T1023

| SAMPLE ID     | EMAX<br>SAMPLE ID | RESULTS<br>(mg/kg) | RL  |       |         | MDL<br>(mg/kg) | Analysis<br>DATETIME | Extraction    |            |            | CAL REF | PREP BATCH | Collection<br>DATETIME | Received<br>DATETIME |
|---------------|-------------------|--------------------|-----|-------|---------|----------------|----------------------|---------------|------------|------------|---------|------------|------------------------|----------------------|
|               |                   |                    | DLF | MOIST | (mg/kg) |                |                      | DATETIME      | DATETIME   | LFID       |         |            |                        |                      |
| MBLK1S        | HGL013SB          | ND                 | 1   | NA    | .1      | .028           | 12/14/9916:09        | 12/14/9912:00 | M99L017015 | M99L017006 | HGL013S | NA         | 12/14/99               |                      |
| LCS1S         | HGL013SL          | .839               | 1   | NA    | .1      | .028           | 12/14/9916:11        | 12/14/9912:00 | M99L017016 | M99L017006 | HGL013S | NA         | 12/14/99               |                      |
| LCD1S         | HGL013SC          | .846               | 1   | NA    | .1      | .028           | 12/14/9916:14        | 12/14/9912:00 | M99L017017 | M99L017006 | HGL013S | NA         | 12/14/99               |                      |
| 18609-2514    | L066-02           | ND                 | 1   | 13.6  | .116    | .0324          | 12/14/9916:23        | 12/14/9912:00 | M99L017021 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2514MS  | L066-02M          | .828               | 1   | 13.6  | .116    | .0324          | 12/14/9916:26        | 12/14/9912:00 | M99L017022 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2514MSD | L066-02S          | .863               | 1   | 13.6  | .116    | .0324          | 12/14/9916:29        | 12/14/9912:00 | M99L017023 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2514DL  | L066-02T          | ND                 | 5   | 13.6  | .58     | .162           | 12/14/9916:31        | 12/14/9912:00 | M99L017024 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2514AS  | L066-02A          | .367               | 1   | 13.6  | .116    | .0324          | 12/14/9916:34        | 12/14/9912:00 | M99L017025 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2515    | L066-03           | ND                 | 1   | 12.1  | .114    | .0319          | 12/14/9916:36        | 12/14/9912:00 | M99L017026 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2516    | L066-04           | ND                 | 1   | 1.8   | .102    | .0285          | 12/14/9916:38        | 12/14/9912:00 | M99L017027 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2517    | L066-05           | ND                 | 1   | 18.1  | .122    | .0342          | 12/14/9916:40        | 12/14/9912:00 | M99L017028 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2518    | L066-06           | ND                 | 1   | 4.4   | .105    | .0293          | 12/14/9916:43        | 12/14/9912:00 | M99L017029 | M99L017018 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2519    | L066-07           | ND                 | 1   | 9.5   | .11     | .0309          | 12/14/9916:51        | 12/14/9912:00 | M99L017032 | M99L017030 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2520    | L066-08           | ND                 | 1   | 10.4  | .112    | .0313          | 12/14/9916:53        | 12/14/9912:00 | M99L017033 | M99L017030 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2521    | L066-09           | ND                 | 1   | 5.7   | .106    | .0297          | 12/14/9916:56        | 12/14/9912:00 | M99L017034 | M99L017030 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2522    | L066-10           | ND                 | 1   | 9.8   | .111    | .031           | 12/14/9916:58        | 12/14/9912:00 | M99L017035 | M99L017030 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2523    | L066-11           | ND                 | 1   | 13.1  | .115    | .0322          | 12/14/9917:01        | 12/14/9912:00 | M99L017036 | M99L017030 | HGL013S | 12/10/99   | 12/10/99               |                      |
| 18609-2524    | L066-12           | ND                 | 1   | 2.9   | .103    | .0288          | 12/14/9917:03        | 12/14/9912:00 | M99L017037 | M99L017030 | HGL013S | 12/10/99   | 12/10/99               |                      |

RL: Reporting Limit

7202

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
DG NO.: 99L066  
METHOD: METHOD 7470A

=====

MATRIX: WATER % MOISTURE: NA  
 ILTN FACTR: 1 1 1  
 SAMPLE ID: MBLK1W  
 CONTROL NO.: HGL015WB HGL015WL HGL015WC  
 AB FILE ID: M99L020008 M99L020009 M99L020010  
 ATIME EXTRCTD: 12/16/9917:00 12/16/9917:00 12/16/9917:00 DATE COLLECTED: NA  
 ATIME ANALYZD: 12/17/9909:29 12/17/9909:31 12/17/9909:33 DATE RECEIVED: 12/16/99  
 REP. BATCH: HGL015W HGL015W HGL015W  
 ALIB. REF: M99L020006 M99L020006 M99L020006

ACCESSION:

| PARAMETER | BLNK RSLT<br>ug/L | SPIKE AMT<br>ug/L | BS RSLT<br>ug/L | BS<br>% REC | SPIKE AMT<br>ug/L | BSD RSLT<br>ug/L | BSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|-------------------|-------------------|-----------------|-------------|-------------------|------------------|--------------|----------|---------------|--------------|
| mercury   | ND                | 5                 | 5.17            | 103         | 5                 | 5.14             | 103          | 1        | 77-120        | 15           |

7203

EMAX QUALITY CONTROL DATA  
LCS/LCD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
LOG NO.: 99L066  
METHOD: METHOD 7471A

=====

MATRIX: SOIL % MOISTURE: NA  
SILTN FACTR: 1 1  
SAMPLE ID: MBLK1S  
CONTROL NO.: HGL013SB HGL013SL HGL013SC  
LAB FILE ID: M99L017015 M99L017016 M99L017017  
DATE EXTRACTED: 12/14/9912:00 12/14/9912:00 12/14/9912:00 DATE COLLECTED: NA  
DATE ANALYZED: 12/14/9916:09 12/14/9916:11 12/14/9916:14 DATE RECEIVED: 12/14/99  
REP. BATCH: HGL013S HGL013S HGL013S  
CALIB. REF: M99L017006 M99L017006 M99L017006

ACCESSION:

| PARAMETER | BLNK RSLT<br>mg/kg | SPIKE AMT<br>mg/kg | BS RSLT<br>mg/kg | BS<br>% REC | SPIKE AMT<br>mg/kg | BSD RSLT<br>mg/kg | BSD<br>% REC | RPD<br>% | GC LIMIT<br>% | MAX RPD<br>% |
|-----------|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|----------|---------------|--------------|
| Mercury   | ND                 | .820               | .839             | 102         | .820               | .846              | 103          | 1        | 77-120        | 25           |

7204

EMAX QUALITY CONTROL DATA  
SERIAL DILUTION ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
ATCH NO.: 99L066  
METHOD: METHOD 7471A

=====

MATRIX: SOIL % MOISTURE: 13.6  
DILUTION FACTOR: 1 5  
SAMPLE ID: 18609-2514 18609-2514DL  
MAX SAMP ID: L066-02 L066-02T  
LAB FILE ID: M99L017021 M99L017024  
DATE EXTRACTED: 12/14/9912:00 12/14/9912:00 DATE COLLECTED: 12/10/99  
DATE ANALYZED: 12/14/9916:23 12/14/9916:31 DATE RECEIVED: 12/10/99  
REP. BATCH: HGL013S HGL013S  
ALIB. REF: M99L017018 M99L017018

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/kg) | SERIAL DIL RSLT<br>(mg/kg) | DIF RSLT<br>% | QC LIMIT<br>(%) |
|-----------|----------------------|----------------------------|---------------|-----------------|
| mercury   | ND                   | ND                         | 0             | 10              |

7205

EMAX QUALITY CONTROL DATA  
MS/MSD ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 7471A

=====

MATRIX: SOIL % MOISTURE: 13.6  
DILTN FACTR: 1 1 1  
SAMPLE ID: 18609-2514  
CONTROL NO.: L066-02 L066-02M L066-02S  
LAB FILE ID: M99L017021 M99L017022 M99L017023  
DATE TIME EXTRACTD: 12/14/9912:00 12/14/9912:00 12/14/9912:00 DATE COLLECTED: 12/10/99  
DATE TIME ANALYZD: 12/14/9916:23 12/14/9916:26 12/14/9916:29 DATE RECEIVED: 12/10/99  
PREP. BATCH: HGL013S HGL013S HGL013S  
CALIB. REF: M99L017018 M99L017018 M99L017018

ACCESSION:

| PARAMETER | SMPL RSLT<br>mg/kg | SPIKE AMT<br>mg/kg | MS RSLT<br>mg/kg | MS<br>% REC | SPIKE AMT<br>mg/kg | MSD RSLT<br>mg/kg | MSD<br>% REC | RPD<br>% | QC LIMIT<br>% | MAX RPD<br>% |
|-----------|--------------------|--------------------|------------------|-------------|--------------------|-------------------|--------------|----------|---------------|--------------|
| Mercury   | ND                 | .877               | .828             | 94          | .893               | .863              | 97           | 2        | 77-120        | 25           |

7206

EMAX QUALITY CONTROL DATA  
ANALYTICAL SPIKE ANALYSIS

CLIENT: IT CORPORATION  
PROJECT: MCAS EL TORO/18609/D.O. 70  
SDG NO.: 99L066  
METHOD: METHOD 7471A

=====

MATRIX: SOIL % MOISTURE: 13.6  
DILTN FACTR: 1 1  
SAMPLE ID: 18609-2514  
CONTROL NO.: L066-02 L066-02A  
LAB FILE ID: M99L017021 M99L017025  
DATIME EXTRCTD: 12/14/9912:00 12/14/9912:00 DATE COLLECTED: 12/10/99  
DATIME ANALYZD: 12/14/9916:23 12/14/9916:34 DATE RECEIVED: 12/10/99  
PREP. BATCH: HGL013S HGL013S  
CALIB. REF: M99L017018 M99L017018

ACCESSION:

| PARAMETER | SMPL RSLT<br>(mg/kg) | SPIKE AMT<br>(mg/kg) | AS RSLT<br>(mg/kg) | AS<br>% REC | QC LIMIT<br>( % ) |
|-----------|----------------------|----------------------|--------------------|-------------|-------------------|
| Mercury   | ND                   | .367                 | .364               | 101         | 85-115            |

7207

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** MCAS El Toro  
**Collection Date:** December 10, 1999  
**LDC Report Date:** February 18, 2000  
**Matrix:** Soil/Water  
**Parameters:** Volatiles  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.  
**Sample Delivery Group (SDG):** 99L066

### Sample Identification

18609-2513  
18609-2514  
18609-2515  
18609-2516  
18609-2517  
18609-2518  
18609-2519  
18609-2520  
18609-2521  
18609-2522  
18609-2523\*\*  
18609-2524  
18609-2525  
18609-2524MS  
18609-2524MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 13 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

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 V.

Field duplicates are summarized in Section XVI.

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.
- UU 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/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

All of the continuing calibration RRF values were within validation criteria.

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

| Method Blank ID | Analysis Date | Compound<br>TIC (RT in minutes) | Concentration | Associated Samples                     |
|-----------------|---------------|---------------------------------|---------------|--|
| MBLK1W          | 12/22/99      | Methylene chloride              | 3.8 ug/L      | All water samples in SDG<br>99L066     |
| MBLK1S          | 12/22/99      | Methylene chloride              | 3.8 ug/Kg     | 18609-2514<br>18609-2515<br>18609-2516 |

| Method Blank ID | Analysis Date | Compound TIC (RT in minutes) | Concentration | Associated Samples   |
|-----------------|---------------|------------------------------|---------------|--|
| MBLK2S          | 12/23/99      | Methylene chloride           | 3.9 ug/Kg     | 18609-2517<br>18609-2518<br>18609-2519<br>18609-2520<br>18609-2521<br>18609-2524<br>18609-2523** |

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

| Sample     | Compound TIC (RT in minutes) | Reported Concentration | Modified Final Concentration |
|------------|------------------------------|------------------------|------------------------------|
| 18609-2513 | Methylene chloride           | 4.7 ug/L               | 5U ug/L                      |
| 18609-2525 | Methylene chloride           | 3.7 ug/L               | 5U ug/L                      |
| 18609-2514 | Methylene chloride           | 4.6 ug/Kg              | 5.8U ug/Kg                   |
| 18609-2515 | Methylene chloride           | 3.6 ug/Kg              | 5.7U ug/Kg                   |
| 18609-2516 | Methylene chloride           | 3.1 ug/Kg              | 3.1U ug/Kg                   |
| 18609-2517 | Methylene chloride           | 4.1 ug/Kg              | 6.1U ug/Kg                   |
| 18609-2518 | Methylene chloride           | 3.2 ug/Kg              | 5.2U ug/Kg                   |
| 18609-2519 | Methylene chloride           | 3.2 ug/Kg              | 5.5U ug/Kg                   |
| 18609-2520 | Methylene chloride           | 3.7 ug/Kg              | 5.6U ug/Kg                   |
| 18609-2521 | Methylene chloride           | 3 ug/Kg                | 5.3U ug/Kg                   |

## VI. Surrogate Spikes

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

## **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. Internal Standards**

All internal standard areas and retention times were within QC limits.

## **XI. Target Compound Identifications**

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 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.

## **XIII. Tentatively Identified Compounds (TICs)**

Tentatively identified compounds were not reported by the laboratory.

## **XIV. 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.

## **XV. Overall Assessment of Data**

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

## XVI. Field Duplicates

Samples 18609-2523\*\* and 18609-2524 were identified as field duplicates. No volatiles were detected in any of the samples.

## XVII. Field Blanks

Sample 18609-2513 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

| Trip Blank ID | Compound           | Concentration (ug/L) |
|---------------|--------------------|----------------------|
| 18609-2513    | Methylene chloride | 4.7                  |

**MCAS EI Toro**  
**Volatiles - Data Qualification Summary - SDG 99L066**

No Sample Data Qualified in this SDG

**MCAS EI Toro**  
**Volatiles - Laboratory Blank Data Qualification Summary - SDG 99L066**

| SDG    | Sample     | Compound<br>TIC (RT in minutes) | Modified Final<br>Concentration | A or P |
|--------|------------|---------------------------------|---------------------------------|--------|
| 99L066 | 18609-2513 | Methylene chloride              | 5U ug/L                         | A      |
| 99L066 | 18609-2525 | Methylene chloride              | 5U ug/L                         | A      |
| 99L066 | 18609-2514 | Methylene chloride              | 5.8U ug/Kg                      | A      |
| 99L066 | 18609-2515 | Methylene chloride              | 5.7U ug/Kg                      | A      |
| 99L066 | 18609-2516 | Methylene chloride              | 3.1U ug/Kg                      | A      |
| 99L066 | 18609-2517 | Methylene chloride              | 6.1U ug/Kg                      | A      |
| 99L066 | 18609-2518 | Methylene chloride              | 5.2U ug/Kg                      | A      |
| 99L066 | 18609-2519 | Methylene chloride              | 5.5U ug/Kg                      | A      |
| 99L066 | 18609-2520 | Methylene chloride              | 5.6U ug/Kg                      | A      |
| 99L066 | 18609-2521 | Methylene chloride              | 5.3U ug/Kg                      | A      |

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** MCAS El Toro  
**Collection Date:** December 10, 1999  
**LDC Report Date:** February 22, 2000  
**Matrix:** Soil/Water  
**Parameters:** Metals  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.  
**Sample Delivery Group (SDG):** 99L066

### Sample Identification

18609-2514  
18609-2515  
18609-2516  
18609-2517  
18609-2518  
18609-2519  
18609-2520  
18609-2521  
18609-2522  
18609-2523\*\*  
18609-2524  
18609-2525  
18609-2525MS  
18609-2525MSD  
18609-2514MS  
18609-2514MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 13 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Mercury, Molybdenum, Nickel, Silver, Thallium, Vanadium, and Zinc.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods 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 specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

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

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

## III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks with the following exceptions:

| Method Blank ID | Analyte                        | Maximum Concentration               | Associated Samples              |
|-----------------|--------------------------------|-------------------------------------|---------------------------------|
| ICB/CCB         | Chromium<br>Silver<br>Vanadium | 4.34 ug/L<br>7.10 ug/L<br>4.73 ug/L | All soil samples in SDG 99L066  |
| ICB/CCB         | Zinc                           | 3.65 ug/L                           | All water samples in SDG 99L066 |

Sample concentrations were compared to the maximum contaminant concentrations detected in the ICB/CCB/PBs. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated method blanks.

## IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

## V. Matrix Spike Analysis

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.

## VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

## VII. 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.

## VIII. Internal Standards

ICP-MS was not utilized in this SDG.

## IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

## X. ICP Serial Dilution

Not required by the method.

## XI. Sample Result Verification

All sample result verifications met 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. Overall Assessment of Data

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

## XIII. Field Duplicates

Samples 18609-2523\*\* and 18609-2524 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

| Analyte   | Concentration (mg/Kg) |            | RPD |
|-----------|-----------------------|------------|-----|
|           | 18609-2523**          | 18609-2524 |     |
| Arsenic   | 3.27                  | 1.2        | 93  |
| Barium    | 113                   | 25.3       | 127 |
| Beryllium | 0.529                 | 0.206U     | 200 |
| Chromium  | 12.2                  | 3.38       | 113 |

| Analyte   | Concentration (mg/Kg) |            | RPD |
|-----------|-----------------------|------------|-----|
|           | 18609-2523**          | 18609-2524 |     |
| Cobalt    | 4.34                  | 1.32       | 107 |
| Copper    | 6.9                   | 1.82       | 116 |
| Lead      | 2.76                  | 1.03U      | 200 |
| Manganese | 223                   | 76.4       | 98  |
| Nickel    | 8.04                  | 2.08       | 118 |
| Vanadium  | 32.3                  | 8.97       | 113 |
| Zinc      | 38.2                  | 9.3        | 122 |

#### XIV. Field Blanks

No field blanks were identified in this SDG.

**MCAS El Toro  
Metals - Data Qualification Summary - SDG 99L066**

No Sample Data Qualified in this SDG

**MCAS El Toro  
Metals - Laboratory Blank Data Qualification Summary - SDG 99L066**

No Sample Data Qualified in this SDG

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

**Project/Site Name:** MCAS El Toro  
**Collection Date:** December 10, 1999  
**LDC Report Date:** February 24, 2000  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Gasoline  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.  
**Sample Delivery Group (SDG):** 99L066

**Sample Identification**

18609-2513  
18609-2514  
18609-2515  
18609-2516  
18609-2517  
18609-2518  
18609-2519  
18609-2520  
18609-2521  
18609-2522  
18609-2523\*\*  
18609-2524  
18609-2525  
18609-2516MS  
18609-2516MSD  
18609-2525MS  
18609-2525MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 13 soil samples and 4 water samples 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 Gasoline.

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.
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- 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 gasoline 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**

Samples 18609-2523\*\* and 18609-2524 were identified as field duplicates. No total petroleum hydrocarbons as gasoline were detected in any of the samples.

## **X. Field Blanks**

Sample 18609-2613 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found in this blank.

**MCAS El Toro**

**Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG 99L066**

No Sample Data Qualified in this SDG

**MCAS El Toro**

**Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification Summary - SDG 99L066**

No Sample Data Qualified in this SDG

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

**Project/Site Name:** MCAS El Toro  
**Collection Date:** December 10, 1999  
**LDC Report Date:** February 24, 2000  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Extractables  
**Validation Level:** NFESC Level C & D  
**Laboratory:** EMAX Laboratories, Inc.

**Sample Delivery Group (SDG):** 99L066

**Sample Identification**

18609-2514  
18609-2515  
18609-2516  
18609-2517  
18609-2518  
18609-2519  
18609-2520  
18609-2521  
18609-2522  
18609-2523\*\*  
18609-2524  
18609-2525  
18609-2524MS  
18609-2524MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 13 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**

Samples 18609-2523\*\* and 18609-2524 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples.

## **X. Field Blanks**

No field blanks were identified in this SDG.

**MCAS El Toro  
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG  
99L066**

No Sample Data Qualified in this SDG

**MCAS El Toro  
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data Qualification  
Summary - SDG 99L066**

No Sample Data Qualified in this SDG

***Appendix J***  
***Land Survey Data***

# MCAS, EL TORO

SITE: PH-5/D.O.70

61169

61171

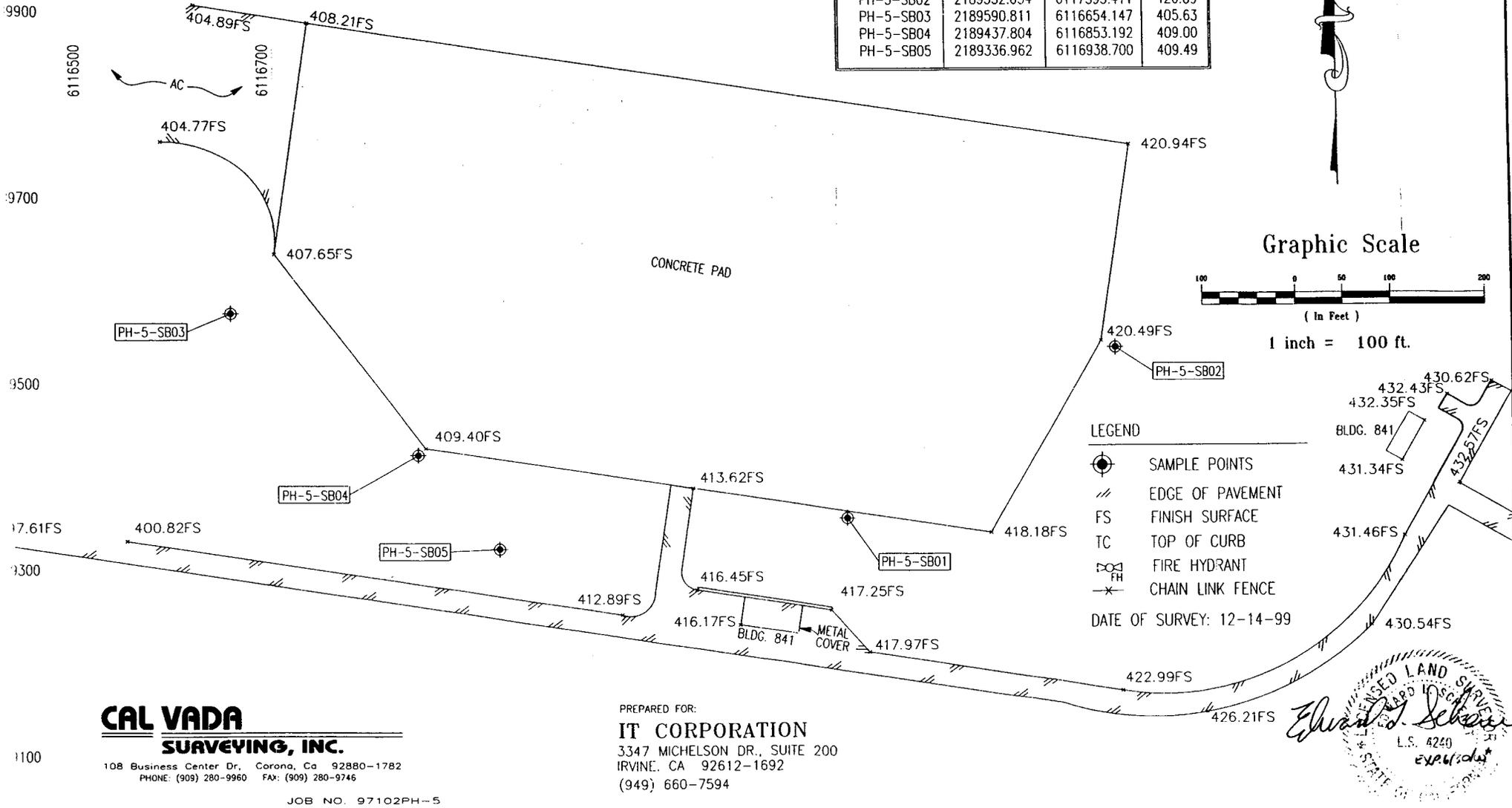
61173

61175

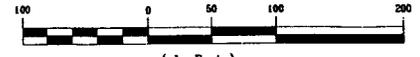
61177

61179

| BHOLE     | NORTHING    | EASTING     | FS     |
|-----------|-------------|-------------|--------|
| PH-5-SB01 | 2189369.693 | 6117308.753 | 415.70 |
| PH-5-SB02 | 2189552.054 | 6117593.411 | 420.09 |
| PH-5-SB03 | 2189590.811 | 6116654.147 | 405.63 |
| PH-5-SB04 | 2189437.804 | 6116853.192 | 409.00 |
| PH-5-SB05 | 2189336.962 | 6116938.700 | 409.49 |



Graphic Scale



1 inch = 100 ft.

LEGEND

- SAMPLE POINTS
- EDGE OF PAVEMENT
- FINISH SURFACE
- TOP OF CURB
- FIRE HYDRANT
- CHAIN LINK FENCE

DATE OF SURVEY: 12-14-99

**CAL VADA**  
**SURVEYING, INC.**

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*Edward S. Schmitt*  
LICENSED LAND SURVEYOR  
L.S. 4220  
exp. 6/30/01