

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NO. 00-123**

**ADOPTION OF FINAL SITE CLEANUP REQUIREMENTS AND RESCISSION OF  
ORDER NO. 97-113 FOR:**

**FAIRCHILD SEMICONDUCTOR CORPORATION  
APPLIED MATERIALS INCORPORATED  
NCH COPORATION AND MOHAWK LABORATORIES**

for the property located at

974 EAST ARQUES AVENUE  
COMMERCIAL STREET OPERABLE UNIT, SUBUNIT 2  
SUNNYVALE; SANTA CLARA COUNTY

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

1. **Site Location:** The site is located at 974 East Arques Avenue, in Sunnyvale, Santa Clara County, and consists of approximately 35 acres located between East Arques Avenue to the north and Central Expressway to the south (Figure 1). Located on the site is a large building that is used for manufacturing and office space. Hazardous waste storage facilities were also located on the site. Areas surrounding the building are paved. Adjacent properties are developed for commercial and light manufacturing use. Residential areas are located within one-quarter mile of the site.
  
2. **Site History:** Fairchild Semiconductor Corporation (Fairchild) constructed the building located at 974 East Arques Avenue in 1967, and owned and occupied the property from 1968 to 1972. During that time Fairchild's manufacturing processes at the site included photo resist, screen printing, etching, alodining, and spray painting. Volatile organic compounds (VOCs) such as trichloroethene (TCE) were typically used in these processes during that time period. Fairchild also used an acid waste neutralization sump at the site.  
  
Hewlett Packard Company (HP) purchased the property in 1972, and utilized the site for light assembly, alodining, metal fabrication, and painting until 1993. From 1978 to 1986 HP used the sump to convey wastewater to the sanitary sewer. HP ceased manufacturing operations at the site in 1993. In 1995, Applied Materials Incorporated (AMAT) purchased the site. The site is currently owned by AMAT and has been renovated to serve as its Sunnyvale Campus.

3. **Operable Units and Subunits:** In 1996 Site Cleanup Requirements (SCR), the Board defined the Commercial Street Operable Unit (CSOU, Figure 2) and two subunits within the CSOU. Subunit 1 consists of the Mohawk Laboratories (Mohawk) site and the VOC-impacted groundwater plume extending northward from the Mohawk site to East Arques Avenue. Subunit 2 consists of the 974 East Arques Avenue site, which includes the VOC groundwater plume originating at the site, and the VOC groundwater pollution plume migrating onto the site from Subunit 1.

Mohawk, as the only confirmed source of VOC pollution within Subunit 1, is the sole discharger named responsible for addressing groundwater pollution in Subunit 1. The groundwater VOC pollution plume originating from Mohawk has migrated northward at least to East Arques Avenue, and into Subunit 2 of the CSOU. Historically, VOCs have migrated from the CSOU into the Stewart Drive Operable Unit (SDOU), which lies to the northeast of the CSOU, on the north side of East Arques Avenue.

It is the Board's intent that, commingling notwithstanding, the dischargers named for each subunit be held largely responsible for soil and groundwater pollution in their respective subunit. As additional information is generated in each subunit, the Board may modify the dischargers named in each subunit or may modify the subunit boundaries.

4. **Named Dischargers:** The patterns of soil and groundwater VOC pollution at the site indicate that releases occurred at the former acid waste neutralization sump. Because Fairchild used the sump and used TCE in its manufacturing process, Fairchild is named as a discharger. AMAT, as the current owner of the site, is also named as a discharger. AMAT will be responsible for compliance only in the event that other named dischargers fail to comply with the requirements of this order.

The board reserves jurisdiction over the question of whether to name Schlumberger Technology Corporation (Schlumberger) or National Semiconductor Corporation (National Semiconductor), given that both corporations are the former and current parent corporations, respectively, of Fairchild and given that the Board has not determined whether these firms exercised substantial management and control of Fairchild's activities. Fairchild became a wholly owned subsidiary of Schlumberger in 1979, and was sold to National Semiconductor in 1987. Schlumberger retained responsibility for managing Fairchild's environmental cleanup obligation at this site, as part of an indemnification agreement with National Semiconductor.

Mohawk and its parent company, NCH Corporation (NCH), are also named as dischargers. Mohawk and NCH are named because VOC pollution originating at their site has contributed to groundwater pollution at the 974 East Arques Avenue Site.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the site where it entered or could have entered waters of the state, the Board will consider adding those parties' names to this order.

5. **Regulatory Status:**

This site is subject to the following Board orders:

- Revised Site Cleanup Requirements Order No. 97-113 adopted September 17, 1997
- NPDES Permit (Order No. 99-051) adopted July 21, 1999

The purpose of this order is to rescind Order No. 97-113 and update the Site Cleanup Requirements to include tasks necessary to implement the Final Remedial Action Plan for Subunit 2.

6. **Site Hydrogeology:** The site is flat, and slopes gently toward the north and San Francisco Bay. Calabazas Creek, approximately 0.75 miles east of the site, is the nearest surface water. Fluvial deposits consisting of interbedded, laterally discontinuous layers of clay, silt, sand, and gravel underlie the site. A shallow groundwater zone, generally found between 10 and 30 feet below ground surface, is referred to as the A-zone aquifer. Groundwater in the A-zone is migrating northeasterly. The hydrogeologic conditions encountered at the site in the A-zone are typical of those found at other sites in the vicinity. A deeper groundwater zone, found between 35 and 50 feet below ground surface, is referred to as the B-zone aquifer. Regionally, groundwater flow in the B-zone is to the northwest. In Subunit 2, however, the groundwater flow direction in the B-zone is to the northeast. This localized departure from the regional B-Zone flow direction may result from ongoing dewatering in the basement of the main building at the site, or from extraction of groundwater from the upper portion of the B-Zone aquifer at two wells operated by National Semiconductor (wells 107 A/B1 and 108 A/B1), which are located along East Arques Avenue near the northeast corner of Subunit 2.

7. **Remedial Investigation:** Soil and groundwater samples obtained at the site indicate that VOCs, including TCE, 1,1,1-trichloroethane (1,1,1-TCA), cis-1,2-dichloroethene (cis-1,2-DCE), methylene chloride, and perchloroethene (PCE), have impacted soil and groundwater at the site. The source area has been identified as the former acid waste neutralization sump, which was located at the western edge of the building. Additionally, chemicals are migrating into Subunit 2 from upgradient sources in Subunit 1 of the CSOU. Levels of soil pollution in the unsaturated zone across the site are relatively low (less than the cleanup level of 1 mg/kg). However, groundwater pollution exists at levels significantly higher than drinking water standards. The current maximum TCE level in A-zone groundwater near the former sump location is 510 ppb. The maximum on-site cis-1,2-DCE level is 4,200 ppb along the western boundary of Subunit 2, upgradient of the former sump location. In the B-zone, levels of pollution range from non-detectable to very low (less than 5 ppb) in the immediate vicinity of the former sump.

8. **Adjacent Sites:** In addition to the Mohawk site (Subunit 1 of the CSOU), several other sites, which are confirmed or potential sources of soil and/or groundwater pollution, are located in the area. Immediately northeast of CSOU Subunit 2 is the Stewart Drive Operable Unit (SDOU), which consists of five subunits. SDOU includes the 999 Arques

Avenue Corporation site at 999 East Arques Avenue, the Sobrato Development Company site at 968-970 Stewart Drive, the CAE Electronics site at 1077 East Arques Avenue, and the commingled areas extending downgradient of the sites. Final Remedial Action Plans (RAPs) for the facilities in SDOU were adopted by the Board in November 1999.

Immediately east of CSOU Subunit 2 and SDOU is Operable Unit 1 (OU1), which consists of two federal Superfund sites. OU1 includes the National Semiconductor site at 2900 Semiconductor Drive, the former United Technologies Corporation (UTC) site at 1050 East Arques Avenue, the Advanced Micro Devices site at 1165 East Arques Avenue, and the commingled areas extending downgradient of the sites. The Board adopted final Remedial Action Plans (RAPs) for the facilities in OU1 in September 1991. As with other operable units, OU1 is divided into subunits.

Additional sources of VOC pollution in the vicinity of Subunit 1 of the CSOU include:

Confirmed and Potential Sources of VOC Pollution West of the CSOU

Pilkington Barnes Hind	895 Kifer Road
ICORE International	180 N. Wolfe Road
San Lazaro Properties	154, 158, and 162 San Lazaro Avenue
Phillips Semiconductor	730 E. Evelyn Avenue
Phillips Semiconductor	740 Kifer Road

Potential Sources of VOC Pollution within the CSOU

John Lincoln Company	172 Commercial Street
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Remedial investigations have been performed to varying degrees of completeness at all of the above sites. The sites within OU1 and the SDOU, and the Pilkington Barnes Hind and Philips Semiconductor sites have implemented interim or final groundwater remediation systems. Additional investigation is required in the area to the west of CSOU (in the vicinity of San Lazaro Avenue and the Pilkington Barnes Hind site) to determine the source(s) of known VOC groundwater contamination in that area.

Staff are currently evaluating whether additional site investigations are needed within CSOU Subunit 1 to determine if additional sources contributed to the VOC groundwater pollution plume that originates at the Mohawk site. Since the existing SCR Order for CSOU Subunit 2 was issued in September 1997, closure letters have been issued to the Sunnyvale Corporation Yard, Proto Engineering, Modern Machine and Western Precision on the basis of remedial investigation reports demonstrating that significant releases to the groundwater did not occur at those sites. Should new data become available that contradicts these findings, additional investigation at these and other sites may be warranted. The Board may further modify the orders for the CSOU depending on the results of future investigations.

9. **Interim Remedial Measures:** In October 1986, HP removed the acid waste neutralization system (including the sump) and excavated approximately 190 cubic yards of soil. In September 1995, an additional 3000 cubic yards of soil were excavated from the saturated and unsaturated zones in the area of the former sump.

In September 1987, HP began extracting groundwater from the area of the former underground sump. Extracted groundwater was treated utilizing an air stripper and discharged to the City of Sunnyvale sewer system until September 1995, when a reactive (iron-filings) wall was installed in the area of the former sump. The reactive wall is effectively remediating A-zone groundwater pollution in the immediate vicinity of the former sump.

Fairchild removed the old HP groundwater treatment system, installed two recovery wells, RW-1 and RW-2, and started the current groundwater treatment system in December 1998. One of the primary purposes of this groundwater recovery and treatment system is to limit further migration of VOCs from Subunit 2 of CSOU into SDOU. The current system has successfully lowered concentrations on-site as well as in wells immediately downgradient of Subunit 2 in the SDOU.

10. **Feasibility Study:** Locus Technologies submitted a Final Remedial Action Plan (FRAP) for Subunit 2 of CSOU in April 2000. The report includes a detailed screening of alternatives for soil and groundwater remedial actions necessary to meet specific remedial action objectives, including Applicable or Relevant and Appropriate Requirements (ARARs) required under federal or state law, and "To Be Considered" factors (TBCs) designated under the National Contingency Plan.

For soil, Order No. 97-113 specified a preliminary cleanup goal of 1 mg/kg total VOCs, 10 mg/kg total semi-volatile organic compounds (SVOCs), and background concentrations of metals. As indicated in that Order, VOC and SVOC levels in the unsaturated zone across the site are below the cleanup goals. Thus, no further actions are required to achieve the remedial action goals for soil.

Each potential remedial alternative for groundwater was evaluated based on 1) the overall protection of human health and the environment, 2) compliance with ARARs, 3) long-term effectiveness and permanence, 4) reduction of VOC toxicity, mobility, or volume, 5) short-term effectiveness, 6) implementability, 7) implementation and maintenance costs, 8) state acceptance, and 9) community acceptance.

The remedial action objectives are the reduction of VOC concentrations in Subunit 2 and limiting VOC migration from Subunit 2 to downgradient areas. However, in the absence of additional remedial work in upgradient Subunit 1, attainment of maximum cleanup levels (MCLs) may not be practical. Remedial alternatives included 1) no action, 2) continued groundwater extraction, institutional controls, and groundwater monitoring, and 3) natural attenuation, institutional controls, and groundwater monitoring.

11. **Cleanup Plan:** Based on the results of the evaluation, and in the absence of plume control measures in Subunit 1 of CSOU, the alternative recommended in the FRAP is continued extraction of groundwater from two recovery wells, treatment of extracted groundwater, institutional controls, and groundwater monitoring. Continued groundwater extraction and treatment appears to provide hydraulic control and removes chemical mass from the groundwater beneath the site. In the event that plume control measures are implemented in Subunit 1, the remedial alternative recommended in the FRAP may be evaluated to assess the necessity of continued groundwater extraction in Subunit 2.

The FRAP is based on approximately two years of data, which indicate that the current system has been effective in controlling further migration of VOCs at the downgradient subunit boundary along East Arques Avenue. The FRAP was approved by Board staff on September 18, 2000.

12. **Risk Assessment:** The risk assessment for the site included an evaluation of chemicals of concern. Chemicals used in the risk assessment include Freon-113; 1,1-dichloroethene; cis-1,2-dichloroethene; trans-1,2-dichloroethene; 1,1-dichloroethane; 1,2-dichloroethane; 1,1,1-trichloroethane (TCA); trichloroethene; tetrachloroethene; 1,1,2,2-tetrachloroethane; chloroform; vinyl chloride; and trichlorofluoromethane.

Chemicals were evaluated for carcinogenic and non-carcinogenic effects over long-term exposure. The risk assessment was based on current land use conditions, which are commercial. There is no reasonably foreseeable future land use other than the current land use. Potential chemical exposure scenarios considered include inhalation, ingestion, and dermal contact. Because groundwater beneath the site contains chemicals at levels up to three orders of magnitude greater than their respective maximum cleanup levels (MCLs), the lifetime excess cancer risk from ingestion of shallow groundwater, under current conditions, would exceed  $10^{-4}$ . For comparison, the Board considers the following risks to be acceptable at remediation sites: a hazard index of 1.0 or less for non-carcinogens, and an excess cancer risk of  $10^{-4}$  or less for carcinogens. However, such exposure is unlikely because there are no drinking water wells on the 974 East Arques Avenue site, and because groundwater at the site is roughly ten feet below ground surface and is not used for human consumption. For this reason, ingestion and dermal contact with groundwater have been eliminated as likely exposure pathways and are not further discussed in the risk assessment. The more likely exposure pathway at the site is through the volatilization of chemicals from groundwater to indoor and outdoor air. Using conservative assumptions to evaluate potential worker/tenant exposure to chemicals, the estimated maximum carcinogenic risk values for indoor and outdoor inhalation exposures at the site are  $7.9 \times 10^{-8}$  and  $4.9 \times 10^{-9}$ , respectively. The estimated maximum hazard indices for the site are 0.0011 and 0.00013 for indoor and outdoor exposures, respectively. These calculations indicate that inhalation exposure does not present a significant human health risk.

Although exposure to chemicals through ingestion or dermal contact is very unlikely, the unacceptable risk associated with these potential pathways indicates that institutional

constraints are appropriate to limit on-site exposure pending full remediation of groundwater to MCLs. Institutional constraints include a deed restriction that notifies future owners of subsurface contamination and prohibits the use of shallow groundwater beneath the site as a source of drinking water until cleanup standards are met.

### 13. Basis for Cleanup Standards

- a) **General:** State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality that is reasonable if background levels of water quality cannot be restored. Cleanup levels other than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives. The previously cited cleanup plan confirms the Board's initial conclusion that background levels of water quality cannot be restored due to migration of chemicals from upgradient sources and the limited cost effectiveness of available technologies. This order and its requirements are consistent with Resolution No. 68-16.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b) **Beneficial Uses:** The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in Title 23, California Code of Regulations, Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally high contaminant levels. Groundwater underlying and adjacent to the site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the site:

- Municipal and domestic water supply

- Industrial process water supply
- Industrial service water supply
- Agricultural water supply

At present, there is no known use of groundwater underlying the site for the above purposes.

- c) **Basis for Groundwater Cleanup Standards:** The groundwater cleanup standards for the site are based on applicable water quality objectives and are the more stringent of EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will result in acceptable residual risk to humans.
13. **Future Changes to Cleanup Standards:** The goal of this remedial action is to restore the beneficial uses of groundwater underlying and adjacent to the site. Results from other sites suggest that full restoration of beneficial uses to groundwater as a result of active remediation at this site may not be possible. If full restoration of beneficial uses is not technologically nor economically achievable within a reasonable period of time, then the dischargers may request modification to the cleanup standards or establishment of a containment zone, a limited groundwater pollution zone where water quality objectives are exceeded. Conversely, if new technical information indicates that cleanup standards can be surpassed, the Board may decide that further cleanup actions should be taken.
14. **Reuse or Disposal of Extracted Groundwater:** Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.
15. **Basis for 13304 Order:** The dischargers have caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.
16. **Cost Recovery:** Pursuant to California Water Code Section 13304, the dischargers is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
17. **CEQA:** This action is an order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.
18. **Notification:** The Board has notified the dischargers and all 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 an opportunity to submit their written comments.

19. **Public Hearing:** The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

**IT IS HEREBY ORDERED**, pursuant to Section 13304 of the California Water Code, that the dischargers (or their agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

**A. PROHIBITIONS**

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances 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 wastes or hazardous substances, are prohibited.

**B. CLEANUP PLAN AND CLEANUP STANDARDS**

1. **Implement Cleanup Plan:** The dischargers shall implement the cleanup plan described in finding 11.
2. **Groundwater Cleanup Standards:** The following groundwater cleanup standards shall be met in all wells identified in the Self-Monitoring Program:

Constituent	Standard (ug/l)	Basis
Freon-113	1200	California MCL
1,1-dichloroethane (1,1-DCA)	5	California MCL
1,1-dichloroethene (1,1-DCE)	6	California MCL
cis-1,2-dichloroethene (cis-1,2-DCE)	6	California MCL
trans-1,2-dichloroethene (trans-1,2-DCE)	10	California MCL
1,1,1-trichloroethane (TCA)	200	California/EPA MCL

Trichloroethene (TCE)	5	California/EPA MCL
Tetrachloroethene (PCE)	5	California/EPA MCL
Chloroform	100*	California/EPA MCL

\* The dischargers may meet this limit for total trihalomethanes.

### C. TASKS

The implementation of the FRAP requires the continued operation of the onsite groundwater recovery wells and treatment facility. No additional tasks or timeline are required to perform this action.

#### 1. PROPOSED INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: March 30, 2001

Submit a technical report acceptable to the Executive Officer documenting procedures to be used by the discharger to prevent or minimize human exposure to soil and groundwater contamination prior to meeting cleanup standards. Such procedures shall include a deed restriction prohibiting the use of shallow groundwater as a source of drinking water on the 974 East Arques Avenue property.

#### 2. IMPLEMENTATION OF INSTITUTIONAL CONSTRAINTS

COMPLIANCE DATE: 60 days after Executive Officer approval of the Task 1 technical report

Submit a technical report acceptable to the Executive Officer documenting that the proposed institutional constraints have been implemented.

#### 3. FIVE-YEAR STATUS REPORT

COMPLIANCE DATE: November 29, 2005

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved cleanup plan. The report should include:

- a. A summary of the cleanup plan's effectiveness in controlling contaminant migration and protecting human health and the environment
- b. A comparison of contaminant concentration trends with cleanup standards

- c. A comparison of anticipated versus actual costs of cleanup activities
- d. Performance data (e.g. groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted)
- e. Cost effectiveness data (e.g. cost per pound of contaminant removed)
- f. A summary of additional investigations (including results) and significant modifications to remediation systems
- g. Additional remedial actions proposed to meet cleanup standards (if applicable) including time schedule

If cleanup standards have not been met and are not projected to be met within a reasonable time, the report should assess the technical practicability of meeting cleanup standards and may propose an alternative cleanup strategy.

#### 4. **PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g. well abandonment), system suspension (e.g. cease extraction but wells retained), and significant system modification (e.g. major reduction in extraction rates, closure of individual extraction wells within extraction network). The report should include the rationale for curtailment. Proposals for final closure should demonstrate that cleanup standards have been met, contaminant concentrations are stable, and contaminant migration potential is minimal.

#### 5. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer approval of the Task 4 technical report.

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 4.

#### 6. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved cleanup plan of revising one or more cleanup standards in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

7. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after requested  
by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information bearing on the approved cleanup plan and cleanup standards for this site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved cleanup plan or cleanup standards.

8. **Delayed Compliance:** If the dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the dischargers shall promptly notify the Executive Officer and the Board may consider revision to this Order.

**D. PROVISIONS**

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).
2. **Good Operation & Maintenance:** The dischargers 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.
3. **Cost Recovery:** The dischargers shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the dischargers over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.
4. **Access to Site and Records:** In accordance with California Water Code Section 13267(c), the dischargers shall permit the Board or its authorized representative:

- a. Entry upon premises in which any pollution source exists, 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 requirements of this Order.
  - c. Inspection of any monitoring or remediation facilities installed 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.
5. **Self-Monitoring Program:** The dischargers shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.
6. **Contractor / Consultant Qualifications:** All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.
7. **Lab Qualifications:** 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 (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).
8. **Document Distribution:** Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:
- a. City of Sunnyvale, Department of Public Safety
  - b. County of Santa Clara, Department of Environmental Health
  - c. Santa Clara Valley Water District
- The Executive Officer may modify this distribution list as needed.
9. **Reporting of Changed Owner or Operator:** The dischargers shall file a technical report on any changes in site occupancy or ownership associated with the property described in this Order.
10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the dischargers

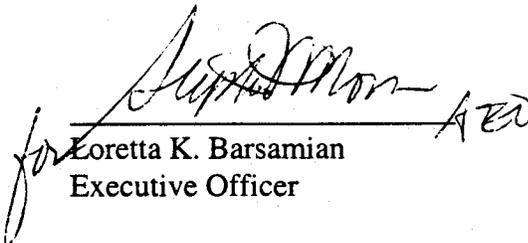
shall report such discharge to the Regional Board by calling (510) 622-2300 during regular office hours (Monday through Friday, 8:00 to 5:00).

A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Rescission of Existing Order:** This Order supercedes and rescinds Order No. 97-113.
12. **Periodic SCR Review:** The Board will review this Order periodically and may revise it when necessary.

I, Loretta K. Barsamian, 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 November 29, 2000.

  
for Loretta K. Barsamian  
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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Attachments: Site Map, Self-Monitoring Program

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

FAIRCHILD SEMICONDUCTOR CORPORATION  
APPLIED MATERIALS INCORPORATED  
NCH COPORATION AND MOHAWK LABORATORIES

for the property located at

974 EAST ARQUES AVENUE  
COMMERCIAL STREET OPERABLE UNIT, SUBUNIT 2  
SUNNYVALE; SANTA CLARA COUNTY

1. **Authority and Purpose:** The Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code Sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Board Order No. 00-XXX (site cleanup requirements).
2. **Monitoring:** The dischargers shall measure groundwater elevations semiannually in all accessible monitoring wells; and, shall sample the iron filings wall monitoring points annually. Representative groundwater samples shall be collected and analyzed according to the following table:

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
EW-01A	SA	8010 <sup>(1)</sup>	M24A	A	8010
M1A	B	8010	M26A	A	8010
M4A	SA	8010	PB-3	SA	8010
M5A	SA	8010	PB-6	SA	8010
M6A	SA	8010	M1B	A	8010
M7A	SA	8010	M4B	A	8010
M8A	A	8010	M7B	A	8010
M12A	A	8010	M20B	A	8010

Well #	Sampling Frequency	Analyses	Well #	Sampling Frequency	Analyses
M13A	A	8010	M22B	B	8010
M16A	B	8010	M25B	A	8010
M17A	B	8010	M27B	A	8010
M20A	A	8010	RW-1	SA	8010
M22A	SA	8010	RW-2	SA	8010

<sup>(1)</sup> 8010 = EPA Method 8010 or equivalent

Key: SA = Semi-Annually                      A = Annually                      B = Biennially

The dischargers shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The dischargers may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

3. **Semi-Annual Monitoring Reports:** The dischargers shall submit semi-annual monitoring reports to the Board no later than 30 days following the end of the second and fourth quarters (e.g. report for first half of the year is due July 30). The first semi-annual monitoring report shall be due on January 30, 2001. The reports shall include:
  - a. **Transmittal Letter:** The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the dischargers' principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
  - b. **Groundwater Elevations:** Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for the "A" aquifer. Historical groundwater elevations shall be included in January 30 monitoring report.
  - c. **Groundwater Analyses:** Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the January 30 monitoring report. The report shall describe any significant increases in contaminant concentrations since the



SITE LOCATION MAP  
 974 EAST ARGUES AVENUE SITE  
 SUNNYVALE, CALIFORNIA  
 PREPARED FOR  
 FAIRCHILD  
 SEMICONDUCTOR CORP.

△	6-5-88	ISSUED FOR REPORT	VZC	M3G	EM
No.	DATE	ISSUE / REVISION	OWN.	BY	CHK'D BY



DRAWING NO. 97-130-A25  
 FIGURE 1

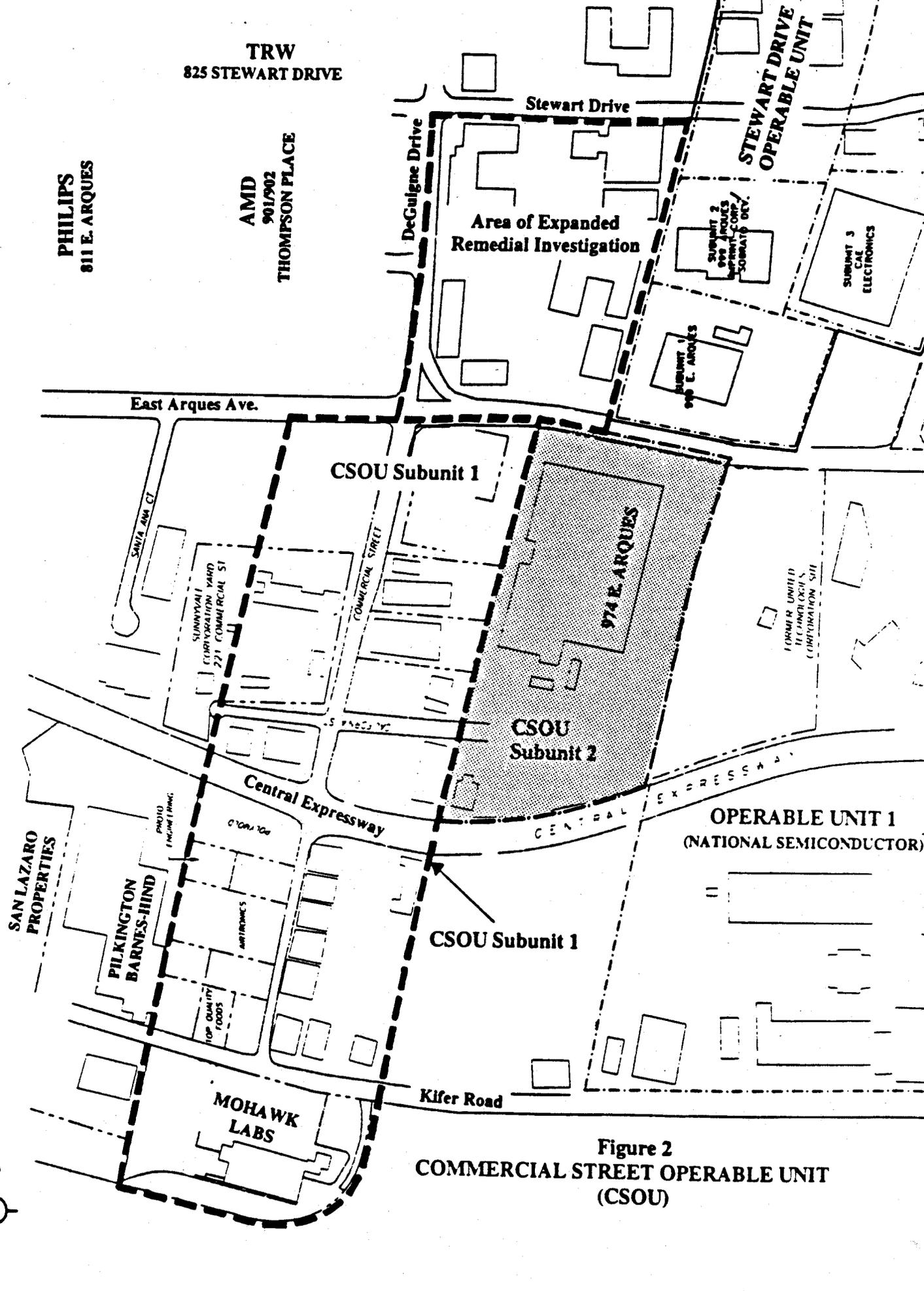


Figure 2  
 COMMERCIAL STREET OPERABLE UNIT  
 (CSOU)