HADLEY INDUSTRIES
environmental technologies

MCAS EL TORO

AQUASORB™ TREATMENT SYSTEM

MONITORING REPORT

JULY AND AUGUST 1991

PREPARED FOR: MR. ANDY PISZKIN, RPM
SOUTHWEST NAVFACENGCOM
1220 PACIFIC HIGHWAY (CODE 0214)
SAN DIEGO, CALIFORNIA 92132

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PREPARED BY: MR. DONALD KLEMM, OPERATIONS MGR.
HADLEY INDUSTRIES
5900 W. FOURTH STREET P.O. BOX 489
LUDINGTON, MICHIGAN 49431

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MCAS EL TORO
AQUASORB[tm] GROUNDWATER TREATMENT SYSTEM
MONITORING REPORT
JULY AND AUGUST 1991

BACKGROUND

Hadley Industries Environmental Technologies has been contracted by the Department of Navy to operate and maintain the groundwater remediation system at the MCAS El Toro Base in Santa Ana, California.

The system consists of three purge wells (PS#1, PS#3, and PS#4) which pump groundwater from along the southwestern perimeter of the Base. The purged groundwater is directed to a central area for treatment through the Aquasorb[tm] two-stage granular activated carbon (GAC) system. Treated water is pumped to a holding tank and utilized for the irrigation system at the Base golf course.

The system has been operated and maintained by Hadley Industries since July 11, 1991. On that date, the operations of the system were reviewed by Chrisa Mitchell of the Base, Donald Klemm, Operations Manager for Hadley Industries; Renee Moye, Technical Representative for Hadley's California District Office; and Richard Sidlin, system operator for Hadley Industries.

This is the first monitoring report for the months of July and August 1991.

SYSTEM OPERATIONS REPORT

Operations of the Aquasorb[tm] GAC system are summarized in the System Operation Report (SOR) on Table 1. The SOR indicates individual pump flow rates; flow meter reading each pump; Booster pump flow rate and total gallons treated; and analytical results of PS#1, PS#3, and PS#4 and Influent, Between Stages, and Effluent, indicated as a total of all EPA Method 8240 constituents. The SOR will be included in each monitoring report, and will allow comparisons of these parameters over time.

OBSERVATIONS

July 11, 1991

During the initial system inspection on July 11, it was revealed that PS#1 was not operating, and was in fact valved shut at the well. At that time, PS#1 was opened to allow flow. The pump would pump approximately 1 1/2 gallons of water and then turn off by the automatic shut-off probes located in the well. It was noted that the pumping rate (when operating) was 6 to 8 gallons per minute (gpm).

Pump PS#3 was pumping at a rate of 4 gpm, and the control valved was closed almost completely, causing a pressure of 54psi at the pump.

Pump PS#4 was pumping at a rate of 5 gpm, and also valved back at the pump to a pressure of 63 psi.

The air vent at the top of the Stage 1 adsorber was leaking. This leak was stopped by closing off the air vent until replacement would occur with the new adsorbers.

Numerous deficiencies in the system were noted, and were discussed at the meeting at NAVFACENGCOM on July 12, with Chrisa Mitchell, Richard Duffin, and Tess Heidrich.

August 19, 1991

System inspection and sampling was performed by Richard Sidlin. Total groundwater treated since July 11 was 55,006 cubic feet (411,445 gallons) for an average of 7.32 gallons per minute.

Pump PS#1 was taken off line due to a leak at both the discharge end of the pump and the pressure switch. The flow meter also appeared to be malfunctioning. We suspect these problems are the reason that PS#1 was turned off when Hadley commenced with O&M in July.

Pumps PS#3 and PS#4 were operating at average pumping rates of 5gpm and 2gpm respectively.

AUGUST 27, 1991

End of the month readings and inspection were performed by Richard Sidlin. Total groundwater treated since August 19 was 14,426 cubic feet (107,906 gallons) for an average of 9.36 gallons per minute.

AUGUST 28, 1991

On this date, Mr. Scott Hall, senior systems operator of Hadley Industries, visited and inspected the site. Troubleshooting of PS#1 indicated a faulty pressure switch, improper wiring on this pressure switch, and leaking at the plumbing connections at the well head.

The existing GAC vessel was removed and shipped out for carbon regeneration. The two new Aquasorb[tm] 537 GAC adsorbers were placed on line at this time. Each vessel contains 1,000 pounds of GAC, is pressure rated for up to 150 psi, and is fiberglass reinforced, polyethylene lined. The system is now operating as a two-stage system.

Pump PS#1 is still off-line. Pumps PS#3 and PS#4 are operating properly.

DISCUSSION OF RESULTS

During the period of July 11 through August 28, 1991, the Aquasorb[tm] GAC system treated 71,302 cubic feet (533,339 gallons) of groundwater. Average total flow rate from the three purge wells is 7.7 gpm.

Table 2 provides a summary of flow rates from each of the three purge wells, and treated at the GAC system. This summary indicates that the purge wells are not operating to design capacity.

Appendix A contains the analytical results of samples taken on August 19, 1991 from each of the three purge wells (PS#1, PS#3, and PS#4), the combined inlet to the system (Influent) and the combined outlet (Effluent) from the system. Please note that no intermediate (Between Stage) sample was taken due to the fact that only one adsorber was on-line at that time.

Analytical results indicate a total of 89 micrograms per liter (ug/L) entering the treatment system (Influent), and 21 ug/L discharging the system (Effluent). The discharge constituents included 7 ug/L of Methylene Chloride (which also appeared in the Lab Pure trip blank), 12 ug/L of Acetone, and 2 ug/L of Chloroform. These samples were taken on August 21, when only one adsorber was on line. The two new adsorbers were installed and put on-line on August 28, and further discharge should be eliminated.

At our meeting in San Diego on July 12, 1991, we indicated numerous improvements and related work that needed to be implemented to bring the system up to its full capacity, before Hadley could be held fully responsible for the system operations. At that meeting we were directed to produce a proposal for these items. Briefly, our proposal of August 13, 1991 listed replacement of hoses, replacement and burial of above-ground plumbing, pump maintenance and replacement, replacement of the system manifold, well water elevation measurements and float switch adjustments. We have not had a response on this proposal.

Currently, PS#1 has been turned off due to leaking at the well. This was addressed in the proposal before the leak occurred.

On September 17, the complete system was turned off due to the booster pump not operating. The holding tank after the treatment system overflowed when this booster pump failed to operate. Our operator met with Mr. Richard Duffin on the Base regarding this problem. Troubleshooting indicated that the main breakers inside Maintenance Building next to the treatment system were tripped. Mr. Duffin is investigating why these breakers are tripping, and the system remains turned off in the interim. Our operator will be on site to restart the system as soon as the electrical problem is solved.

HADLEY INDUSTRIES
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TABLE 2

MCAS EL TORO AQUASORB[tm] TREATMENT SYSTEM

SUMMARY OF FLOW RATES

	7/11/91	8/19/91	8/27/91
PS#1			
METER READING (GAL)	139120	165670	OFFLINE
GALLONS PUMPED	NA	26550	NA
# OF DAYS	NA	39	8
AVERAGE FLOW (GPM)	NA	.47	NA
PS#3			
METER READING (GAL)	2953050	3227320	3280920
GALLONS PUMPED	NA	274270	53600
# OF DAYS	NA	39	8
AVERAGE FLOW (GPM)	NA	4.88	4.65
PS#4			
METER READING (GAL)	2457900	2570560	2624350
GALLONS PUMPED	NA	112660	53790
# OF DAYS	NA	39	8
AVERAGE FLOW (GPM)	NA	2.00	4.66
GAC EFFLUENT			
METER READING (CU FT)	761668	816674	831100
CU FT PUMPED	NA	55006	14426
GALLONS PUMPED	NA	411445	107906
# OF DAYS	NA	39	8
AVERAGE FLOW (GPM)	NA	7.32	9.36

TABLE 2

MCAS EL TORO #311146
SYSTEM OPERATIONS REPORT

SYS OP	DATE	NOTES	BOOSTER PUMP (DISCHARGE) CFM	BOOSTER PUMP (DISCHARGE) TOTAL	BOOSTER PUMP (DISCHARGE) AVG GPM	TOTAL CONCENTRATIONS UG/L EPA METHOD 8240 INF	TOTAL CONCENTRATIONS UG/L EPA METHOD 8240 BET	TOTAL CONCENTRATIONS UG/L EPA METHOD 8240 EFF	FLOW RATES AND FLOW METER READINGS GPM PS#1	GPM PS#3	GPM PS#4	GAL PS#1	GAL PS#3	GAL PS#4
DAK	11-Jul-91	INSPECT	4	761668	NA				NA	4	5	139120	2953050	2457900
RS	19-Aug-91	PS#1 LEAK	4	816674	7.3262977	89	NA	21	4	5	2	165670	3227320	2570560
RS	27-Aug-91	PS#1 OFF	4	831100	9.3668819				0	3	3	NA	3280920	2624350
SRH	28-Aug-91	C/O TWO	4.15	832970	9.7136111				NA	NA	NA	NA	NA	NA

APPENDIX A

ANALYTICAL RESULTS

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

INFLUENT

Lab Name: COMPUCHEM.RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439024

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039024C51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. ____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	10	B
67-64-1	Acetone	22	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	2	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	36	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	19	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

INFLUENT

Lab Name: COMPUCHEM,RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439024

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039024C51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM.RTP Contract: (3-90)-REVS

Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439025

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039025C51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	7	BJ
67-64-1	Acetone	12	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

EFFLUENT

Lab Name: COMPUCHEM,RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439025

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039025C51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PS1

Lab Name: COMPUCHEM,RTP Contract: (3-90)-REVS

La Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439033

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039033A51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	15	B
67-64-1	Acetone	8	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	17	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

PS1

Lab Name: COMPUCHEM.RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439033

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039033A51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PS3

Lab Name: COMPUCHEM.RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439035

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039035A51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	BJ
67-64-1	Acetone	9	BJ
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	3	J
67-66-3	Chloroform	2	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	50	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	2	J
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	34	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PS3

Lab Name: COMPUCHEM,RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439035

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039035A51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

PS4

Lab Name: COMPUCHEM.RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439019

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039019C51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. _____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	3	BJ
67-64-1	Acetone	13	B
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	4	J
67-66-3	Chloroform	1	J
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	40	
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	25	
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

PS4

Lab Name: COMPUCHEM,RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439019

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039019C51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. ____ Date Analyzed: 08/28/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

LABPURE

I Name: COMPUCHEM,RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439036

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039036B51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. ____ Date Analyzed: 08/27/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	13	B
67-64-1	Acetone	10	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

LABPURE

Lab Name: COMPUCHEM.RTP Contract: (3-90)-REVS

Lab Code: COMPU Case No.: 23861 SAS No.: _____ SDG No.: 1

Matrix: (soil/water) WATER Lab Sample ID: 439036

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: CN039036B51

Level: (low/med) LOW Date Received: 08/21/91

% Moisture: not dec. ____ Date Analyzed: 08/27/91

GC Column: DB-624 ID: 0.530 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____(uL)

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

COMPUCHEM LABORATORIES

No. 021777

CHAIN-OF-CUSTODY RECORD

439024 439025 439033 439035 439019 *439036

PROJECT NAME: MCAS EL TORO
PROJECT NUMBER: 311146
SAMPLERS (SIGNATURE)

RICHARD STOCIA
PRINTED NAME

CLIENT ID (9 CHARACTERS)									#	GC/MS					GC							INORGANICS				OTHER															SAMPLING INFO		REMARKS
1	2	3	4	5	6	7	8	9	No. of Bottles/Vials	624-8240	625-8270	TCL-VOA	TCL-SVOA	Other:	601-8010	602-8020	608-8080	8140	TCL PEST/PCB's	Herbicides	Other:	Metals	Cyanide	TAL Metals	Other:	TOC	TOX	Oil & Grease	Pet. Hydro.	Phenols									MATRIX: Water/Soil	DATE	TIME	
																																								8/19	16:34	
T	N	F	L	G	E	N	T		2	X																														W	↓		
E	F	F	C	G	E	N	T		2	X																														W			
2	5	1							1	X																														W			
2	5	3							1	X																														W			
2	5	4							2	X																														W			

RELINQUISHED BY:	Date/Time	RELINQUISHED BY:	Date/Time	RELINQUISHED BY:	Date/Time
Chris Mitchell	1810				
COMPANY NAME: MCAS EL TORO	8/19/91	COMPANY NAME:		COMPANY NAME:	
RECEIVED BY: [signature]	Date/Time 19:47	RECEIVED BY: Reginald Dawkins	Date/Time 8/21/91	RECEIVED BY:	Date/Time
COMPANY NAME: MACCY	8/19/91	COMPANY NAME: Compuchem	11:30 am	COMPANY NAME:	
RELINQUISHED BY: [signature]	Date/Time 19:49	RELINQUISHED BY:	Date/Time	RELINQUISHED BY:	Date/Time
COMPANY NAME: MACCY	8/19/91	COMPANY NAME:		COMPANY NAME:	

SHIPPING INFORMATION

Number of Shipping Containers-

Method of Shipment

RECEIVED IN GOOD CONDITION

Special Handling Requirements

*RECV'D 1-VOA 2/4 LAB PORE NOT ON C-OF-C