CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 90 - 119

SITE CLEANUP REQUIREMENTS FOR:

SIEMENS COMPONENTS, INC.
19000 HOMESTEAD ROAD
CUPERTINO
SANTA CLARA COUNTY

INTERSIL, INC.
10900 NORTH TANTAU AVE.
CUPERTINO
SANTA CLARA COUNTY

VALLCO PARK, LTD.
CUPERTINO
SANTA CLARA COUNTY

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

1. Site Location and Description This Order presents the selected final remedial action plan for the Intersil / Siemens proposed Superfund site. The Siemens Components, Inc. (Siemens) facility is located at 19000 Homestead Road, Cupertino, and the former Intersil, Inc. (Intersil) facility is located at 10900 North Tantau Ave., Cupertino (Figure 1). Siemens and Intersil lease their respective properties from the property owner, Vallco Park, Ltd.

   The properties are located on approximately 12 acres at the southeast corner of North Tantau Ave. and Homestead Rd. in Cupertino near the borders of the City of Sunnyvale and the City of Santa Clara. The two properties are adjacent to each other, separated by Forge Drive (Figure 1). The surrounding terrain gently slopes northeast towards San Francisco Bay, which lies approximately 7.5 miles north of the Site. Calabazas Creek lies approximately 0.2 miles east of the Site and flows to the northeast.

2. Description of the Selected Remedy The selected remedy for the sites consists of:

   - Soil vapor extraction and treatment and soil excavation for soil cleanup
   - Groundwater extraction and treatment for groundwater cleanup
   - Shallow zone and deeper aquifer groundwater monitoring and soil monitoring

   There are currently seven soil vapor extraction wells and nine groundwater extraction wells operating at the Site. The final remedial action plan will include the installation of 16 additional soil vapor extraction wells and 10 additional groundwater extractions wells. Vapor phase carbon adsorption will be used for the soil vapor treatment and air stripping will be used for groundwater treatment.

3. Administrative Orders The following administrative orders have been adopted for Siemens and Intersil:

   Siemens
   - June 1986 - Order No. 86-48, Waste Discharge Requirements (Site Cleanup Requirements)

- May 1987 - Order No. 87-045, NPDES No. CA0029190
- September 1987 - Cleanup and Abatement Order No. 87-133
- March 1989 - Order No. 89-038, Site Cleanup Requirements

Intersil

- April 1986 - Administrative Civil Liability
- June 1986 - Order No. 86-49, Waste Discharge Requirements (Site Cleanup Requirements)
- September 1987 - Cleanup and Abatement Order No. 87-133
- October 1987 - Order No. 87-133, NPDES No. CA0029262
- March 1989 - Order No. 89-133, Site Cleanup Requirements

4. Site History Siemens produces a variety of light emitting diode (LED) semiconductor products used as components in optoelectronic products. Until approximately 1988, the manufacturing process consisted of LED ingot growing (where a gallium arsenide ingot was produced), and currently consists of wafer fabrication. Intersil formerly assembled semiconductor devices, including low power complimentary metal oxide semiconductors, and linear and discrete semiconductors, for use in various electronic components. Processes included wafer masking, etching and diffusion.

The underground waste handling facilities formerly used at Siemens included five unvaulted waste solvent tanks and an unvaulted acid dilution basin. The five waste solvent tanks and the acid dilution basin have been excavated. Siemens currently treats wastewater using an acid neutralization system and stores waste solvents above ground. Mark Systems, Inc. initially occupied the property in 1968. Litronix, Inc. occupied the facility from 1971 to 1978. Litronix was purchased by Siemens during the period of 1977 to 1978 and the facility has been operated by Siemens since that time.

The underground waste handling facilities formerly used at Intersil included two vaulted and one unvaulted acid neutralization systems, two unvaulted scrubber sumps and a vaulted waste solvent tank. All the underground facilities have been excavated. The Intersil facility was in operation from 1967 to 1988.

The Siemens semiconductor manufacturing operations have used various organic solvents including trichloroethene (TCE), 1,1,1-trichloroethane (TCA), methanol, isopropanol (IPA), n-butyl acetate, acetone, xylene, Freon, and commercial mixtures apparently containing trichlorobenzene (TCB), phenols and toluene. The Intersil semiconductor fabrication operations have used various organic solvents including TCE, TCA, Freon, xylenes, IPA, n-butyl acetate, acetone, ethyl benzene, and commercial mixtures apparently containing phenols and toluene.

In 1982, Intersil and Siemens submitted Facility Questionnaires to Regional Board staff describing their underground neutralization systems, sumps, and tanks. Based on these submittals, staff required the initiation of the remedial investigation (RI) at Siemens and Intersil in 1982. The RI has been ongoing for the last eight years. Interim remedial actions began at Siemens in 1983 with the startup of a soil vapor extraction system. Groundwater extraction and treatment began at Siemens in 1986. Interim remedial actions began at Intersil in 1986 when the inactive neutralization system was removed, and continued in 1987 with the startup of a groundwater extraction and soil vapor extraction system. The feasibility study (FS) evaluates the interim remedial actions that have been ongoing for the last seven years and evaluates alternatives for the final remedial action. Intersil and Siemens have submitted Remedial Investigation / Feasibility Study (RI/FS) reports for the on-site and off-site areas. The on-site area for each company is the area within the respective property

boundaries. The RI/FS reports summarize the last eight years of the RI and the last seven years of the interim remedial actions.

5. Soil Investigation Releases of chemicals have occurred from both the Siemens and Intersil underground waste handling facilities. Initial subsurface investigations at the Siemens property have shown solvent concentrations in the soil as high as 21,000 parts per million (ppm) n-butyl acetate immediately beneath former tank 1A and 11,000 ppm TCA, 17 ppm TCE and 15,200 ppm trichlorobenzenes immediately beneath former tank 3. Investigations at the Siemens property show solvent concentrations in the soil as high as 36 ppm TCA at a depth of 46 feet and 70 ppm TCE at a depth of 30 feet. Siemens has installed 62 soil borings to define the extent of the soil pollution. The extent of soil pollution has been defined to 1 ppm TCE or nondetect levels of TCE towards the west at the Siemens property boundary, towards the east 200 feet east of the Siemens hazardous material storage area, and on the north between Homestead Road and Lorne Way. At the northern border of the Siemens property on the south side of Homestead Road, TCE was detected in a soil boring at 40, 50, 80, and 100 feet deep at concentrations of 1.4, 1.8, 2.7, and 2.5 ppm, respectively. The southerly extent of the Siemens soil pollution blends together with the northerly extent of the Intersil soil pollution.

   TCE concentrations at Intersil have been found as high as 3.3 ppm in two soil borings at depths of 26 and 41 feet in a soil boring near the former inactive east acid neutralization system and up to 10 ppm at a depth of 59.5 feet in a soil boring near the north scrubber sump. Intersil has installed 64 soil borings and analyzed 529 soil samples to define the extent of the soil pollution. The extent of soil pollution has been defined to 1 ppm TCE or nondetect levels of TCE towards the west at 200 feet west of the western property boundary, to the south near the southern edge of the Intersil building, and to the east within the eastern property boundary. The northerly extent of the Intersil soil pollution blends together with the southerly extent of the Siemens soil pollution.

6. Hydrogeology The subsurface geology beneath the Site consists of a series of interbedded coarse-grained sand and gravel and fine-grained silt and clay sediment units, representing alluvial stream channel deposits and associated overbank deposits. The first saturated materials, a locally perched water zone, occurs at approximately 50 to 60 feet below the surface at some locations. The first laterally extensive saturated hydrogeologic unit, termed the A-zone, occurs between 105 and 120 feet below the ground surface. The next deeper permeable zone, the B-zone, occurs between approximately 130 and 150 feet below the ground surface. The next deeper relatively permeable zone, the C-zone, occurs between approximately 180 and 210 feet below the ground surface. Groundwater in the A-zone, B-zone and C-zone flows generally to the north, although local variations have been observed. A downward vertical gradient exists between the hydrogeologic zones. Deep aquifers exist beneath the Site at depths of approximately 300 to 500 feet below the ground surface, separated from the C-zone by an approximately 75 foot thick regional aquitard.

7. Groundwater Investigation Groundwater investigations at the Siemens and Intersil properties have shown the on-site and off-site A-, B-, and C-zones to be polluted with various organic solvents. 97 monitoring wells have been installed to define the extent of groundwater pollution. A-zone monitoring wells on the Siemens property have detected TCE concentrations as high as 26,000 parts per billion (ppb). A-zone monitoring wells on the Intersil property have detected TCE concentrations as high as 33,000 ppb. B-zone monitoring wells on the Siemens property have detected TCE concentrations as high as 5080 ppb and 1,1,1-TCA concentrations as high as 1030 ppb. B-zone monitoring wells on the Intersil property have detected TCE concentrations as high as 950 ppb. C-zone monitoring wells on the Siemens property have detected less than 40 ppb organic solvents.

The groundwater pollution plumes from Siemens and Intersil have commingled in the A-zone and have migrated to the B-zone and C-zone. The off-site groundwater pollution plume extends off-site approximately 1600 feet down gradient from the properties at concentrations greater than MCLs. The off-site A-zone groundwater plume extends north from the Site to Lorne Way. The off-site groundwater plume in the B- and C-zones extends north from the Site to several hundred feet north of Inverness Way. The off-site groundwater plumes appear to be defined. Monitoring well VM-1B at the far north eastern extent of the monitoring well network detected 10 ppb TCE. It appears that this may be part of the AMI groundwater plume.

8. Adjacent Facility Gould AMI Semiconductors (AMI) formerly manufactured electronic components at a site located at 3800 Homestead Road, Santa Clara. This site is immediately east of and adjacent to the Siemens and Intersil Site. The underground waste handling facilities formerly used by AMI included an acid neutralization system, a concrete sump and a steel storage tank. TCE has been detected in the A-zone at the AMI facility, north of the AMI facility, and beneath the Marchese property east of AMI, at concentrations up to 300 ppb. TCE has been detected off-site at concentrations up to 168 ppb. Additional investigation is required to define the extent of the off-site AMI TCE groundwater plume. AMI has proposed an interim remedial action system.

9. Deep Aquifer Investigation The former Marchese Well No. 2, a private, deep irrigation well located approximately one-half mile down gradient from Siemens and Intersil, was found to contain low levels (less than 30 ppb) of TCE, 1,1,1-TCA and Freon-113. In December 1986, this well was camera logged and sealed by the Santa Clara Valley Water District to prevent the further spread of pollutants through the well. Camera logging showed that the well was screened at three different intervals between 300 and 500 feet deep.

   Siemens and Intersil have installed four deep aquifer monitoring wells to attempt to identify which of the deeper aquifers screened by the former Marchese Well No. 2 contained VOCs. Since 1987, TCE has been sporadically detected in two deep aquifer monitoring wells at concentrations up to 1 ppb. TCE has not been detected in the deep aquifer wells for the last three quarters. TCA has been detected in the deep aquifer monitoring wells at concentrations up to 5 ppb. TCA has not been detected in the deep aquifer monitoring wells for the last two quarters. Toluene has been detected at concentrations up to 42 ppb. Toluene was detected at 20 ppb in one deep aquifer well during the last quarter. Any requirement for additional deep aquifer monitoring wells will be based on the results of future quarterly monitoring of the existing four deep aquifer monitoring wells.

10. Municipal Water Supply There are five active municipal wells within a one mile radius of the Siemens and Intersil properties. Three of these wells are located in apparent down gradient directions. All five wells are being monitored for volatile organic chemicals (VOCs) by the Cities of Santa Clara and Sunnyvale. City of Santa Clara well No. 24, down gradient approximately 3700 feet northeast of the site, has consistently shown 1 to 4.5 ppb Freon-113 and up to 2.6 ppb 1,1,1-TCA. No other pollutants have been detected in any of these wells to date.

11. Interim Remedial Actions Siemens has been performing soil and groundwater interim remedial actions at its property. A soil vacuum extraction system to remove volatile organics from the vadose zone has been in operation since November 1983, and is estimated to have removed approximately 13,200 pounds of VOCs. Siemens installed an A-zone groundwater extraction and treatment system in 1986. A combined A-zone and B-zone groundwater extraction and treatment system has been operating since 1987. Siemens' groundwater extraction systems have removed approximately 590 pounds of VOCs. Intersil has also been

performing soil and groundwater interim remedial actions at its site. A soil vacuum extraction system has been in operation since 1988, and is estimated to have removed approximately 2,300 pounds of TCE. An A-zone groundwater extraction and treatment system has been in operation since 1987, and is estimated to have removed approximately 43 pounds of TCE.

12. Baseline Public Health Evaluation A Baseline Public Health Evaluation (BPHE) was conducted for the site to evaluate current and potential future health risks posed by the site. Current risks are based on exposures that are presently occurring. Potential future health risks are based on exposures that could potentially occur in the future if residential development occurred on the Site or if untreated shallow zone groundwater was used for human consumption. To ensure that human health is protected, the BPHE incorporated conservative assumptions. Therefore, it is very unlikely that the actual risks posed by the Site would be greater than estimated. Average case and plausible maximum case scenarios are presented in the BPHE. This finding refers to the average case scenarios using a nine year duration exposure. Current exposures include ingestion of water from City of Santa Clara Well No. 24, inhalation of VOCs from the use of water from City of Santa Clara Well No. 24, and inhalation of chemicals volatilized from on-site soils. Freon 113 and TCA have been detected in Well No. 24 at average concentrations of 1.7 ppb and 1.0 ppb, respectively. These concentrations correspond to a noncarcinogen hazard index of 10^{-4}. This is 10,000 times less than the maximum acceptable hazard index of one. The carcinogenic risk from inhalation of chemicals volatilized from on-site soils is 10^{-11}. This is 100,000 times less than the maximum acceptable carcinogenic risk range of 10^{-6} to 10^{-4}. The hazard index for inhalation of VOCs volatilized from on-site soils is less than one. The BPHE concluded that with respect to current exposure scenarios, risks were well below acceptable levels.

Potential future use exposures include direct contact with on-site soils, ingestion of shallow and deeper zone groundwater, inhalation of VOCs from use of shallow or deeper zone groundwater, and inhalation of chemicals volatilized from on-site soils. The carcinogenic risk for direct contact with on-site soils for children and adults is 3×10^{-6} and 2×10^{-7}, respectively, and the noncarcinogenic hazard index is less than one. The carcinogenic risk from ingestion of shallow and deeper zone groundwater ranges from 1×10^{-4} to 4×10^{-6}. The noncarcinogenic hazard index for ingestion of A-zone groundwater was greater than one. The carcinogenic risk from inhalation of VOCs from the use of shallow or deeper zone groundwater ranges from 2×10^{-4} to 7×10^{-6} and the noncarcinogenic hazard index is less than one. The carcinogenic risk from inhalation of chemicals volatilized from on-site soils is 10^{-11}. The hazard index for inhalation of VOCs volatilized from on-site soils is less than one.

13. Description of Alternatives Siemens and Intersil evaluated several alternatives for the final Remedial Action Plan in the FS. In the FS, a wide range of technologies were initially screened based on effectiveness, implementability, and relative cost. The technologies that passed this initial screening were then assembled into the range of treatment alternatives that are described below.

The Siemens and Intersil properties are proposed as one site on the National Priorities List (NPL). However, each company completed its own on-site RI/FS and together, they completed a joint off-site RI/FS. For this reason, a separate series of alternatives was developed for Siemens on-site, Intersil on-site and the off-site area. The on-site areas are the areas within the leased property boundaries.

13.1 Siemens On-Site Alternatives

13.1.1 Alternative No. 1 is the "no action" alternative. All existing interim remedial actions are discontinued and no further remedial actions are implemented. Cleanup levels would not be achieved for an estimated 750 to 1250 years when chemical concentrations might be reduced by natural attenuation.

13.1.2 Alternative No. 2 includes groundwater extraction and treatment and soil vapor extraction and treatment. Groundwater treatment is accomplished by air stripping with subsequent discharge to Calabazas Creek and possible partial on-site reuse. Soil vapor treatment is accomplished through carbon adsorption. The existing groundwater extraction system of extraction wells HXA, H2A, 3-DD, 3-XA, 1-1D, H-3B, H-5B, and 3EB would be expanded to include LF-6A for a total of 9 groundwater extraction wells, 6 A-zone extraction wells and 3 B-zone extraction wells. However, 4 A-zone wells are currently dry due to the lowering water table, so there would only be a total of 5 operating groundwater extraction wells. The other 4 wells would be operated if regional groundwater levels rise. The estimated groundwater pumping rate is 25 gallons per minute (gpm). Groundwater cleanup levels are federal or state MCLs or action levels. The estimated time to achieve cleanup is approximately 55 to 95 years.

The existing soil vapor extraction system of extraction wells 1D, 3A, and 3C would be expanded to include 12 additional soil vapor extraction wells; 2EP, 2EPa, 2B, 4BP, HMSA1, HMSA2, SW-5, SW-6, SW-7, 3E, 1I, and 1M; for a total of 15 soil vapor extraction wells. The estimated soil vapor vacuum rate is 400 cubic feet per minute (cfm). The soil cleanup level is 1 ppm total VOCs and 10 ppm total SOCs. The time to achieve soil cleanup is approximately 15 years. The 30 year present worth cost for this alternative is $4.87 million. Regular groundwater and soil vapor monitoring will be completed.

13.1.3 Alternative No. 3 includes accelerated groundwater extraction and treatment and soil vapor extraction and treatment. Alternative No. 3 is the same as alternative No. 2 with the addition of 4 A-zone extraction wells; W21A, LF-4A, LF-9A, and 2-1D; for a total of 13 groundwater extraction wells: 10 A-zone and 3 B-zone groundwater extraction wells. 4 A-zone wells are currently dry so there would be 6 operating A-zone extraction wells. The additional extraction wells would add about 3 gpm for a total system pumping rate of 28 gpm. The time to achieve groundwater cleanup is approximately 45 to 85 years. The 30 year present worth cost for this alternative is $5.03 million.

13.1.4 Alternative No. 4 includes accelerated groundwater extraction and treatment, soil vapor extraction and treatment, and soil excavation. Alternative No. 4 is the same as alternative No. 3 with the addition of soil excavation down to about 40 feet deep in the areas of former tanks 1 and 3 to remove soils containing semi-volatile organic compounds (SOCs) above the cleanup level of 10 ppm total SOCs. Trichlorobenzene and Phenol were detected in former tank areas 1 and 3. These compounds are not readily amenable to treatment by soil vapor extraction so these areas will be excavated. Two areas of 9 square feet by 40 feet deep or an estimated 20 cubic yards of soil will be excavated at each location. The soil would be disposed of in accordance with law, possibly at a Class I landfill or off-site treatment facility. The estimated time to achieve soil cleanup is 10 years. The 30 year present cost for this alternative is $5.66 million.

13.1.5 Alternative No. 5 includes accelerated groundwater extraction and treatment, accelerated soil vapor extraction and treatment, and soil excavation. Alternative No. 5 is the same as alternative No. 4 with the addition of 7 soil vapor extraction wells beyond the system proposed for alternatives 2, 3, and 4. There would be a total of 22 soil vapor extraction

wells. The additional soil vapor extraction wells are 2C, SW-1, SW-2, 1H, 1G, 1J, and HMSA-3. The estimated soil vapor vacuum rate is 800 cubic feet per minute (cfm). The time to achieve soil cleanup is approximately 10 years. The 30 year present worth cost of this alternative is $6.36 million.

13.1.6 Alternative No. 6 is the same as alternative No. 4 with a more stringent groundwater cleanup level of cleanup to background levels for VOCs. The estimated time to achieve groundwater cleanup is approximately 450 years.

13.2 Intersil On-Site Alternatives

13.2.1 Alternative No. 1 is the "no action" alternative. All existing interim remedial actions are discontinued and no further remedial actions are implemented. Site monitoring would be continued. The 30 year present worth cost of this alternative is $4.0 million. Cleanup levels would not be achieved.

13.2.2 Alternative No. 2 consists of the existing groundwater extraction and treatment and soil vapor extraction and treatment. Groundwater treatment is accomplished by air stripping with subsequent discharge to Calabazas Creek. Soil vapor treatment is accomplished through carbon adsorption. The existing groundwater extraction system consists of extraction wells W4A, W5A, W10A, W12A, and W17A. The groundwater pumping rate is 1.75 gallons per minute (gpm). Groundwater cleanup levels are federal or state MCLs or action levels. The estimated time to achieve groundwater cleanup is approximately 135 years.

The existing soil vapor extraction system consists of extraction wells VE1, VE2, VE3, and VE4. The estimated soil vapor vacuum rate is 60 cubic feet per minute (cfm). The soil cleanup level is 1 ppm total VOCs. The time to achieve soil cleanup is 7 years. The 30 year present worth cost for this alternative is $ 9.8 million. Regular groundwater and soil vapor monitoring will be conducted.

13.2.3 Alternative No. 3 includes expanded groundwater extraction and treatment and expanded soil vapor extraction and treatment. Alternative No. 3 is similar to alternative No. 2 with the addition of 1) new groundwater extraction pumps having lower pump intakes installed in A-zone extraction wells W5A, W10A, W12A, and W17A; 2) conversion of A-zone monitoring well W9A into an A-zone extraction well and conversion of B-zone monitoring well W18B into a B-zone extraction well; 3) four new vapor extraction wells and four new vent wells; and 4) capping six existing and two new vent wells along Forge Drive. Two new vapor extraction wells would be installed near the center of the site and perched-zone groundwater extraction well W4A would be converted to a dual soil vapor / groundwater extraction well and the dry groundwater monitoring well W4AA would be converted to a soil vapor extraction well. The groundwater extraction flow rate for this alternative is approximately 8.5 gpm. The time to achieve groundwater cleanup is 60 years. The soil vapor extraction flow rate is 140 cfm. The time to achieve soil cleanup is 5 years. The 30 year present worth cost of this alternative is $10.1 million.

13.2.4 Alternative No. 4 includes expanded groundwater extraction and treatment and expanded soil vapor extraction and treatment and on-site reinjection of treated groundwater. Alternative No. 4 is the same as alternative No. 3 with the addition of two A-zone groundwater injection wells and two new piezometers to monitor the effect of reinjection. The time to achieve groundwater cleanup is 45 years. The 30 year present worth cost of this alternative is $10.7 million.

13.2.5 Alternative No. 5 includes expanded groundwater extraction and treatment, expanded soil vapor extraction and treatment, extensive soil excavation, groundwater reinjection, and installation of a slurry wall around the property down to the A/B aquitard. Alternative No. 5 is the same as alternative No. 4 with the addition of 1) the excavation and on-site aeration of up to 170,000 cubic yards of soil; 2) installation of a slurry wall around the property and completed within the A/B aquitard to physically aid in containing perched and A-zone groundwater beneath the property. Alternative No. 5 maintains the existing soil vapor extraction system and does not modify the soil vapor extraction system as in alternative nos. 3 and 4. The time to achieve groundwater cleanup is 20 years. The time to achieve soil cleanup (largely through excavation) is 1 year. The 30 year present worth cost of this alternative is $37.3 million.

13.2.6 Alternative No. 6 is the same as alternative No. 3 with a more stringent groundwater cleanup level of cleanup to background levels for VOCs. The estimated time to achieve groundwater cleanup is several hundred years. The 30 year present worth cost of this alternative is $10.6 million.

13.3 Intersil and Siemens Off-Site Area

13.3.1 Alternative No. 1 is the "no action" alternative. All existing interim remedial actions are discontinued and no further remedial actions are implemented. Site monitoring would be continued. The 30 year present worth cost of this alternative is $1.22 million. Cleanup levels would not be achieved except through natural attenuation which would take an estimated 750 to 1250 years.

13.3.2 Alternative No. 2 consists of groundwater extraction from B-zone extraction well LQ-2B and treatment. Groundwater would be pumped from LQ-2B on Lanark Ct. south on Quail Ave. to the Siemens property. Groundwater treatment is accomplished by on-site air stripping with subsequent discharge to Calabazas Creek and possible partial on-site reuse. The estimated groundwater pumping rate is 40 gallons per minute (gpm). Groundwater cleanup levels are federal or state MCLs or action levels. The estimated time to achieve cleanup is approximately 20 to 50 years. The 30 year present worth cost for this alternative is $2.12 million. Regular groundwater monitoring will be conducted.

13.3.3 Alternative No. 3 consists of groundwater extraction from three B-zone extraction wells and groundwater treatment and a contingency for one C-zone extraction well. Alternative No. 3 is the same as alternative No. 2 with the addition of groundwater extraction from wells LQ-1B and S-2B. Groundwater modeling has shown that pumping from the B-zone will capture a portion of the C-zone groundwater at concentrations greater than MCLs. C-zone capture area and water chemistry will be evaluated after 1 year of operation to determine the effectiveness of this alternative. If adequate C-zone capture and a reduction in C-zone TCE concentrations are not demonstrated, then a C-zone extraction well will be installed. The estimated groundwater pumping rate is 105 gpm. The estimated time to achieve cleanup levels is 20 to 45 years. The 30 year present worth cost for this alternative is $2.99 million.

13.3.4 Alternative No. 4 consists of groundwater extraction from two B-zone and one C-zone extraction well and groundwater treatment. Alternative No. 4 is the same as alternative No. 3 with the addition of groundwater extraction from C-zone well RK-2C. For the C-zone extraction well, groundwater would be pumped by underground pipeline from RK-2C on Kerry Ave., south along Redwing Ave. and then west along Lorne Way to Quail Ave. and then to the Siemens facility. The estimated groundwater pumping rate is 65 gpm. The estimated time to achieve cleanup levels is 20 to 50 years. The 30 year present worth cost for this alternative is $2.65 million.

13.3.5 Alternative No. 5 consists of groundwater extraction from two B-zone and two C-zone extraction wells and groundwater treatment. Alternative No. 5 is the same as alternative No. 4 with the addition of groundwater extraction from C-zone well LR-3C. The estimated groundwater pumping rate is 90 gpm. The estimated time to achieve cleanup levels is 20 to 50 years. The 30 year present worth cost for this alternative is $2.81 million.

13.3.6 Alternative No. 6 is the same as alternative No. 4 with a more stringent groundwater cleanup level to background levels for VOCs. The estimated time to achieve cleanup levels is 150 to 300 years. The 30 year present worth cost for this alternative is $2.96 million.

14. Summary of Evaluation Criteria This section summarizes the nine evaluation criteria developed by EPA and used to compare the alternatives in the RI/FS. The alternatives were evaluated in detail with respect to the nine criteria in the RI/FS report. Each alternative was also evaluated with respect to the six state law criteria set forth in Section 25356.1 of the California Health and Safety Code. A comparative analysis was completed in the RI/FS.

14.1 Overall protection of human health and the environment This criterion addresses whether a remedy provides adequate protection of human health and the environment.

14.2 Compliance with applicable or relevant and appropriate requirements (ARARs) This criterion addresses whether a remedy will meet all of the ARARs or other Federal and State environmental laws.

14.3 Long-term effectiveness and permanence This criterion refers to expected residual risk and residual chemical concentrations after cleanup goals have been met and the ability of a remedy to maintain reliable protection of human health and the environment over time.

14.4 Reduction of toxicity, mobility or volume This criterion refers to the anticipated performance of the treatment technologies a remedy may employ.

14.5 Short-term effectiveness This criterion addresses the period of time needed to achieve cleanup and any adverse impacts on human health and the environment that may be posed during the construction and implementation period, until cleanup goals are achieved.

14.6 Implementability This criterion refers to the technical and administrative feasibility of a remedy.

14.7 Cost This criterion includes estimated capital and operation and maintenance, usually presented in a 30 year present worth format.

14.8 Support Agency Acceptance This criterion addresses EPA's acceptance of the selected remedy and any other EPA comments.

14.9 Community Acceptance This criterion summarizes the public's general response to the alternatives.

15. The Selected Remedy (Final Remedial Action Plan)

15.1 Intersil On-Site Area The selected remedy for the Intersil on-site area is Alternative No. 3. Alternative No. 3 includes expanded groundwater extraction and treatment and expanded soil vapor extraction and treatment. The existing soil vapor extraction system consisting of extraction wells VE1, VE2, VE3, and VE4 will be expanded to include four new vapor extraction wells and four new vent wells. Six existing and two new vent wells along Forge

Drive will be capped. The existing groundwater extraction system consisting of extraction wells W4A, W5A, W10A, W12A, and W17A will be upgraded to include new groundwater extraction pumps having lower pump intakes installed in A-zone extraction wells W5A, W10A, W12A, and W17A, and A-zone monitoring well W9A will be converted to an extraction well. B-zone groundwater extraction will be accomplished through conversion of B-zone monitoring well W18B into a B-zone extraction well.

Groundwater cleanup levels are federal or state MCLs (adopted or proposed) or California Department of Health Services (DHS) Recommended Drinking Water Action Levels (RDWALs). The soil cleanup level is 1 ppm total VOCs. The final cleanup levels for the suite of chemicals detected in the A-zone equate to a future use scenario risk level for groundwater ingestion and inhalation of VOCs of 1.7×10^{-6}. Groundwater treatment will be accomplished by air stripping with subsequent discharge to Calabazas Creek. Soil vapor treatment is accomplished through carbon adsorption. Regular groundwater and soil vapor monitoring will be conducted. The time to achieve groundwater cleanup is 60 years. The time to achieve soil cleanup is 5 years.

15.2 Siemens On-Site Area The selected remedy for the Siemens on-site area is Alternative No. 4. Alternative No. 4 includes accelerated groundwater extraction and treatment, soil vapor extraction and treatment, and soil excavation. The existing groundwater extraction system of extraction wells HXA, H2A, 3-DD, 3-XA, 1-1D, H-3B, H-5B, and 3EB would be expanded to include LF-6A, LF-4A, LF-9A, W21A, and 2-1D; for a total of 10 A-zone groundwater extraction wells and 3 B-zone extraction wells. However, 4 A-zone wells are currently dry due to the lowering water table, so there would only be a total of 6 operating A-zone groundwater extraction wells under current conditions.

The existing soil vapor extraction system of extraction wells 1D, 3A, and 3C would be expanded to include 12 additional soil vapor extraction wells; 2EP, 2EPa, 2B, 4BP, HMSA1, HMSA2, SW-5, SW-6, SW-7, 3E, 1I, and 1M; for a total of 15 soil vapor extraction wells. Alternative No. 4 also includes soil excavation down to about 40 feet deep in the areas of former tanks 1 and 3 to remove soils containing semi-volatile organic compounds (SOCs). The soil would be disposed of in accordance with applicable laws, possibly at a Class I landfill or off-site treatment facility. The 30 year present cost for this alternative is $5.66 million.

Groundwater cleanup levels are federal or state MCLs (proposed or adopted) or RDWALs. The final cleanup levels for the suite of chemicals detected in the A-zone equate to a future use scenario risk level for groundwater ingestion and inhalation of VOCs of 1×10^{-4}. Groundwater treatment will be accomplished by air stripping with subsequent discharge to Calabazas Creek and possible partial reuse and reclamation on-site. Soil vapor treatment may be accomplished through carbon adsorption. Regular groundwater and soil vapor monitoring will be completed. The soil cleanup level is 1 ppm total VOCs and 10 ppm total SOCs. The estimated time to achieve groundwater cleanup is 45 to 85 years. The time to achieve soil cleanup is approximately 11 years. Regular groundwater and soil vapor monitoring will be conducted.

15.3 Siemens / Intersil Off-Site Area The selected remedy for the Siemens / Intersil off-site area is Alternative No. 3. Alternative No. 3 consists of groundwater extraction from three B-zone extraction wells and groundwater treatment. Groundwater would be pumped from wells LQ-1B, LQ-2B and S-2B. C-zone groundwater would be captured by pumping LQ-1B and LQ-2B. If C-zone groundwater concentrations do not show a reduction during the first one year period, and if sufficient C-zone capture is not demonstrated, RK-2C will be converted into a C-zone extraction well.

Groundwater cleanup levels are federal or state MCLs (proposed or adopted) or RDWALs. The final cleanup levels for the suite of chemicals detected in the B-zone equate to a future use scenario risk level for groundwater ingestion and inhalation of VOCs of 1×10^{4}. Groundwater treatment will be accomplished by air stripping with subsequent discharge to Calabazas Creek and possible partial reuse and reclamation on-site. Regular groundwater monitoring will be completed. The estimated time to achieve groundwater cleanup is 20 to 45 years.

15.4. Uncertainty in Achieving Cleanup Goals The goal of this remedial action is to restore groundwater to its beneficial uses. Based on information obtained during the RI and on a careful analysis of all remedial alternatives, the Board believes that the selected remedy will achieve this goal. However, studies suggest that groundwater extraction and treatment will not be, in all cases, completely successful in reducing contaminants to health-based levels in the aquifer zones. The Board recognizes that operation of the selected extraction and treatment system may indicate the technical impracticability of reaching health-based groundwater quality standards using this approach. If it becomes apparent, during implementation or operation of the system, that contaminant levels have ceased to decline and are remaining constant at levels higher than the remediation goal, that goal and the remedy may be reevaluated.

The selected remedy will include groundwater extraction for a period of 45 to 85 years, during which the system's performance will be carefully monitored on a regular basis and adjusted as warranted by the performance data collected during operation. Modifications may include:

a) discontinuing operation of extraction wells in areas where cleanup standards have been attained;

b) alternating pumping at wells to eliminate stagnation points; and

c) pulse pumping to allow aquifer equilibration and encourage adsorbed contaminants to partition into groundwater.

15.5. Change to the RI/FSs The RI/FSs state that State Board Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California," is a "To Be Considered" requirement. The RI/FSs are hereby changed to state that Resolution 68-16 is an ARAR.

16. Remedy Selection Rationale and Statutory Determinations The selected remedies are protective of human health and the environment. Groundwater contamination is treated so that the remaining potential future risks fall within the 10^{4} to 10^{6} carcinogenic risk range for acceptable cleanup levels. The remedies comply with ARARs by achieving cleanup to at least Federal and State MCLs (proposed or adopted) or RDWALs. Soil is remediated to a level that will protect groundwater from future solvent contamination.

The selected remedies are cost effective in achieving the required cleanup levels. Siemens' on-site alternative No. 5 and Intersil's on-site alternatives No. 4 and 5 are more costly and these alternatives could have potentially spread the soil pollution further through groundwater injection or soil vapor extraction at the periphery of the soil pollution. The potentially shorter cleanup times of these more costly alternatives does not justify their selection based on the potential problems associated with these alternatives. Intersil's on-site alternative No. 5 is too costly to justify the additional slurry wall control and the large scale soil excavation. Off-site alternatives No. 4 and No. 5 are more costly than off-site alternative No. 3. Off-site alternatives No. 4 and 5 may potentially draw groundwater deeper from the

B-zone to the C-zone due to C-zone pumping and would also be more disruptive to the neighborhood due to additional trenching and construction activities. Alternative No. 3 has been modeled to capture the off-site B-zone plume and a significant portion of groundwater containing concentrations greater than MCLs. For these reasons, alternative No. 3 was selected. The alternatives for cleanup to background concentrations were not selected because of the increased time and cost necessary to achieve background concentrations and because of the need to minimize groundwater pumping and conserve groundwater supplies.

The selected remedies are effective in the short-term with cleanup times for soil of 5 years to 11 years and in groundwater from 45 years to 85 years. The selected remedies are effective in the long-term by virtue of the fact that ARARs are achieved. Soil vapor extraction and treatment and groundwater extraction and treatment are permanent solutions and significantly reduce pollutant toxicity, mobility and volume at the site. The selected off-site alternative, No. 3, will not require the approximately 1000 feet of street trenching and piping that would be required by alternative No. 4. All of the alternatives are implementable. EPA has preliminarily approved the selected remedy.

Treatment is used as a principal element for the remedies. Emissions from soil vapor extraction will be treated by vapor phase carbon adsorption with the carbon canisters being regenerated off-site. Emissions from air stripping towers will meet local air district requirements, which are anticipated to be less than a 10^{-6} risk level, or will be required to implement vapor phase carbon treatment.

17. NPDES Discharge The extracted groundwater is treated by air stripping and then discharged to a storm sewer system tributary to Calabazas Creek. Currently, approximately 35,000 gallons per day (gpd) of groundwater is discharged by Siemens under NPDES Permit #CA0029190 and 2,000 gpd is discharged by Intersil under NPDES Permit # CA0029262. Calabazas Creek is tributary to South San Francisco Bay. Intersil's permit expires on October 21, 1992. Siemens' permit expires on April 1, 1992. The dischargers must file a Report of Waste Discharge in accordance with Title 23, Code of California Regulations, not later than 180 days in advance of the expiration date as application for issuance of new waste discharge requirements.

18. Cleanup Standards The groundwater cleanup standards for the site are Environmental Protection Agency (EPA) MCLs (proposed or adopted), California Department of Health Services (DHS) MCLs (proposed or adopted), DHS RDWALs. The soil cleanup standards are 1 ppm total VOCs and 10 ppm total SOCs. These cleanup standards are defined in Specification B.4.

Groundwater extraction will continue until drinking water quality is achieved, if feasible. If these standards are determined to be infeasible, groundwater extraction shall continue as long as significant quantities of chemicals are being removed through groundwater extraction. Achieving drinking water quality is an ARAR for this site. If drinking water quality cannot be achieved, the dischargers must demonstrate to the satisfaction of the Regional Board that the conditions for waiving an ARAR are met (e.g., that meeting the ARAR is technically impracticable from an engineering perspective) and that the alternative proposed will be protective of human health and the environment. The Order will then need to be modified by the Regional Board and approved by EPA to allow a less stringent groundwater cleanup level.

19. Risk Associated With Cleanup Standards The selected remedy is protective of human health and the environment -- as required by Section 121 of CERCLA -- in that pollution in groundwater is treated to at least maximum contaminant levels (MCLs) and falls within

EPA's acceptable carcinogenic risk range and noncarcinogenic hazard index range. EPA considers a carcinogenic risk range of 10^{-4} to 10^{-6} as an acceptable cleanup level. If the noncarcinogenic hazard index is less than one, EPA considers the combined intake of chemicals unlikely to pose a health risk.

The carcinogenic risk at the cleanup levels associated with the potential future use scenario of groundwater ingestion and inhalation of VOCs from groundwater ranges from 1×10^{-4} to 1.7×10^{-6} for the on-site and off-site areas. In cleaning up TCE to the 5 ppb cleanup standard, it is quite likely that the concentrations of other VOCs will be reduced to levels in the 5 ppb range. These risks were calculated using a potential future use scenario with a 30 year duration exposure.

In the C-zone, there has been no PCE detected; 1,1-dichloroethene (1,1-DCE) was detected at 1 ppb, and TCE was detected at 17 ppb as of the May 11, 1990 sampling event. Using the cleanup level of 5 ppb TCE and assuming that 1,1-DCE will be reduced to the detection limit of 0.5 ppb, the concentrations of 5 ppb TCE and 0.5 ppb 1,1-DCE equate to a carcinogenic risk of 1.3×10^{-5} using the ingestion and inhalation pathways. This is 0.13 times less than the 10^{-4} risk level and 13 times greater than the 10^{-6} risk level.

The noncancer hazard indices associated with the cleanup levels range from 0.0 to 0.4 for the on-site and off-site areas. The method and assumptions used to obtain the Carcinogenic Risk and the Hazard Index associated with the cleanup standards are contained in the RI/FS and the BPHE. The cleanup standards for the site are protective of human health, have a carcinogenic risk that falls within a range of 10^{-6} to 10^{-4}, and a hazard index of less than one.

20. Future Changes to Cleanup Standards If new information indicates cleanup standards cannot be attained or can be surpassed, the Board and EPA will decide if further final cleanup actions, beyond those completed, shall be implemented at this Site. If changes in health criteria, administrative requirements, site conditions, or remediation efficiency occur, the discharger will submit an evaluation of the effects of these changes on cleanup standards as defined in Specification B.4.

The Regional Board recognizes that the discharger has already performed extensive investigative and remedial work onsite and that the discharger is being ordered hereby to perform additional remedial tasks. It is in the public interest to have the discharger undertake such remedial actions promptly and without prolonged litigation or the expenditure of public funds. The Regional Board recognizes that an important element in encouraging the discharger to invest substantial resources in undertaking such remedial actions is to provide the discharger with reasonable assurances that the remedial actions called for in this Order will be the final remedial actions required to be undertaken by the discharger. On the other hand, the Regional Board also recognizes its responsibility to protect water quality, public health, and the environment and that future developments could indicate that some additional remedial actions may be necessary.

The Regional Board has considered and balanced these important considerations, and has determined that the remedial actions ordered herein represent the Regional Board's best, current judgement of the remedial actions to be required of the discharger. The Regional Board will not require the discharger to undertake additional remedial actions with respect to the matters previously described herein unless: (1) conditions on the site, previously unknown to the Regional Board, are discovered after adoption of this Order, or (2) new information is received by the Regional Board, in whole or in part after the date of this Order, and these previously unknown conditions or this new information indicates that the remedial actions required in this Order may not be protective of public health and the

environment. The Regional Board will also consider technical practicality, cost effectiveness, State Board Resolution No. 68-16 and other factors evaluated by the Regional Board in issuing this Order in determining whether such additional remedial actions are appropriate and necessary.

21. Groundwater Conservation Siemens and Intersil have considered the feasibility of reclamation, reuse, or discharge to a publicly owned treatment works (POTW) of treated, extracted groundwater, as specified in Board Resolution No. 88-160. The City of Cupertino will not accept the discharge of treated groundwater for remediation purposes into their sanitary sewer system. Regarding on-site process water reuse, the Intersil facility is no longer operating and the Siemens facility process would consume a small percentage of the extracted groundwater. Both properties are mostly paved and use small amounts of irrigation water. Groundwater reinjection was evaluated but was determined to have the potential to spread VOCs in the vadose zone, that fouling or clogging of the injection wells may occur and was costly to implement. Capital costs for reinjection were $286,000 versus $11,000 for discharge to Calabazas Creek. Irrigation or reuse is presently being further evaluated.

Calabazas Creek is generally a dry creek bed in the area of the treated effluent discharge. It appears that all the groundwater discharge is currently being naturally recharged through Calabazas Creek. The companies are currently completing a recharge study of Calabazas Creek which will be submitted on October 30, 1990. This report will also evaluate off-site irrigation and reuse.

22. Community Involvement An aggressive Community Relations program has been ongoing for all Santa Clara Valley Superfund sites, including the Intersil/Siemens site. The Board published a notice in the San Jose Mercury News, the Santa Clara Weekly and the Valley Journal on June 13, 1990, announcing the proposed final RAP and opportunity for public comment at the Regional Board Public Hearing of June 20, 1990 in Oakland. A presentation of the final cleanup plan was made at the June Board Hearing. The 30 day comment period was from June 13, 1990 to July 13, 1990. The June 13, 1990 notice also announced an evening public meeting held at the Laurelwood Elementary School in the City of Santa Clara on June 21, 1990. A presentation on the final cleanup plan was also made at the June 21, 1990 public meeting. Public comment did not generate any significant changes to the proposed plan.

Fact Sheets were mailed to interested residents, local government officials, and media representatives. Fact Sheet 1, mailed in July 1989, summarized the pollution problem, the results of investigations to date, and the interim remedial actions. Fact sheet 2, mailed in January 1990, provided written answers to questions from the public asked at the September 27, 1989 community meeting. Fact Sheet 3, mailed on June 7, 1990, described the cleanup alternatives evaluated, explained the proposed final RAP, announced opportunities for public comment at the Regional Board Hearing of June 20, 1990 in Oakland and the Public Meeting of June 21, 1990 in Santa Clara, and described the availability of further information at the Information Repository at the Sunnyvale Public Library.

Fact Sheet 4, to be mailed in October 1990, will explain the final adopted cleanup plan contained in this Order.

23. State Board Resolution 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California" On October 28, 1968, the State Water Resources Control Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality Waters in California". This policy calls for maintaining the existing high quality of State waters unless it is demonstrated that any change would be consistent with the maximum public

benefit and not unreasonably affect beneficial uses. The original discharge of waste to the groundwater at this Site was in violation of this policy; therefore, the groundwater quality needs to be restored to its original quality to the extent reasonable. For the purpose of establishing cleanup objectives, the shallow groundwater at the site is designated a potential source of drinking water. The FS included alternatives that evaluated cleanup to background or non-detect levels. These alternatives greatly increased the time required to reach cleanup levels. For example, the Siemens on-site groundwater cleanup time increased from approximately 85 years to 450 years. Cleanup of groundwater to below the MCL for TCE may be unachievable due to the difficulties in restoring aquifers to concentrations below 5 ppb for any VOC. This is due to the slow desorption of VOCs adsorbed to the inner pore spaces of soil particles which make up the aquifer and VOCs adsorbed to clays and organic matter in the aquitard. For this reason, the MCLs were accepted as concentrations that meet the intent of Resolution 68-16.

24. Data Validation Development of the Board's final Remedial Action Plan was based on the Board's evaluation of eight years of water and soil quality data. Random samples have been collected and analyzed by the Board to confirm the validity of data generated by the dischargers. Data has been validated using EPA validation guidance. The Board finds that there is sufficient acceptable data to make cleanup decisions.

25. Lead Agency Pursuant to the South Bay Multi-Site Cooperative Agreement and the South Bay Ground Water Contamination Enforcement Agreement, entered into on May 2, 1985 (as subsequently amended) by the Regional Board, EPA and DHS, the Regional Board has been acting as the lead agency. EPA is expected to agree with the selected remedy and issue a Record of Decision following adoption by the Regional Board of the remedial action plan. The Regional Board will continue to regulate the dischargers' remediation and administer enforcement actions inaccordance with CERCLA as amended by SARA, the California Water Code, Health and Safety Code, and regulations adopted there under.

26. Administrative Record The Administrative Record has been prepared in accordance with EPA Guidance, has been made available for public and PRP review, and provides the backup documentation for the recommendations of staff and decisions by the Board.

27. Siemens and Intersil are responsible parties under the federal Superfund (CERCLA/SARA). The Siemens and Intersil properties are jointly proposed as a Superfund site on the National Priorities List.

28. This Order is written as a joint Order for Siemens and Intersil because the groundwater pollution plumes from both Companies have commingled in the A-zone and because the two properties are proposed as one site on the National Priorities List. Siemens and Intersil are encouraged to submit joint reports. If joint reports are not coordinated and submitted, each company is still individually responsible for the joint tasks in this Order.

29. Siemens Components, Inc. (hereinafter referred to as a discharger) is a discharger because of the releases of chemicals that have resulted from its waste handling facilities. Intersil (hereinafter referred to as a discharger) is a discharger because of the releases of chemicals that have resulted from its waste handling facilities. Vallco Park, Ltd. (hereinafter referred to as a discharger) is a discharger because it is the current owner of the property where these releases have occurred.

30. The selected remedial action plan for the Siemens and Intersil Site was chosen in accordance with the Health and Safety Code Section 25356.1, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund

Amendments and Reauthorization Act (SARA), the National Oil and Hazardous Substances Pollution Contingency (NCP), and pursuant to the Multi-Site Cooperative Agreement. This decision is based on the administrative record for the site.

31. 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.

32. The existing and potential beneficial uses of the groundwater underlying and adjacent to the facilities include:

    a. Industrial process water supply
    b. Industrial service water supply
    c. Municipal and Domestic water supply
    d. Agricultural water supply

33. 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.

34. 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.

35. This Order supersedes and rescinds the Intersil, Siemens and Vallco Park, Ltd. Order No. 89-038.

36. On-site and off-site containment and cleanup measures need to be implemented to alleviate the threat to the environment posed by the continued migration of the groundwater plume of organic solvents.

37. 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.

38. 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 and Section 25356.1 of the California Health and Safety Code, that Siemens Components, Inc. and Intersil, Inc. and Vallco Park, Ltd. 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 soil or groundwater containing pollutants shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The dischargers shall conduct monitoring activities as determined by the Executive Officer 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 characterization of the pollutant plume may be required.

3. All Siemens and Intersil wells shall be used to determine if cleanup standards have been met.

4. Final cleanup standards for all onsite and off-site wells shall not be greater than the levels as provided in Finding 18. The numerical final cleanup standards, therefore, shall not exceed the following in any well as set forth in the Self-Monitoring Plan:

Chemical	Groundwater Cleanup Standard (ug/l)	Basis	1989-90 Max.(4)	Location
POTENTIAL CARCINOGENS				
1,1-Dichloroethylene (1,1-DCE)	6	1	59	LF-4A
Trichloroethylene (TCE)	5	1	4700	LF-6A
Tetrachloroethylene (PCE)	5	1	5	W21A
NONCARCINOGENS				
1,2-dichloroethylene (1,2-DCE)				
cis	6	1	3000	G-1A
trans	10	1	NA(5)	
1,1,1-trichloroethane (1,1,1-TCA)	200	1	700	3-DD
Freon 113	1,200	1	73	W19B
Toluene	100*	2	93	KB-1B

1 - California State Maximum Contaminant Level (MCL) for Drinking Water (proposed or adopted).
2 - California State Recommended Drinking Water Action Level.
3 - California State Proposed MCL
4 - 1989-90 Maximum Concentration Levels (ug/l).
5 - Not Analyzed
* - If the State of California proposes or adopts a MCL for toluene, the MCL shall at that time become the cleanup standard to toluene at this Site.

4.1 The soil cleanup standards are 1 ppm total VOCs and 10 ppm total SOCs.

5. The discharger shall implement the final cleanup plan described in Finding 15.

6. Final chemical concentrations shall not be found to exceed the appropriate cleanup level based on quarterly analytical results.

C. PROVISIONS

1. Siemens and Intersil shall submit to the Board acceptable monitoring program reports containing results of work performed according to a the attached self-monitoring program prescribed by the Board's Executive Officer.

2. This Order supersedes and rescinds the Intersil, Siemens and Vallco Park, Ltd. Order No. 89-038.

3. Siemens and Intersil shall comply with Prohibitions A.1., A.2. and A.3., Specifications B.1. and B.2. and Provisions C.1 and C.2 above immediately, except as modified in accordance with the time schedule and tasks below. Within 60 days of the Executive Officer's determination and actual notice to Vallco Park, Ltd. that Siemens and/or Intersil have failed to comply with Prohibitions A.1, A.2 and A.3, Specifications B.1 and B.2 and Provisions C.1 and C.2 of this order, Vallco Park, Ltd., as landowner, shall comply with these paragraphs and with the tasks below.

COMPLETION DATE/TASK

4. SIEMENS VADOSE ZONE AND A-ZONE ON-SITE AREAS

Siemens is responsible for the following tasks a. through f.

a. COMPLETION DATE: October 30, 1990

TASK: GROUNDWATER REUSE AND RECLAMATION: Submit a technical report acceptable to the Executive Officer containing the groundwater reuse and reclamation plan for the treated groundwater. The report shall include documentation of efforts to reuse the water, efforts to secure users for the water, and reasons why potential users would not accept the water and discuss the technical feasibility and cost-effectiveness of other water reuse options. The report shall also include an evaluation of the recharge capacity of Calabazas Creek.

b. COMPLETION DATE: May 31, 1991

TASK: START UP OF EXPANDED REMEDIAL ACTION PLAN: Submit a technical report acceptable to the Executive Officer containing the start up report for the final remedial action plan. This report shall contain the final construction schedule for the time period from adoption of this order through submittal of the startup report, as-built construction drawings of the system, and the first two weeks of monitoring data.

c. CURTAILING SOIL VAPOR OR GROUNDWATER EXTRACTION

1) COMPLETION DATE: 90 days prior to proposed curtailment of any soil vapor or

groundwater extraction well or treatment system

TASK: ONSITE WELL PUMPING CURTAILMENT CRITERIA AND PROPOSAL. Submit a technical report acceptable to the Executive Officer containing a proposal for curtailing pumping from any onsite groundwater or vapor extraction well(s) and the criteria used to justify such curtailment. This report shall include data to show that groundwater or soil cleanup standards for all VOCs have been achieved and pollutant levels have stabilized or are stabilizing, and that the potential for pollutant levels rising above cleanup standards is minimal.

If the discharger claims that it is not feasible to achieve cleanup standards, the report shall evaluate the alternate standards that can be achieved.

2) COMPLETION DATE; 60 days after the Board approves onsite curtailment

TASK: IMPLEMENTATION OF ONSITE CURTAILMENT: Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task c.1). Tasks c.1) and c.2) may be incorporated in the quarterly reports specified in Provision C.9 of this Order.

d. COMPLETION DATE: July 31, 1995

TASK: FIVE-YEAR STATUS REPORT AND EFFECTIVENESS EVALUATION. Submit a technical report acceptable to the Executive Officer containing the results of any additional investigation; an evaluation of the effectiveness of installed final cleanup measures and cleanup costs; additional recommended measures to achieve final cleanup objectives and standards, if necessary; a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and standards; and the tasks and time schedule necessary to implement any additional final cleanup measures. This report shall also describe the reuse of extracted groundwater and evaluate and document the cleanup of polluted soil and groundwater. If safe drinking water levels have not been achieved onsite and are not expected to be achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation addressing whether it is technically feasible to achieve drinking-water quality, and if so, a proposal for procedures to do so.

e. COMPLETION DATE: 90 days after request made by the Executive Officer

TASK: EVALUATION OF NEW HEALTH CRITERIA. Submit a technical report acceptable to the Executive Officer which contains an evaluation of how the final plan and cleanup standards would be affected, if the concentrations as listed in Specification B.4. change as a result of promulgation of drinking water standards, maximum contaminant levels or action levels or other health based criteria.

f. COMPLETION DATE: 90 days after request made by the Executive Officer

TASK: EVALUATION OF NEW TECHNICAL INFORMATION. Submit a technical report acceptable to the Executive Officer which contains an evaluation of new technical and economic information which indicates that cleanup standards or cleanup technologies in some areas may be considered for revision. Such technical reports shall not be required unless the Executive Officer or the Board determines that such new information indicates a reasonable possibility that the Order may need

to be changed under the criteria described in Finding 20.

5. INTERSIL VADOSE ZONE AND A-ZONE ON-SITE AREAS

Intersil is responsible for the following tasks a. through f.

a. COMPLETION DATE: October 30, 1990

TASK: GROUNDWATER REUSE AND RECLAMATION: Submit a technical report acceptable to the Executive Officer containing the groundwater reuse and reclamation plan for the treated groundwater. The report shall include documentation of efforts to reuse the water, efforts to secure users for the water, and reasons why potential users would not accept the water and discuss the technical feasibility and cost-effectiveness of other water reuse options. The report shall also include an evaluation of the recharge capacity of Calabazas Creek.

b. COMPLETION DATE: May 31, 1991

TASK: START UP OF EXPANDED REMEDIAL ACTION PLAN: Submit a technical report acceptable to the Executive Officer containing the start up report for the final remedial action plan. This report shall contain the final construction schedule for the time period from adoption of this order through submittal of the startup report, as-built construction drawings of the system, and the first two weeks of monitoring data.

c. CURTAILING SOIL VAPOR OR GROUNDWATER EXTRACTION

1) COMPLETION DATE: 90 days prior to proposed curtailment of any soil vapor or groundwater extraction well or treatment system

TASK: ONSITE WELL PUMPING CURTAILMENT CRITERIA AND PROPOSAL. Submit a technical report acceptable to the Executive Officer containing a proposal for curtailing pumping from any onsite groundwater or vapor extraction well(s) and the criteria used to justify such curtailment. This report shall include data to show that groundwater or soil cleanup standards for all VOCs have been achieved and pollutant levels have stabilized or are stabilizing, and that the potential for pollutant levels rising above cleanup standards is minimal.

If the discharger claims that it is not feasible to achieve cleanup standards, the report shall evaluate the alternate standards that can be achieved.

2) COMPLETION DATE; 60 days after the Board approves onsite curtailment

TASK: IMPLEMENTATION OF ONSITE CURTAILMENT: Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task c.1). Tasks c.1) and c.2) may be incorporated in the quarterly reports specified in Provision C.9 of this Order.

d. COMPLETION DATE: July 31, 1995

TASK: FIVE-YEAR STATUS REPORT AND EFFECTIVENESS EVALUATION. Submit a technical report acceptable to the Executive Officer containing the results of any additional investigation; an evaluation of the effectiveness of installed final cleanup

measures and cleanup costs; additional recommended measures to achieve final cleanup objectives and standards, if necessary; a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and standards; and the tasks and time schedule necessary to implement any additional final cleanup measures. This report shall also describe the reuse of extracted groundwater and evaluate and document the cleanup of polluted soil and groundwater. If safe drinking water levels have not been achieved onsite and are not expected to be achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation addressing whether it is technically feasible to achieve drinking-water quality, and if so, a proposal for procedures to do so.

e. COMPLETION DATE: 90 days after request made by the Executive Officer

TASK: EVALUATION OF NEW HEALTH CRITERIA. Submit a technical report acceptable to the Executive Officer which contains an evaluation of how the final plan and cleanup standards would be affected, if the concentrations as listed in Specification B.4. change as a result of promulgation of drinking water standards, maximum contaminant levels or action levels or other health based criteria.

f. COMPLETION DATE: 90 days after request made by the Executive Officer

TASK 15: EVALUATION OF NEW TECHNICAL INFORMATION. Submit a technical report acceptable to the Executive Officer which contains an evaluation of new technical and economic information which indicates that cleanup standards or cleanup technologies in some areas may be considered for revision. Such technical reports shall not be required unless the Executive Officer or the Board determines that such new information indicates a reasonable possibility that the Order may need to be changed under the criteria described in Finding 20.

6. SIEMENS B-ZONE AND DEEPER ZONES ON-SITE AREAS AND B-ZONE AND DEEPER ZONES OFF-SITE DOWN GRADIENT AREAS
INTERSIL B-ZONE AND DEEPER ZONES ON-SITE AREAS AND B-ZONE AND DEEPER ZONES OFF-SITE DOWN GRADIENT AREAS
INTERSIL AND SIEMENS OFF-SITE A-ZONE

Siemens and Intersil are responsible for the following tasks a. through f.

a. COMPLETION DATE: October 30, 1990

TASK: GROUNDWATER REUSE AND RECLAMATION: Submit a technical report acceptable to the Executive Officer containing the groundwater reuse and reclamation plan for the treated groundwater. The report shall include documentation of efforts to reuse the water, efforts to secure users for the water, and reasons why potential users would not accept the water and discuss the technical feasibility and cost-effectiveness of other water reuse options. The report shall also include an evaluation of the recharge capacity of Calabazas Creek.

b. COMPLETION DATE: May 31, 1991

TASK: START UP OF EXPANDED REMEDIAL ACTION PLAN: Submit a technical report acceptable to the Executive Officer containing the start up report for the final remedial action plan. This report shall contain the final construction schedule for the

time period from adoption of this order through submittal of the startup report, as-built construction drawings of the system, and the first two months of monitoring data.

c. COMPLETION DATE: March 31, 1992

TASK: EVALUATE C-ZONE GROUNDWATER EXTRACTION: Submit a technical report acceptable to the Executive Officer containing an evaluation of the effectiveness of the C-zone extraction system including determination of the C-zone capture area based on field data and presentation of C-zone water chemistry data. Propose a construction schedule for a C-zone extraction well and piping, if necessary.

d. CURTAILING SOIL VAPOR OR GROUNDWATER EXTRACTION

1) COMPLETION DATE: 90 days prior to proposed curtailment of any soil vapor or groundwater extraction well or treatment system

TASK: WELL PUMPING CURTAILMENT CRITERIA AND PROPOSAL. Submit a technical report acceptable to the Executive Officer containing a proposal for curtailing pumping from the extraction well(s) and the criteria used to justify such curtailment. This report shall include data to show that groundwater or soil cleanup standards for all VOCs have been achieved and pollutant levels have stabilized or are stabilizing, and that the potential for pollutant levels rising above cleanup standards is minimal.

If the discharger claims that it is not feasible to achieve cleanup standards, the report shall evaluate the alternate standards that can be achieved.

2) COMPLETION DATE; 60 days after the Board approves onsite curtailment

TASK: IMPLEMENTATION OF CURTAILMENT: Submit a technical report acceptable to the Executive Officer documenting completion of the necessary tasks identified in the technical report submitted for Task d.1). Tasks d.1) and d.2) may be incorporated in the quarterly reports specified in Provision C.9 of this Order.

e. COMPLETION DATE: July 31, 1995

TASK: FIVE-YEAR STATUS REPORT AND EFFECTIVENESS EVALUATION. Submit a technical report acceptable to the Executive Officer containing the results of any additional investigation; an evaluation of the effectiveness of installed final cleanup measures and cleanup costs; additional recommended measures to achieve final cleanup objectives and standards, if necessary; a comparison of previous expected costs with the costs incurred and projected costs necessary to achieve cleanup objectives and standards; and the tasks and time schedule necessary to implement any additional final cleanup measures. This report shall also describe the reuse of extracted groundwater and evaluate and document the cleanup of polluted soil and groundwater. If safe drinking water levels have not been achieved onsite and are not expected to be achieved through continued groundwater extraction and/or soil remediation, this report shall also contain an evaluation addressing whether it is technically feasible to achieve drinking-water quality, and if so, a proposal for procedures to do so.

f. COMPLETION DATE: 90 days after request made by the Executive Officer

TASK: EVALUATION OF NEW HEALTH CRITERIA. Submit a technical report acceptable to the Executive Officer which contains an evaluation of how the final plan and cleanup standards would be affected, if the concentrations as listed in Specification B.4. change as a result of promulgation of drinking water standards, maximum contaminant levels or action levels or other health based criteria.

g. COMPLETION DATE: 90 days after request made by the Executive Officer

TASK: EVALUATION OF NEW TECHNICAL INFORMATION. Submit a technical report acceptable to the Executive Officer which contains an evaluation of new technical and economic information which indicates that cleanup standards or cleanup technologies in some areas may be considered for revision. Such technical reports shall not be required unless the Executive Officer or the Board determines that such new information indicates a reasonable possibility that the Order may need to be changed under the criteria described in Finding 20.

7. The submittal of technical reports evaluating immediate, 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 consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR Part 300); Section 25356.1 (c) of the California Health and Safety Code; CERCLA guidance documents with reference to Remedial Investigation, Feasibility Studies, and Removal Actions; 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".

8. 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 and the Board may consider revision to this Order.

9. Technical reports on compliance with the Prohibitions, Specifications, and Provisions of this Order shall be submitted monthly to the Board commencing on October 15, 1990 and covering the previous month. On a monthly basis thereafter, these reports shall consist of a 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 Provision C.3. or any other Specification or Provision 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. The monthly reports shall be submitted until the expanded remedial action plan startup report is submitted.

On a quarterly basis, quarterly reports shall include, but need not be limited to, updated water table and piezometric surface maps for all affected water bearing zones, soil and groundwater capture area maps, and appropriately scaled and detailed base maps showing the location of all monitoring wells and extraction wells, and identifying adjacent facilities and structures. Water level measurements are not required for wells where the configuration of the pumping equipment does not permit the measurement to be taken. When appropriate, due to new data, and upon request by the Executive Officer, new geologic data shall be

incorporated in cross-sectional geological maps describing the hydrogeological setting of the site. Quarterly reports shall be due on the 30th day of the following month after the reporting period.

10. 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.

11. All samples shall be analyzed by State certified laboratories or laboratories accepted by the Board using approved EPA methods, where available, for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Board review.

12. 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.

13. 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. City of Cupertino and City of Sunnyvale
    c. U. S. Environmental Protection Agency, Region IX (H-6-3)

    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 a local repository for public use.

14. Within 60 days of the Executive Officer's determination and actual notice to Vallco Park, Ltd. that Siemens and/or Intersil have failed to comply with any portion of Provisions 1 through 10 of this Order, Vallco Park, Ltd., as landowner, shall comply with these Provisions.

15. Siemens, Intersil and Vallco Park, Ltd. 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 consistent with the site Health and Safety Plan, 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 discharger.

16. Vallco Park, Ltd. shall file a report on any changes in site occupancy and ownership associated with the facilities described in this Order.

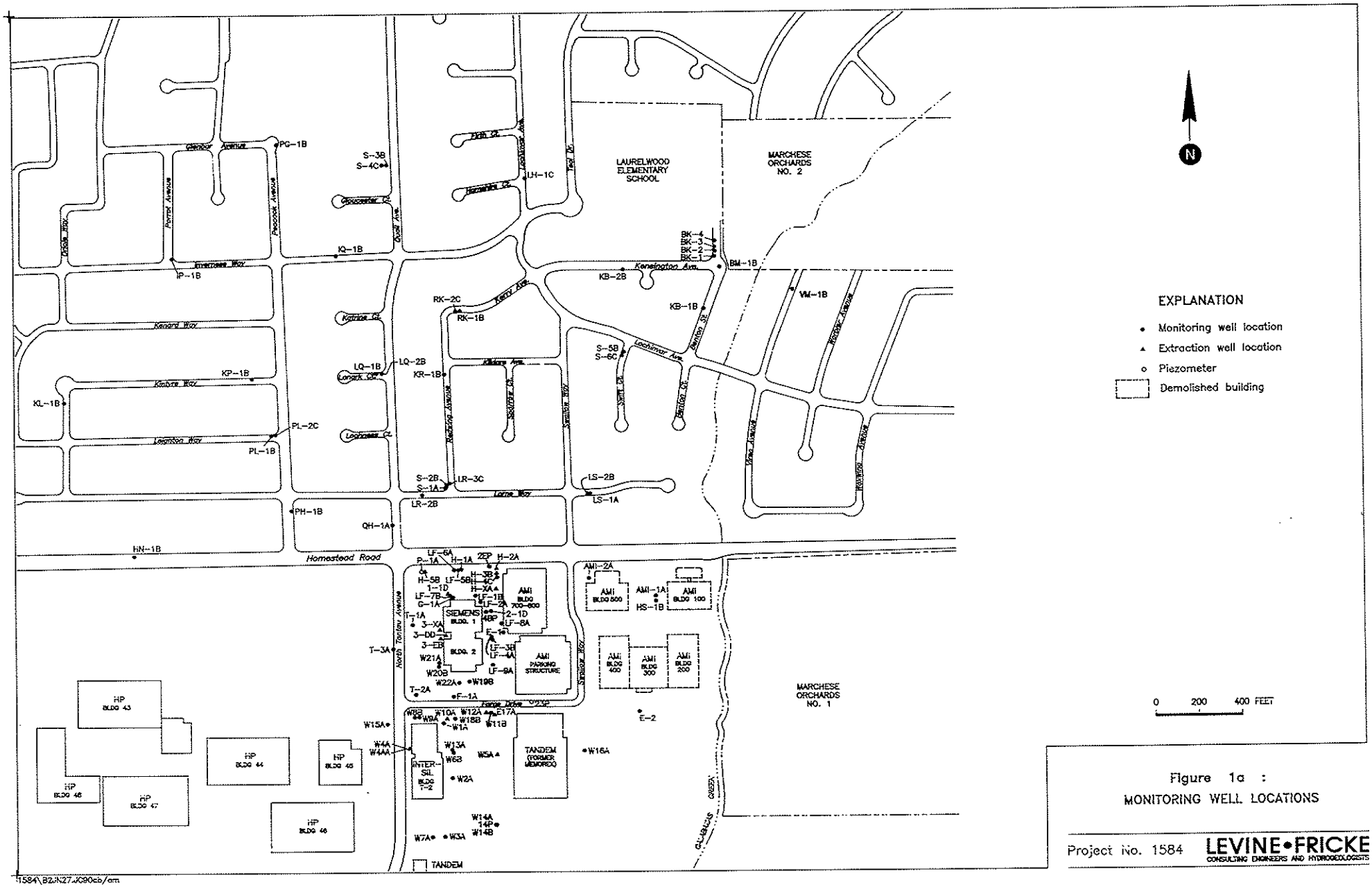
17. If any hazardous substance, as defined pursuant to Section 25140 of the California Health and Safety Code, is discharged in or on any waters of the state, or discharged and deposited where it is, or probably will be discharged in or on any waters of the state, the discharger shall report such discharge 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--business hours. A written report shall be filed with the Regional 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 effect, corrective measures that have been taken or planned, and a schedule of these activities, and persons/agencies notified.

18. 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 15, 1990.

Steven R. Ritchie
Executive Officer

Attachments:
Self-Monitoring Program
Site Map



EXPLANATION

- Monitoring well location
- Extraction well location
- Piezometer
- Demolished building

0 200 400 FEET

Figure 1a :
MONITORING WELL LOCATIONS

Project No. 1584 LEVINE•FRICKE CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1584\B2JN27.JC90cb/cm

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM

FOR

Siemens Components, Inc.
19000 Homestead Road
Cupertino, Santa Clara County

Intersil, Inc.
10900 North Tantau Road
Cupertino, Santa Clara County

Vallco Park, Ltd.
P. O. Drawer V
Cupertino, Santa Clara County

ORDER NO. 90 - 119

CONSISTS OF

PART A, December 1988
As Modified by SBTD, 1/23/89
With Appendices A-E

and

PART B, adopted August 15, 1990

PART B

Siemens Components, Inc.
19000 Homestead Road
Cupertino, Santa Clara County

Intersil, Inc.
10900 North Tantau Ave.
Cupertino, Santa Clara County

Vallco Park, Ltd.
P. O. Drawer V
Cupertino, Santa Clara County

I. DESCRIPTION OF SAMPLING STATIONS

All existing and future perched, A-, B-, C- and deeper zone monitoring and extraction wells as appropriate. See Table 2 (attached) for list of monitoring wells.

II. MISCELLANEOUS REPORTING. None.

III. SCHEDULE OF SAMPLING AND ANALYSIS

The schedule of sampling and analysis shall be that given in Table 1 (attached).

IV. MODIFICATIONS TO PART A.

A. Delete Sections B, D, E, F.2, F.3, G.1, G.4.b, G.4.e, and G.4.g.

B. In Section G.2, delete the first sentence of the third paragraph:

In addition, the waste discharger shall promptly accelerate his monitoring program to analyze the discharge at least once every day (Section D.2.h.).

C. The first paragraph of Section G.4 shall be changed to read as follows:

Written reports shall be filed with the Regional Board regularly for each calendar quarter (unless otherwise specified) and filed no later than the thirtieth day of the following month. The reports shall be compromised of the following:

D. Section G.4.a.1.) shall be changed to read as follows:

1) Identification of all violations of the site cleanup order and self-monitoring program found during the reporting period.

E. Insert section G.4.a.5) to read as follows:

Time periods during which the soil vapor extraction system or groundwater treatment system was not operating for greater than one week. Time periods during which the individual groundwater extraction wells were not operating for greater than one week.

F. The first paragraph of Section G.4.d. should be changed to read as follows:

Tabulations of the results from each required analysis specified in Part B by date, type of sample and detection limit and station. The report format will be prepared using the examples shown in APPENDIX B.

G. Section G.4.d.4) shall be changed to read as follows:

4) Lab results shall be signed by the laboratory director, copied, and submitted as an appendix to the regular report.

H. Insert Section G.4.d.5) to read as follows:

The EPA Method 8240 analyses shall include tentative identification and semi-quantified concentrations of non-priority pollutant substances of greatest apparent concentration, to be followed by identification and confirmation of peaks of greatest concentration.

I. Insert a new section G.4.g. to read as follows:

For each individual vapor extraction well, the total soil vapor extraction system and the groundwater extraction system: a quarterly tabulation showing the average air and groundwater flow rate, the average influent air and groundwater concentration and; on an annual basis, estimates of the average chemical mass removal rate from soil and groundwater and the cumulative mass of chemicals removed from soil and groundwater since startup. Include the above tabulations from startup, where available, through the current reporting period. Include concentration and mass data for TCE, TCA, any other individual main constituents, and total volatile organic compounds. When the existing vapor extraction system design does not permit the measurement of air flow from an individual vapor extraction well, a suitable down stream sampling point may be used to estimate air flow for that well.

J. The third sentence of Section G.5 shall be changed to read as follows:

In addition, the report shall contain a comprehensive discussion of the compliance record and all corrective action taken or planned which may be needed to bring the discharger into full compliance with the site cleanup Order and self-monitoring requirements.

I, Steven R. Ritchie, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedure set forth in this Regional Board's Resolution No. 73-16 in order to obtain data and document compliance with site cleanup requirements established in Regional Board Order No. 90-119.

2. May be reviewed at any time subsequent to the effective date upon written notice from the Executive Officer or request from the discharger, and revisions will be ordered by the Executive Officer or Regional Board.

3. Was adopted by the Board on August 15, 1990.

8/15/90
DATE

Steven R. Ritchie
Executive Officer

Attachments: Table I
Table II

TABLE 1
SCHEDULE FOR SAMPLING, MEASUREMENTS, AND ANALYSIS

SAMPLING STATION >>>>	All existing and future perched, A-, B-, C- and deeper zone monitoring and extraction wells as listed in Table 2.			
TYPE OF SAMPLE	G			
EPA 8010/8020 or 8010 for:purgeable priority pollutants In addition to: Freon 113 Priority Pollutant Metals	Q, 2/Y, 1/Y			
GC/MS (EPA 8240) Open Scan	1/Y*			

LEGEND FOR TABLE 1

G = grab sample
Q = quarterly
1/Y = once per year
2/Y = twice per year
* EPA 8010/8020 not required for quarters when EPA 8240 is performed.

Sampling and analysis shall be consistent with an approved QAPP.

TABLE 2

MONITORING WELLS TO BE SAMPLED AS REQUIRED IN TABLE 1

INTERSIL, INC.

Quarterly
W4A, W5A, W10A, W12A, E17A,

Semi-annual

W2A, W3A, W6B, W7A, W8B, W9A, W11B, W13A, W14A, W14B, W18B

SIEMENS COMPONENTS, INC.

Semi-annual
LF-2A, 1-1D(P), 2-1D, 2EP, 3-DD, 3-XA, 4BP, F-1A, G-1A, H-1A, H-2A, H-XA, LF-4A(P), LF-6A, LF-9A, T-2A*, W21A, W22A, 3-EB, H-3B, H-5B, LF-1B, LF-5B, LF-7B(z), W19B, W20B, H-4C*

Quarterly
T-1A, LF-3B*(z)

INTERSIL/SIEMENS OFF-SITE STUDY AREA

Quarterly
S-1A, LF-8A, RK-1B, S-3B*, S-5B, KP-1B, LS-2B, PG-1B, LH-1C*, LR-3C*, RK-2C

Semi-annual
LS-1A, QH-1A, T-3A*, W15A*, W16A*, PL-1B, S-2B, IQ-1B, IP-1B, KB-1B*, KB-2B, KR-1B, LQ-2B, PH-1B, PL-2C, S-4C, S-6C, BK-1*, BK-2*, BK-3*, BK-4*

Annual
KL-1B

Note
Additional wells shall be included in Table 2 as installed.

* - Only wells listed with a * shall be sampled by EPA Method 8020.
(P) - Wells 1-1D and LF-4A shall be analyzed annually for priority pollutant metals.
(z) - Wells LF-3B and LF-7B shall be analyzed annually for zinc.

Due to drought conditions, some wells have insufficient water levels and slow recovery rates. Wells will not be sampled if water levels are inadequate, but shall be re-incorporated into the monitoring program if water levels recover sufficiently to permit accurate sampling.