

MCAS EL TORO  
INTERIM GROUNDWATER TREATMENT SYSTEM  
MONTHLY MONITORING REPORT  
NOVEMBER 1989

MCAS EL TORO  
INTERIM GROUNDWATER TREATMENT SYSTEM

MONTHLY MONITORING REPORT

NOVEMBER 1989

*BACKGROUND*

James M. Montgomery, Consulting Engineers, Inc. (JMM) is submitting its fourth of nine monthly monitoring reports for the MCAS El Toro Interim Groundwater Treatment System. The system consists of three wells extracting groundwater from along the southwestern perimeter of the Base and pumping it to a granular activated carbon (GAC) treatment system. The treated water is pumped into the golf course irrigation system. The interim groundwater treatment system has been in operation since June 15, 1989.

*ACTIVITIES COMPLETED THIS MONTH*

Analytical Data

- Three samples were collected on November 13, 1989 for analyses. Matrix spike and duplicate samples were also obtained for analyses.

*OPERATION DATA*

- Flow meter readings were taken at all three wells, the GAC treatment and the golf course storage tank.
- PS-1 was shutdown due to rail car activity. Burying the line below the rail tracks is recommended.
- PS-3 and PS-4 were operating satisfactorily.
- The extraction wells were cycling on and off frequently due to last month's lowering of the high level probe and the large difference between the pumping rate and the recovery rate.

*MAINTENANCE DATA*

- Conducted general housekeeping around all the sites.
- The GAC storage tank had no algal growth over the last two months after it was painted.
- A leak in the top of Units 1 and 2 was sealed with plumbers goop.

- The previous break that was repaired in the discharge line from the GAC storage tank was working satisfactorily.

### *DISCUSSION OF RESULTS*

Two of the three wells are pumping to the GAC treatment system an average of eight gallons per minute. Approximately 1.3 million gallons of groundwater have been treated during the first five months of operation.

Table 1 provides a summary of the analytical results for samples taken before start up of the GAC treatment system and results of subsequent monthly monitoring samples. Table 2 provides a summary of the groundwater extracted from the three wells and treated at the GAC treatment facility. Figure 1 is a schematic flow diagram of the overall extraction and treatment system including sample locations.

No detectable contaminants have been analyzed in the treated groundwater pumped to the golf course irrigation system.

Chloroform, 1,1-Dichloroethane, and cis-1,2-Dichlorethene concentrations of 1.4 micrograms per liter or less have been detected in the outlet of Unit One from the September, October and November samples. The original design criteria allows up to five micrograms per liter of a contaminant before procedures for replacing a carbon unit is implemented.

The concentration of TCE at the GAC Inlet has been higher by fifty percent than previously detected at each well. To determine the source for the higher concentrations of contaminants, additional sampling is required at each well.

### *ACTIVITIES PLANNED FOR NEXT MONTH*

The fifth of nine monthly monitoring site visits is scheduled for the second week in December.

**TABLE I**  
**MCAS EL TORO INTERIM GROUNDWATER TREATMENT SYSTEM**  
**SUMMARY OF ANALYTICAL RESULTS**

Location/Compound	Range Before Startup	Sample Date, Concentration, ppb ( $\mu\text{g/l}$ )			
		7/28/89	9/11/89	10/12/89	11/13/89
<b><u>PS-1</u></b>					
Chloroform	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene (PCE)					
Trichloroethene (TCE)					
cis-1, 2-Dichloroethene					
<b><u>PS-3</u></b>					
Chloroform	ND-->12	2.6	N/A	N/A	N/A
Tetrachloroethene (PCE)	24-->83	76			
Trichloroethene (TCE)	33--70	65			
cis-1, 2-Dichloroethene	ND-->7.4	5.8			
<b><u>PS-4</u></b>					
Chloroform	ND-->3.1	2.4	N/A	N/A	N/A
Tetrachloroethene (PCE)	48-->59	60			
Trichloroethene (TCE)	78-->98	70			
cis-1, 2-Dichloroethene	10-->15	8			
<b><u>GAC Inlet</u></b>					
Chloroform	N/A	3	2.9	3	ND
Tetrachloroethene (PCE)		100	58	69	68
Trichloroethene (TCE)		99	100	150	150
cis-1, 2-Dichloroethene		7.9	8.4	9.2	5.0
2-Butanone		ND	25	ND	ND
<b><u>Unit 1 Outlet</u></b>					
Chloroform	N/A	ND	0.2	0.6	1.4
Tetrachloroethene (PCE)		0.6	ND	ND	ND
Trichloroethene (TCE)		0.2	ND	ND	ND
cis-1, 2-Dichloroethene		ND	ND	0.3	1.4
1,1- Dichloroethane		ND	ND	ND	0.4
<b><u>GAC Outlet</u></b>					
Chloroform	N/A	ND	ND	ND	ND
Tetrachloroethene (PCE)		ND	ND	ND	ND
Trichloroethene (TCE)		ND	ND	ND	ND
cis-1, 2-Dichloroethene		ND	ND	ND	ND
<b><u>Groundwater Treated, Gallons</u></b>	N/A	187,523	669,430	932,980	1,290,203

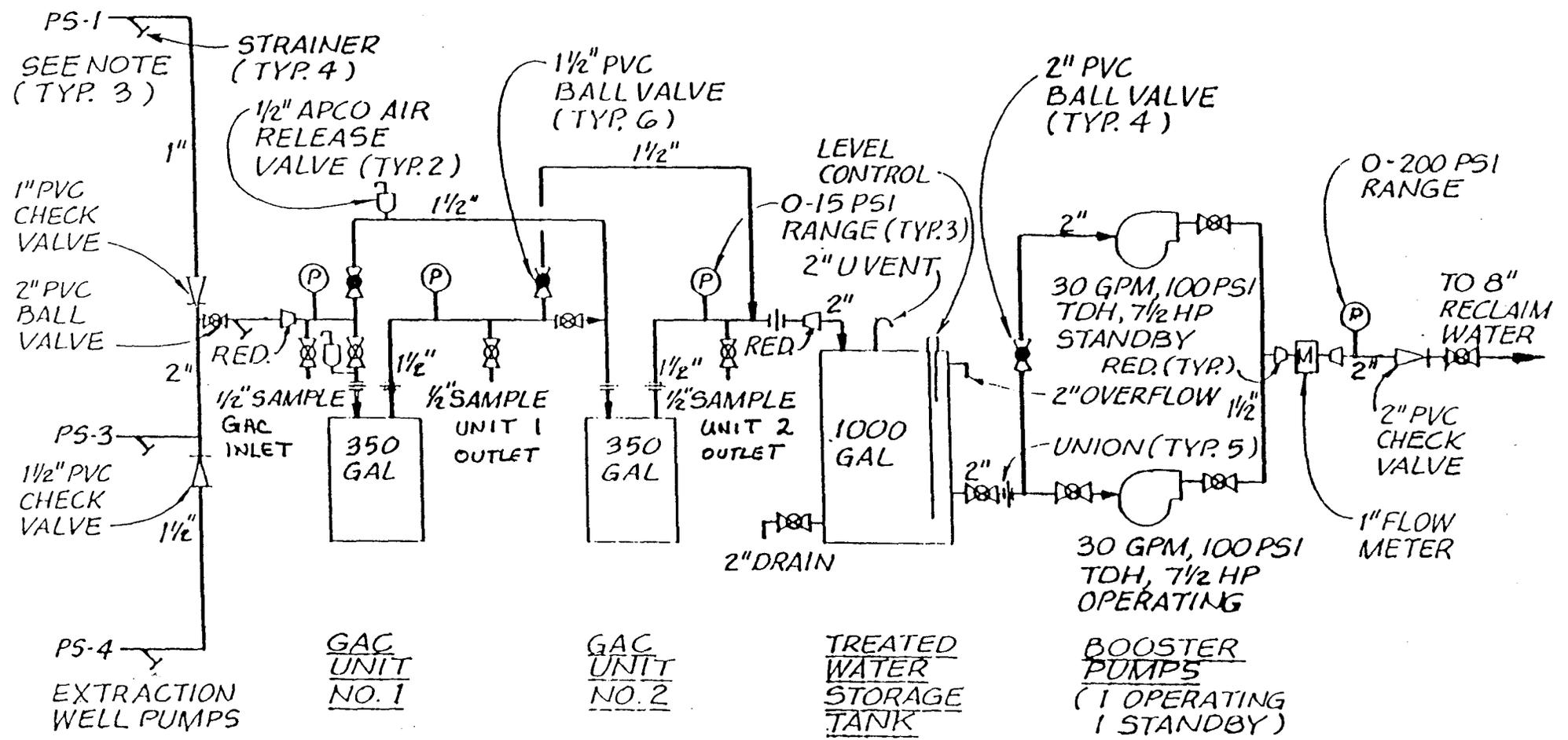
Legend: NA - No Analysis, ND - Nondetectable

**TABLE 2**  
**MCAS EL TORO INTERIM GROUNDWATER TREATMENT SYSTEM**  
**SUMMARY OF FLOW RATES**

	<u>7/7/89</u>	<u>7/29/89</u>	<u>9/11/89</u>	<u>10/13/89</u>	<u>11/13/89</u>	1989 <u>TOTALS</u>
<u>PS-1</u>						
Meter Reading, Gallons	N/A	300	569	8,100	8100	
Gallons Pumped	0	300	269	7,531	0	8,100
Days	0	22	44	32	31	129
Average Flow, gpm	0	0.01	0.004	0.16	0	0.04
<u>PS-3</u>						
Meter Reading, Gallons	6,470	22,580	235,590	368,870	550,750	
Gallons Pumped	2,970	16,110	213,010	133,280	181,880	550,750
Days	0	22	44	32	31	129
Average Flow, gpm	16.5	0.5	3.4	2.9	4.1	3.0
<u>PS-4</u>						
Meter Reading, Gallons	5,930	189,730	426,500	569,870	732,470	
Gallons Pumped	1,860	183,800	236,770	143,370	162,600	732,470
Days	0	22	44	32	31	129
Average Flow, gpm	10.3	5.8	3.7	3.1	3.6	3.9
<u>GAC Outlet</u>						
Meter Reading, Cubic Feet	1,301	28,813	90,188	125,422	172,487	
Gallons Pumped	4,555	205,790	459,085	263,350	352,046	1,290,203
Days	0	22	44	32	31	129
Average Flow, gpm	25.3	6.5	7.2	5.7	7.9	6.9
<u>Golf Course Storage Tank Inlet</u>						
Meter Reading, Cubic Feet	39,903,500	41,678,000	44,641,300	45,982,500	46,757,000	
Gallons Pumped		13,273,260	22,165,484	10,032,176	5,793,260	
Days		22	44	32	31	129
Average Flow, gpm		419	350	218	130	276
Treated Groundwater as a % of Golf Course Irrigation Water		1.6%	2.1%	2.7%	6.1%	2.5%

E1-OR-MQ-31  
 INTERIM GROUNDWATER  
 TREATMENT SYSTEM  
 SCHEMATIC FLOW DIAGRAM

FIGURE 1



**ANALYTICAL RESULTS**

**MONTGOMERY LABORATORIES**  
 a division of James M. Montgomery, Consulting Engineers, Inc.  
 555 East Walnut Street, Pasadena, California 91101  
 (818) 796-9141 / (213) 681-4255 Telex 67-5420

Report of GC/MS Analysis for  
 VOLATILE ORGANICS  
 in Water

Navy (MCAS EL TORO) / JMM-WCK  
 501 Lennon Lane  
 Suite 200  
 Walnut Creek, CA 94598  
 Attn: Jenny Goodell

Job#: 226.0030  
 PO#: 226.0380  
 Workorder#: W25391  
 Report#: R11778  
 Phone #: 415-933-2250

Date Sampled: 11/13/89  
 Date Analyzed: 11/14/89

Date Received: 11/13/89

Lab Number: JB7458  
 Sample I.D.: GAC 1

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

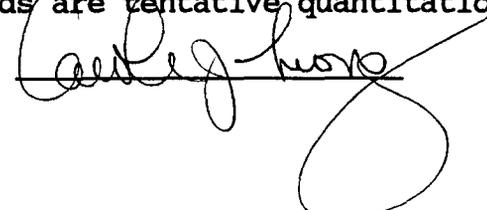
**VOLATILE PRIORITY POLLUTANTS:**

Acrolein	ND	25
Acrylonitrile	ND	25
Benzene	ND	2.5
Bromoform	ND	2.5
Carbon Tetrachloride	ND	2.5
Chlorobenzene	ND	2.5
Dibromochloromethane	ND	2.5
Chloroethane	ND	25
2-Chloroethylvinylether	ND	25
Chloroform	ND	2.5
Dichlorobromomethane	ND	2.5
1,1-Dichloroethane	ND	2.5
1,2-Dichloroethane	ND	2.5
1,1-Dichloroethene	ND	2.5
1,2-Dichloropropane	ND	2.5
Ethylbenzene	ND	2.5
Methyl Bromide	ND	25
Methyl Chloride	ND	25
Methylene Chloride	ND	125
1,1,2,2-Tetrachloroethane	ND	2.5

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Approved by 

**APPROVED**

**NOV 15 1989**

**QC OFFICER**

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Lab Number: JB7458  
Sample I.D.: GAC 1

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

VOLATILE PRIORITY POLLUTANTS (continued):

Tetrachloroethene	68	2.5
Toluene	ND	12.5
1,1,1-Trichloroethane	ND	2.5
1,1,2-Trichloroethane	ND	2.5
Trichloroethene	150	2.5
Vinyl Chloride	ND	25
trans-1,3-Dichloropropene	ND	2.5
cis-1,3-Dichloropropene	ND	2.5
trans-1,2-Dichloroethene	ND	2.5
cis-1,2-Dichloroethene	5.0	2.5
Trichlorofluoromethane	ND	25
m,p-Xylenes	ND	2.5
1,2-Dichlorobenzene	ND	2.5
1,3-Dichlorobenzene	ND	2.5
1,4-Dichlorobenzene	ND	2.5

HAZARDOUS SUBSTANCES COMPOUNDS:

Acetone	ND	250
2-Butanone	ND	25
Carbon disulfide	ND	2.5
2-Hexanone	ND	25
4-Methyl-2-Pentanone	ND	25
Styrene	ND	2.5
Tetrahydrofuran	ND	250
Vinyl Acetate	ND	125
o-Xylene	ND	2.5

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

---

Lab Number: JB7458  
Sample I.D.: GAC 1

---

Compound	Recovery ( % )	QC Limits ( % )
----------	-------------------	--------------------

---

SURROGATE:

4-Bromofluorobenzene	91	86-115
1,2-Dichloroethane-d4	102	76-114
Toluene-d8	109	88-110

---

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

**MONTGOMERY LABORATORIES**  
 a division of James M. Montgomery, Consulting Engineers, Inc.  
 555 East Walnut Street, Pasadena, California 91101  
 (818) 796-9141 / (213) 681-4255 Telex 67-5420

Report of GC/MS Analysis for  
 VOLATILE ORGANICS  
 in Water

Navy(MCAS EL TORO)/JMM-WCK  
 501 Lennon Lane  
 Suite 200  
 Walnut Creek, CA 94598  
 Attn: Jenny Goodell

Job#: 226.0030  
 PO#: 226.0380  
 Workorder#: W25391  
 Report#: R11780  
 Phone #: 415-933-2250

Date Sampled: 11/13/89  
 Date Analyzed: 11/14/89

Date Received: 11/13/89

Lab Number: JB7460  
 Sample I.D.: GAC 2

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

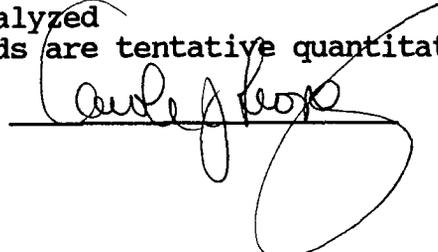
**VOLATILE PRIORITY POLLUTANTS:**

Acrolein	ND	1.0
Acrylonitrile	ND	1.0
Benzene	ND	0.10
Bromoform	ND	0.10
Carbon Tetrachloride	ND	0.10
Chlorobenzene	ND	0.10
Dibromochloromethane	ND	0.10
Chloroethane	ND	1.0
2-Chloroethylvinylether	ND	1.0
Chloroform	1.4	0.10
Dichlorobromomethane	ND	0.10
1,1-Dichloroethane	0.4	0.10
1,2-Dichloroethane	ND	0.10
1,1-Dichloroethene	ND	0.10
1,2-Dichloropropane	ND	0.10
Ethylbenzene	ND	0.10
Methyl Bromide	ND	1.0
Methyl Chloride	ND	1.0
Methylene Chloride	ND	5.0
1,1,2,2-Tetrachloroethane	ND	0.10

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Approved by 

**APPROVED**

**NOV 15 1989**

**QC OFFICER**

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Lab Number: JB7460  
Sample I.D.: GAC 2

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

VOLATILE PRIORITY POLLUTANTS (continued):

Tetrachloroethene	ND	0.10
Toluene	ND	0.50
1,1,1-Trichloroethane	ND	0.10
1,1,2-Trichloroethane	ND	0.10
Trichloroethene	ND	0.10
Vinyl Chloride	ND	1.0
trans-1,3-Dichloropropene	ND	0.10
cis-1,3-Dichloropropene	ND	0.10
trans-1,2-Dichloroethene	ND	0.10
cis-1,2-Dichloroethene	1.4	0.10
Trichlorofluoromethane	ND	1.0
m,p-Xylenes	ND	0.10
1,2-Dichlorobenzene	ND	0.10
1,3-Dichlorobenzene	ND	0.10
1,4-Dichlorobenzene	ND	0.10

HAZARDOUS SUBSTANCES COMPOUNDS:

Acetone	ND	10
2-Butanone	ND	1.0
Carbon disulfide	ND	0.10
2-Hexanone	ND	1.0
4-Methyl-2-Pentanone	ND	1.0
Styrene	ND	0.10
Tetrahydrofuran	ND	10
Vinyl Acetate	ND	5.0
o-Xylene	ND	0.10

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

---

Lab Number: JB7460  
Sample I.D.: GAC 2

---

Compound	Recovery ( % )	QC Limits ( % )
SURROGATE:		
4-Bromofluorobenzene	100	86-115
1,2-Dichloroethane-d4	104	76-114
Toluene-d8	103	88-110

---

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

**MONTGOMERY LABORATORIES**  
 a division of James M. Montgomery, Consulting Engineers, Inc.  
 555 East Walnut Street, Pasadena, California 91101  
 (818) 796-9141 / (213) 681-4255 Telex 67-5420

Report of GC/MS Analysis for  
**VOLATILE ORGANICS**  
 in Water

Navy(MCAS EL TORO)/JMM-WCK  
 501 Lennon Lane  
 Suite 200  
 Walnut Creek, CA 94598  
 Attn: Jenny Goodell

Job#: 226.0030  
 PO#: 226.0380  
 Workorder#: W25391  
 Report#: R11781  
 Phone #: 415-933-2250

Date Sampled: 11/13/89  
 Date Analyzed: 11/14/89

Date Received: 11/13/89

Lab Number:  
 Sample I.D.:

JB7461  
 GAC 3

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

**VOLATILE PRIORITY POLLUTANTS:**

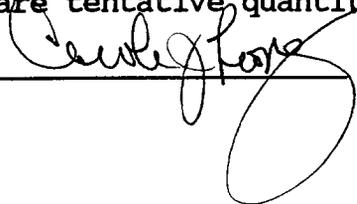
Acrolein	ND	1.0
Acrylonitrile	ND	1.0
Benzene	ND	0.10
Bromoform	ND	0.10
Carbon Tetrachloride	ND	0.10
Chlorobenzene	ND	0.10
Dibromochloromethane	ND	0.10
Chloroethane	ND	1.0
2-Chloroethylvinylether	ND	1.0
Chloroform	ND	0.10
Dichlorobromomethane	ND	0.10
1,1-Dichloroethane	ND	0.10
1,2-Dichloroethane	ND	0.10
1,1-Dichloroethene	ND	0.10
1,2-Dichloropropane	ND	0.10
Ethylbenzene	ND	0.10
Methyl Bromide	ND	1.0
Methyl Chloride	ND	1.0
Methylene Chloride	ND	5.0
1,1,2,2-Tetrachloroethane	ND	0.10

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Approved by \_\_\_\_\_



**APPROVED**

**NOV 15 1989**

**QC OFFICER**

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Lab Number: JB7461  
Sample I.D.: GAC 3

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

VOLATILE PRIORITY POLLUTANTS (continued):

Tetrachloroethene	ND	0.10
Toluene	ND	0.50
1,1,1-Trichloroethane	ND	0.10
1,1,2-Trichloroethane	ND	0.10
Trichloroethene	ND	0.10
Vinyl Chloride	ND	1.0
trans-1,3-Dichloropropene	ND	0.10
cis-1,3-Dichloropropene	ND	0.10
trans-1,2-Dichloroethene	ND	0.10
cis-1,2-Dichloroethene	ND	0.10
Trichlorofluoromethane	ND	1.0
m,p-Xylenes	ND	0.10
1,2-Dichlorobenzene	ND	0.10
1,3-Dichlorobenzene	ND	0.10
1,4-Dichlorobenzene	ND	0.10

HAZARDOUS SUBSTANCES COMPOUNDS:

Acetone	ND	10
2-Butanone	ND	1.0
Carbon disulfide	ND	0.10
2-Hexanone	ND	1.0
4-Methyl-2-Pentanone	ND	1.0
Styrene	ND	0.10
Tetrahydrofuran	ND	10
Vinyl Acetate	ND	5.0
o-Xylene	ND	0.10

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

---

Lab Number: JB7461  
Sample I.D.: GAC 3

---

Compound	Recovery ( % )	QC Limits ( % )
----------	-------------------	--------------------

---

SURROGATE:

4-Bromofluorobenzene	100	86-115
1,2-Dichloroethane-d4	94	76-114
Toluene-d8	100	88-110

---

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

MONTGOMERY LABORATORIES  
a division of James M. Montgomery, Consulting Engineers, Inc.  
555 East Walnut Street, Pasadena, California 91101  
(818) 796-9141 / (213) 681-4255 Telex 67-5420

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Navy (MCAS EL TORO) / JMM-WCK  
501 Lennon Lane  
Suite 200  
Walnut Creek, CA 94598  
Attn: Jenny Goodell

Job#: 226.0030  
PO#: 226.0380  
Workorder#: W25391  
Report#: R11779  
Phone #: 415-933-2250

Date Sampled: 11/13/89  
Date Analyzed: 11/14/89

Date Received: 11/13/89

Lab Number:  
Sample I.D.:

JB7459  
GAC 1 DUP

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

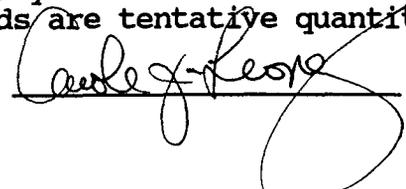
VOLATILE PRIORITY POLLUTANTS:

Acrolein	ND	25
Acrylonitrile	ND	25
Benzene	ND	2.5
Bromoform	ND	2.5
Carbon Tetrachloride	ND	2.5
Chlorobenzene	ND	2.5
Dibromochloromethane	ND	2.5
Chloroethane	ND	25
2-Chloroethylvinylether	ND	25
Chloroform	3.0	2.5
Dichlorobromomethane	ND	2.5
1,1-Dichloroethane	ND	2.5
1,2-Dichloroethane	ND	2.5
1,1-Dichloroethene	ND	2.5
1,2-Dichloropropane	ND	2.5
Ethylbenzene	ND	2.5
Methyl Bromide	ND	25
Methyl Chloride	ND	25
Methylene Chloride	ND	125
1,1,2,2-Tetrachloroethane	ND	2.5

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Approved by 

**APPROVED**  
NOV 15 1989  
QC OFFICER

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Lab Number: JB7459  
Sample I.D.: GAC 1 DUP

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

VOLATILE PRIORITY POLLUTANTS (continued):

Tetrachloroethene	59	2.5
Toluene	ND	12.5
1,1,1-Trichloroethane	ND	2.5
1,1,2-Trichloroethane	ND	2.5
Trichloroethene	130	2.5
Vinyl Chloride	ND	25
trans-1,3-Dichloropropene	ND	2.5
cis-1,3-Dichloropropene	ND	2.5
trans-1,2-Dichloroethene	ND	2.5
cis-1,2-Dichloroethene	6.5	2.5
Trichlorofluoromethane	ND	25
m,p-Xylenes	ND	2.5
1,2-Dichlorobenzene	ND	2.5
1,3-Dichlorobenzene	ND	2.5
1,4-Dichlorobenzene	ND	2.5

HAZARDOUS SUBSTANCES COMPOUNDS:

Acetone	ND	250
2-Butanone	ND	25
Carbon disulfide	ND	2.5
2-Hexanone	ND	25
4-Methyl-2-Pentanone	ND	25
Styrene	ND	2.5
Tetrahydrofuran	ND	250
Vinyl Acetate	ND	125
o-Xylene	ND	2.5

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

---

Lab Number: JB7459  
Sample I.D.: GAC 1 DUP

---

Compound	Recovery ( % )	QC Limits ( % )
----------	-------------------	--------------------

---

SURROGATE:

4-Bromofluorobenzene	98	86-115
1,2-Dichloroethane-d4	93	76-114
Toluene-d8	98	88-110

---

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

MONTGOMERY LABORATORIES  
a division of James M. Montgomery, Consulting Engineers, Inc.  
555 East Walnut Street, Pasadena, California 91101  
(818) 796-9141 / (213) 681-4255 Telex 67-5420

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Navy(MCAS EL TORO)/JMM-WCK  
501 Lennon Lane  
Suite 200  
Walnut Creek, CA 94598  
Attn: Jenny Goodell

Job#: 226.0030  
PO#: 226.0380  
Workorder#: W25391  
Report#: R11782  
Phone #: 415-933-2250

Date Sampled: 11/13/89  
Date Analyzed: 11/14/89

Date Received: 11/13/89

Lab Number:  
Sample I.D.:

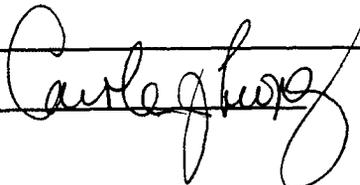
JB7462  
GAC 3 SPIKE

Compound % Recovery

VOLATILE PRIORITY POLLUTANTS:

Benzene	100
Chlorobenzene	88
1,1-Dichloroethene	120
Toluene	105
Trichloroethene	112

Approved by



**APPROVED**  
**NOV 16 1989**  
**QC OFFICER**

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

---

Lab Number: JB7462  
Sample I.D.: GAC 3 SPIKE

---

Compound	Recovery ( % )	QC Limits ( % )
SURROGATE:		
4-Bromofluorobenzene	98	86-115
1,2-Dichloroethane-d4	102	76-114
Toluene-d8	104	88-110

---

MONTGOMERY LABORATORIES  
 a division of James M. Montgomery, Consulting Engineers, Inc.  
 555 East Walnut Street, Pasadena, California 91101  
 (818) 796-9141 / (213) 681-4255 Telex 67-5420

Report of GC/MS Analysis for  
 VOLATILE ORGANICS  
 in Water

Navy (MCAS EL TORO)/JMM-WCK  
 501 Lennon Lane  
 Suite 200  
 Walnut Creek, CA 94598  
 Attn: Jenny Goodell

Job#: 226.0030  
 PO#: 226.0380  
 Workorder#: W25391  
 Report#: R11783  
 Phone #: 415-933-2250

Date Sampled: 11/13/89  
 Date Analyzed: 11/14/89

Date Received: 11/13/89

Lab Number:  
 Sample I.D.:

JB7463  
 TRAVEL BLANK 11/9/89

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

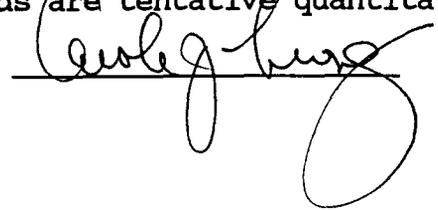
VOLATILE PRIORITY POLLUTANTS:

Acrolein	ND	1.0
Acrylonitrile	ND	1.0
Benzene	ND	0.10
Bromoform	ND	0.10
Carbon Tetrachloride	ND	0.10
Chlorobenzene	ND	0.10
Dibromochloromethane	ND	0.10
Chloroethane	ND	1.0
2-Chloroethylvinylether	ND	1.0
Chloroform	ND	0.10
Dichlorobromomethane	ND	0.10
1,1-Dichloroethane	ND	0.10
1,2-Dichloroethane	ND	0.10
1,1-Dichloroethene	ND	0.10
1,2-Dichloropropane	ND	0.10
Ethylbenzene	ND	0.10
Methyl Bromide	ND	1.0
Methyl Chloride	ND	1.0
Methylene Chloride	ND	5.0
1,1,2,2-Tetrachloroethane	ND	0.10

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Approved by 

**APPROVED**  
 NOV 16 1989  
 QC OFFICER

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

Lab Number:  
Sample I.D.:

JB7463  
TRAVEL BLANK 11/9/89

Compound	Concentration (micrograms/liter)	Detection Limit (micrograms/liter)
----------	-------------------------------------	---------------------------------------

VOLATILE PRIORITY POLLUTANTS (continued):

Tetrachloroethene	ND	0.10
Toluene	ND	0.50
1,1,1-Trichloroethane	ND	0.10
1,1,2-Trichloroethane	ND	0.10
Trichloroethene	ND	0.10
Vinyl Chloride	ND	1.0
trans-1,3-Dichloropropene	ND	0.10
cis-1,3-Dichloropropene	ND	0.10
trans-1,2-Dichloroethene	ND	0.10
cis-1,2-Dichloroethene	ND	0.10
Trichlorofluoromethane	ND	1.0
m,p-Xylenes	ND	0.10
1,2-Dichlorobenzene	ND	0.10
1,3-Dichlorobenzene	ND	0.10
1,4-Dichlorobenzene	ND	0.10

HAZARDOUS SUBSTANCES COMPOUNDS:

Acetone	ND	10
2-Butanone	ND	1.0
Carbon disulfide	ND	0.10
2-Hexanone	ND	1.0
4-Methyl-2-Pentanone	ND	1.0
Styrene	ND	0.10
Tetrahydrofuran	ND	10
Vinyl Acetate	ND	5.0
o-Xylene	ND	0.10

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.

Report of GC/MS Analysis for  
VOLATILE ORGANICS  
in Water

---

Lab Number: JB7463  
Sample I.D.: TRAVEL BLANK 11/9/89

---

Compound	Recovery ( % )	QC Limits ( % )
----------	-------------------	--------------------

---

SURROGATE:

4-Bromofluorobenzene	101	86-115
1,2-Dichloroethane-d4	100	76-114
Toluene-d8	107	88-110

---

ND: Not Detected

NA: Not Analyzed

HSL compounds are tentative quantitations based on single point calibration.