

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

ORDER NO. 88-133

SITE CLEANUP REQUIREMENTS

M/A COM, INC;  
AND  
NEW ENGLAND MUTUAL LIFE INSURANCE COMPANY

999 EAST ARQUES AVENUE FACILITY  
SUNNYVALE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

1. Groundwater pollution has been found at a site located at 999 East Arques Avenue, Sunnyvale, Santa Clara County. M/A Com, Inc., former owner of the site, and New England Mutual Life Insurance Company, the current owner, are hereinafter referred to as the dischargers.
2. Microwave Associates (West), Inc., now known as M/A Com, Inc., owned the site from August 1967 to October 1973. During the years 1967 - 1971, Microwave Associates (West) conducted ferrite processing and travelling wave tube fabrication. From 1968 to 1970, microwave semiconductors were fabricated and beginning in 1970, radio frequency equipment was fabricated.
3. Written manufacturing procedures used by Microwave Associates list cleaning processes (vapor degreasing and ultrasonic cleaning) that used TCE, the primary pollutant found onsite. Furthermore, a four-stage clarifier/sump on the exterior of the west end of the primary building on the subject site was found in 1987 to contain sludge polluted with 87,000 ppb TCE. Microwave Associates (West) is the only tenant still in operation known to have used this clarifier/sump.
4. New England Mutual Life Insurance Company obtained title to the subject site in October 1978 and retains current ownership.
5. In addition to the parties named in this Order, the following are known to have been owners and/or operators of facilities at the property: Ametek, Inc.; Bank of America; N. T. & S.A.; Melvin Brown; Huggins Laboratories, Inc.; M/A-Com, Inc., Mullen Equipment Company; Norsk Engineering,

Inc.; Poly Mold Tool & Engineering; Realex Development Corporation; Washington Associates; U.G.M., Inc. If additional information comes to light showing that any of these parties not currently named as a discharger caused or permitted any waste to be discharged or deposited on the 999 East Argus site where it entered or could have entered into the waters of the State, the Board will consider adding that party's name to this Order.

5. Groundwater pollution found in shallow wells on site include 9,700 ppb trichloroethylene (TCE), 730 ppb trichlorofluoromethane (freon-113), 140 ppb 1,1,1 trichloroethane (TCA), 53 ppb trans 1,2 dichloroethene (trans DCE), and 18 ppb 1,1 dichloroethene (DCE). The maximum downgradient pollution, found in a well approximately 250 feet downgradient from the building, is 2,500 ppb TCE.
6. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on December 17, 1986. The Basin Plan contains water quality objectives and beneficial uses for South San Francisco Bay and contiguous surface and groundwaters.
7. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facility include:
  - a. Industrial process water supply
  - b. Industrial service supply
  - c. Municipal and Domestic supply
  - d. Agricultural supply
8. The dischargers have caused or permitted, and threaten to cause or permit waste to be discharged or deposited where it is or probably will be discharged to waters of the State and creates or threatens to create a condition of pollution or nuisance.
9. This action is an order to enforce the laws and regulations administered by the Board. This action is categorically exempt from the provisions of the CEQA pursuant to Section 15321 of the Resources Agency Guidelines.
10. The Board has notified the dischargers and interested agencies and persons of its intent under California Water Code Section 13304 to prescribe Site Cleanup Requirements for the discharge and has provided them with the opportunity for a public hearing and an opportunity to submit their written views and recommendations.

11. The Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the dischargers shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.
2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.
2. The dischargers shall conduct monitoring activities as needed to define the current local hydrogeologic conditions, and the lateral and vertical extent of soil and groundwater pollution. Should monitoring results show evidence of plume migration, additional plume characterization may be required.

C. PROVISIONS

1. The discharger shall submit to the Regional Board acceptable monitoring program reports containing results of work performed according to a program prescribed by the Board's Executive Officer.
2. The discharger shall comply with Prohibitions A.1., A.2., and A.3., and Specifications B.1. and B.2. above, in accordance with the following time schedule and tasks:

COMPLETION DATE/TASK:

- a. **COMPLETION DATE:** September 1, 1988

**TASK: COMPLETION OF IDENTIFICATION AND CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks to identify all pollution sources onsite and to define the horizontal and vertical extent of the soil pollution onsite.

- b. **COMPLETION DATE:** September 1, 1988

**TASK: GROUNDWATER POLLUTION CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer containing a proposal to define the horizontal and vertical extent of offsite groundwater pollution.

- c. **COMPLETION DATE:** March 1, 1989

**TASK: COMPLETION OF GROUNDWATER CHARACTERIZATION:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task C.2.b.

- d. **COMPLETION DATE:** December 1, 1988

**TASK: INTERIM ONSITE REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer which contains an evaluation of interim onsite remedial alternatives, a recommended plan for interim remediation onsite, and an implementation time schedule. This report shall evaluate the removal and/or cleanup of polluted soils; evaluate alternative hydraulic control systems to contain and to initiate cleanup of polluted groundwater; and include a completed NPDES application to discharge to surface waters, if such discharge is an element of the plan.

- e. **COMPLETION DATE:** March 1, 1989

**TASK: COMPLETION OF INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task C.2.d.

- f. **COMPLETION DATE:** June 1, 1989

**TASK: EVALUATE INTERIM HYDRAULIC CONTAINMENT AND SOIL REMOVAL MEASURES:** Submit a technical report

satisfactory to the Executive Officer which evaluates the effectiveness of the interim onsite hydraulic containment system. Such an evaluation shall include, but need not be limited to, an estimation of the flow capture zone of the extraction wells, establishment of the cones of depression by field measurements, and presentation of chemical monitoring data, if extraction wells are proposed. This report shall also evaluate and document the removal and/or cleanup of polluted soils, if such removal and/or cleanup is an element of the remedial measures. Specific modifications to the system and an implementation time schedule shall be proposed in the event that the hydraulic control system is demonstrated not to be effective in containing and removing the onsite pollutants.

- g. **COMPLETION DATE:** September 1, 1989

**TASK: COMPLETION OF MODIFICATIONS TO INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task C.2.f.

- h. **COMPLETION DATE:** April 1, 1989

**TASK: INTERIM OFFSITE REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer which contains an evaluation of offsite interim remedial alternatives, a recommended plan for offsite interim remediation, and an implementation time schedule. This report shall evaluate alternative hydraulic control systems to contain and to initiate cleanup of polluted groundwater; and include a completed NPDES application to discharge to surface waters, if such discharge is an element of the plan.

- i. **COMPLETION DATE:** August 1, 1989

**TASK: COMPLETION OF INTERIM OFFSITE REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task C.2.h.

- j. **COMPLETION DATE:** November 1, 1989

**TASK: a) EVALUATION OF INTERIM OFFSITE HYDRAULIC CONTAINMENT AND SOIL REMOVAL MEASURES:** Submit a technical report satisfactory to the Executive Officer

which evaluates the effectiveness of the interim offsite hydraulic containment system. Such an evaluation shall include, but need not be limited to, an estimation of the flow capture zone of the extraction wells, establishment of the cones of depression by field measurements, and presentation of chemical monitoring data, if extraction wells are proposed. This report shall also evaluate and document the removal and/or cleanup of polluted soils, if such removal and/or cleanup is an element of the remedial measures.

**TASK: b) MODIFICATION TO INTERIM REMEDIAL ACTIONS:** Specific modifications to the system and an implementation time schedule shall be proposed in the event that the hydraulic control system is demonstrated not to be effective in containing and removing the offsite pollutants.

k. **COMPLETION DATE:** February 1, 1990

**TASK: COMPLETION OF MODIFICATIONS TO INTERIM REMEDIAL ACTIONS:** Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task C.2.j.(b).

l. **COMPLETION DATE:** May 1, 1990

**TASK: PROPOSED FINAL CLEANUP OBJECTIVES AND ACTIONS:** Submit a technical report acceptable to the Executive Officer containing the result of the remedial investigation; an evaluation of the installed interim remedial measures; a feasibility study evaluating alternative final remedial measures; the recommended measures necessary to achieve final cleanup objectives; and the tasks and time schedule necessary to implement the recommended final remedial measures.

3. The submittal of technical reports evaluating proposed interim and final remedial measures will include a projection of the cost, effectiveness, benefits and impact on public health, welfare, and environment of each alternative measure. The remedial investigation and feasibility study shall be considered guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Superfund Amendments and Reauthorization Act of 1986; CERCLA/SARA guidance documents with reference to Remedial Investigations and Feasibility Studies; and the State Water Resources Control Board's Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California."

4. If the dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the dischargers shall promptly notify the Executive Officer. In the event of such delays, the Board may consider modification of the task completion dates established in this Order.
5. Technical reports on compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted monthly to the Board commencing with the August 1988 report due on September 15, 1988. On a monthly basis thereafter, these reports shall consist of a brief letter report that, (1) summarizes work completed since submittal of the previous report, and work projected to be completed by the time of the next report, (2) identifies any obstacles which may threaten compliance with the schedule of this Order and what actions are being taken to overcome these obstacles, and (3) includes, in the event of non-compliance with Provisions of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order.
6. On a quarterly basis, commencing with the September 1988 quarterly report due October 15, 1988, the quarterly technical report shall include, but need not be limited to, updated water table and piezometric surface contour maps, pollution concentration contour maps for all affected water bearing zones, cross-sectional geological maps describing the hydrogeological setting of the site, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent facilities and structures.
7. The discharger shall submit to the Board according to the schedule shown below technical reports acceptable to the Executive Officer containing a Quality Assurance Project Plan, a Site Sampling Plan, and a Site Safety Plan. The Quality Assurance Project Plan, Site Sampling Plan and Site Safety Plan format and contents shall consider CERCLA regulation and guidance documents.

<u>Technical Report</u>	<u>Date Due</u>
a. Quality Assurance Project Plan	September 1, 1988
b. Site Sampling Plan	October 1, 1988
c. Site Safety Plan	September 1, 1988

8. All hydrogeological plans, specifications, reports, and documents shall be signed by or stamped with the seal of a registered geologist, engineering geologist or professional engineer.
9. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.
10. The discharger(s) shall maintain in good working order, and operate, as efficiently as possible, any facility or control system installed to achieve compliance with the requirements of this Order.
11. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be provided to the following agencies:
  - a. Santa Clara Valley Water District
  - b. Santa Clara County Health Department
  - c. City of Sunnyvale
  - d. State Department of Health Services/TSCD
  - e. Environmental Protection Agency, Region IX

The Executive Officer may additionally require copies of correspondence, reports and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order to be provided to the U.S. Environmental Protection Agency, Region IX, and to a local repository for public use.

12. The discharger(s) shall permit the Board or its authorized representative, in accordance with Section 13267(c) of the California Water Code:
  - a. Entry upon premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
  - b. Access to copy any records required to be kept under the terms and conditions of this Order.
  - c. Inspection of any monitoring equipment or methodology implemented in response to this Order.
  - d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the dischargers.

13. The discharger(s) shall file a report on any changes in site occupancy and ownership associated with the facility described in this Order.
14. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the dischargers shall report such a discharge to this Board, at (415) 464-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.
15. The Board will review this Order periodically and may revise the requirements when necessary.

I, Steven R. Ritchie, executive Officer, do hereby certify that the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 17, 1988.



Steven R. Ritchie  
Executive Officer