CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. 95-086

SITE CLEANUP REQUIREMENTS FOR

LINCOLN MENLO IV AND V ASSOCIATES LIMITED and

ALLIED SIGNAL, INC. and

FAIRCHILD INDUSTRIES, INC.

for the property located at

LINCOLN WILLOW BUSINESS PARK
960 - 990 HAMILTON DRIVE
MENLO PARK
SAN MATEO COUNTY

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

SITE DESCRIPTION

1. The Lincoln Willow Business Park (hereinafter referred to as the Park) is located in northern Menlo Park at the intersection of Willow Road and Hamilton Avenue (See Figure 1). It consists of approximately 62 acres which is currently occupied by twenty single and double story mixed R&D and mixed commercial use buildings. The Park is subdivided into legal parcels, and the parcels are owned by eight separate limited partnerships. The Park is bounded to the north by Southern Pacific Railroad tracks, to the west by a residential area, to the south by the Hetch-Hecthy aqueduct right-of-way, and to the east by the Menlo Business Park.

2. Groundwater pollution is present at the Park. Lincon Menlo IV and V Associates Limited (hereinafter referred to as "Lincoln") is the current owner of the parcel from which the releases discussed in this Order occurred. (the "Site"). The Site is commonly referred to as Parcel H, having the addresses of 960 - 990 Hamilton Drive, Menlo Park, California. The 62 acre property was purchased from the Carnduff estate in 1947 by United Helicopters, which subsequently became Hiller Helicopters and Hiller Aircraft Corporation, and was developed as an aircraft testing and manufacturing facility. In 1960, the 62 acre property was acquired by Electric Auto-Lite Company (subsequently Eltra Corporation, which was acquired by Allied Signal, Inc.), and leased back to Hiller Aircraft Corporation. Fairchild Industries, Inc. (Fairchild) purchased the 62 acre property in 1964, and continued manufacturing helicopters until approximately 1974, at which time it moved its operation to Maryland. Fairchild then leased the property to various tenants until Lincoln Property Company entity purchased the 62 acre property in 1979, and began to redevelop it into a business park, which is its current use.

DISCHARGERS

3. Fairchild Industries, Inc. ("Fairchild") is named as a discharger because it owned and operated the 62 acre property at the time of the discharge. Allied Signal, Inc. ("Allied") is named as a discharger because it is a successor in interest to the Eltra Corporation, a former owner of the 62 acre property during the time of the release. During the manufacturing operations of Eltra Corporation and Fairchild Industries, Inc. and/or their respective tenants, chemical solvents were discharged into a concrete sump which allowed the chemicals to leach into soil and groundwater at the Site. Lincoln Menlo IV and V Associates Limited ("Lincoln") is named as a discharger because it is the current owner of the Site. If additional information is submitted indicating that any 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 that party's name to this Order. Lincoln, Fairchild, and Allied are hereinafter referred to as the Dischargers.

SITE HYDROGEOLOGY

4. The Park is located on an alluvial plain at the southwest margin of the San Francisco Bay, within the lowest part of the San Francisquito Creek alluvial fan close to the juncture with the marsh and mud flat estuarine deposits of the bay. Ravenswood Slough is the nearest surface water body, located approximately 800 feet northwest of the site boundary.

5. The alluvial fan at the Park consists of course-grained, sand and gravel, stream channel deposits that are interbedded with fine-grained clay and silty clay deposits. The fine-grained deposits, which have been interpreted as inter-channel overbank or flood basin deposits, occur in the shallow subsurface to depths of approximately 10 feet. These units are underlain by sand and gravel deposits which vary in thickness from one to twenty feet. There appear to be two primary gravel channels which transect the site, one which trends northwest and one which trends northeast. The gravel channels provide the main conduits for groundwater contaminant transport.

6. Groundwater is encountered at approximately nine feet below grade. This water bearing zone is considered the A-aquifer and extends to a depth of approximately 36 feet. The underlying B-aquifer occurs between 34 to 60+ feet below grade. These aquifers are typically separated by 10 to 25 feet of clay and silty clay. The groundwater flow is in an northwesterly direction and is locally influenced by the gravel stream bed deposits. The magnitude of the groundwater gradient ranges from .0015 ft/ft to .0028 ft/ft. The groundwater flow rate within the gravel deposits is estimated between 2 to 10 feet per day.

7. Due to the close proximity to the San Francisco Bay, the concentration of Total Dissolved Solids (TDS) within the groundwater varies throughout the site. Within the southern portion of the Park the TDS is approximately 350 ppm and at the northern or bay side of the Park the TDS increases to 26,000 ppm. Due to the close proximity of the Bay, the salinity wedge which appears to underly the Park, and low probability of the groundwater being developed as a drinking water supply due to salt water intrusion, the beneficial use of the groundwater underlying the Park is not considered as a potential drinking water source.

SITE INVESTIGATIONS

8. Remedial investigations at the Park began in 1990. A preliminary investigation conducted in

1990 detected concentrations of volatile organic compounds (VOCs) in the soil and groundwater within the former metal plating shop, located at the Site, formerly utilized by Hiller/Fairchild. It was discovered that the primary source of contamination was caused by the placement of solvents into a subgrade concrete sump which subsequently leaked into the soil and groundwater. Several VOC compounds have been detected of which the primary constituent detected is trichlorethylene (TCE). Concentrations of TCE have been detected within the groundwater ranging from nondetect to 23,000 ppb underlying the Site (Parcel H), the former metal plating shop. Subsequent investigations were conducted at the site to determine the extent of groundwater contamination. A series of monitoring well, hydropunch, and grab water samples were collected to define the extent of contamination. To date, 29 monitoring wells have been installed and 50 grab water samples collected at the Park. It is Board staff's position that the groundwater contamination has been adequately defined at the Park.

9. The groundwater contamination appears to be limited to the A-aquifer. A monitoring well has been installed to monitor the water quality of the B-aquifer downgradient of the source area. There has been no contamination detected within the B-aquifer groundwater to date.

10. The maximum concentrations of VOCs detected on-site in groundwater at the Park have been: trichloroethylene (TCE) at 23,000 ug/l; trans-1,2-dichloroethene (trans-1,2-DCE) at 120 ug/l; cis-1,2-dichloroethene (cis-1,2-DCE) at 930 ug/l; 1,1,1-trichloroethane (1,1,1-TCA) at 11 ug/l; 1,1-dichloroethane (1,1-DCA) at 23 ug/l; 1,2-dichloroethane (1,2-DCA) at 1.5 ug/l; 1,1-dichloroethene (1,1-DCE) at 45 ug/l; tetrachloroethylene (PCE) at 11 ug/l; chlorobenzene (CB) at 120 ug/l; chloroform at 2.3 ug/l; and vinyl chloride (VC) at 190 ug/l. Since remedial actions have been taken, the maximum concentrations in the groundwater measured at wells completed in the shallow aquifer have significantly decreased. The current concentrations of solvents still remaining in the groundwater are as follows: trichloroethylene (TCE) at 3,100 ug/l; trans-1,2-dichloroethene (trans-1,2-DCE) at 68 ug/l; cis-1,2-dichloroethene (cis-1,2-DCE) at 140 ug/l; 1,1,1-trichloroethane (1,1,1-TCA) at 2.3; 1,1-dichloroethane (1,1-DCA) at 13 ug/l; 1,2-dichloroethane (1,2-DCA) at 1.5 ug/l; 1,1-dichloroethene (1,1-DCE) at 4.3 ug/l; tetrachloroethylene (PCE) at 9.1 ug/l; chlorobenzene (CB) at 77 ug/l; chloroform at 1.2 ug/l; and vinyl chloride (VC) at 53 ug/l.

11. The groundwater solvent plume containing the constituents listed above extends northward from the source area to the north edge of the Park boundary. The plume can be designated by two characteristic areas: the first area defined as the Site, the former metal plating shop, and the second area consisting of the remainder of the Park (See Figure 2). Elevated concentrations of groundwater contamination still remain within the Site, while the rest of the Park appears to have lower concentrations of groundwater contamination.

INTERIM REMEDIAL ACTIONS

12. During September 1992, the concrete sump and the surrounding solvent contaminated soil was excavated and disposed of offsite. After the initial soil removal action was completed, a soil vapor extraction system was installed to treat the remaining soil contamination. The soil vapor extraction (SVE) system was installed in early 1993 and began operating in June of 1993. The system consists of seven dual extraction wells located south of the building located at the Site. Soil vapor and groundwater are extracted from each well. The SVE system removes VOCs from the unsaturated soils while the groundwater extraction system prevents mounding of the

groundwater within the extraction area in addition to treating the groundwater within the source area. The extracted groundwater is treated by liquid phase granular activated carbon (GAC) contactors prior to discharge to the sanitary sewer system under permit issued by the West Bay Sanitary District. The extracted vapor is treated by a combination of vapor-phase GAC adsorption and catalytic oxidation prior to discharge to the atmosphere.

13. The Dischargers have been operating the onsite groundwater extraction system continuously since June 1992. Concentrations of TCE in soils were originally detected at 9,600 ppm. During the initial pilot study of the SVE system, TCE soil vapor concentrations were detected at 3,050 ppm volume of TCE vapor/ volume of air (v/v) 1,2-DCE at 99.3 ppm (v/v) and VC at 171 ppm (v/v). This translates to a mass removal rate of approximately 5 to 10 pounds of TCE per day. Since commencing the operation of the SVE system a total of 388.5 pounds of TCE has been removed as of December 1994. During the first quarter of operation, the system recovered 263.9 pounds of TCE. The mass removal rate has decreased to 2.1 pounds of TCE/quarter as of the 3rd quarter of 1994. The soil vapor extraction system has been very successful in treating the high concentrations of TCE and other volatile constituents within the vadose zone soils and it appears that the system is approaching the asymptotic limit for removal of TCE laden soil vapor. Upon demonstration that the asymptotic level has been reached, the system will be discontinued.

14. Although the SVE system has been effective at removing contamination from within the vadose zone, the groundwater still contained elevated levels of TCE and other volatile organic compounds. In an attempt to decrease the level of groundwater contamination, an air sparging pilot study was conducted in November 1994 to determine whether it would be an effective means for groundwater treatment. The study consisted of introducing air below the water table to promote the volatilization of VOCs into the vapor phase for extraction and treatment by the SVE system. The study results were inconclusive as to the effectiveness. The chemical concentrations in groundwater samples after air sparging had significantly decreased, however, no detectable concentration of VOCs could be measured in the influent to the SVE treatment system. The latest round of groundwater sampling indicated that a rebound in groundwater concentrations (up to 3,100 ppb of TCE) had occurred after the system was turned off and the groundwater had a chance to reach equilibrium.

RISK ASSESSMENT

15. The Dischargers prepared a baseline health risk assessment in November 1993. The potential significant exposure pathway for chemicals remaining at the Park is groundwater. The assessment on risk at the Park calculates a non-carcinogenic health hazard index of less than one, under a scenario of on-site exposure, potable water ingestion and vapor inhalation, dermal contact, using VOC concentrations detected at the time the risk assessment was made. It was determined that a cancer risk for ingestion of groundwater at the Park was in excess of U.S. EPA recommended risk management levels. However, since the groundwater underlying the site is not considered a potential drinking water source, this pathway (i.e. ingestion of groundwater) is considered incomplete and was excluded when considering the overall risk at the site and when the institutional controls are implemented as required by this Order.

16. A second exposure pathway, by volatilization from soil and/or groundwater, could exist if excavation of shallow soil occurred and was not properly identified, monitored, and controlled if necessary. The report did not include a calculation for estimated risk due to the escape of soil and/or

groundwater vapor during excavations. However, this risk is minimal due to the low concentrations of VOCs remaining. The total risk is within the U.S. EPA recommended risk management levels for Site cleanup despite the maximum reasonable exposure scenario considered.

17. The remaining risk(s) can be managed by implementing deed restrictions, a long-term monitoring program, and a contingency plan if monitoring indicates that additional remediation is necessary.

BASIS FOR CLEANUP OBJECTIVES

18. The Board establishes the overall cleanup level for a water body based upon the most sensitive beneficial use identified. In all cases, the Board first considers high quality or naturally occurring "background" concentration objectives as the cleanup levels for polluted groundwater. For most cases, the most sensitive beneficial use is municipal supply or drinking water. However, since the groundwater underlying the entire Park does not meet the drinking water criteria as specified in State Board Resolution 88-63, other beneficial uses were considered to determine applicable water quality goals for the groundwater at the site. Due to the close proximity to Ravenswood Slough, and the likelihood of groundwater discharge to the slough, protection for salt water aquatic species was determined to be the most sensitive beneficial use.

    At present, there are no chemical standards established for groundwater that flows into San Francisco Bay or its tributaries. Therefore, a search for water quality standards for volatile organic compounds that may be applicable for groundwater discharge to a surface water receptor was performed. The following applicable documents were examined:

    a. The State Water Resources Control Board's Water Quality Control Plan for Enclosed Bays and Estuaries, dated May 1993, (Background references cited in this document were utilized only, as the formal Plan was rescinded in 1994),

    b. National Toxics Rule (50 Federal Register 60911, 22 December 1992),

    c. The United States Environmental Protection Agency (USEPA) Office of Science and Technology Health and Ecological Criteria Department, Water Quality Summary Criteria - May 1991.

    d. The United States Environmental Protection Agency (USEPA) Region VIII Clean Water Act Section 304a Criteria Chart (July 1993),

    e. Lowest observed chronic or acute levels observed for salt water aquatic organisms ("lowest effect concentration" or LEC), obtained from the U.S. EPA Integrated Risk Information System ("IRIS"),

    In addition to the documents listed above, a literature review was performed using the AQUIRE database to identify documented biological testing that has been performed to identify the concentration at which volatile organic constituents had acute or chronic properties to the organisms inhabiting Ravenswood Slough. The AQUIRE database is maintained by Spectrum Research, Inc. for U.S. Environmental Protection Agency and is updated on a quarterly basis. The search was conducted in August 1994. Data was

found for fish, shrimp, barnacles, and a variety of micro-organisms. The data revealed that carbon-14 uptake was stimulated in phytoplankton at a TCE concentration of 500 ug/l; no effect was observed in diatoms at a concentration of 100 ug/l; shrimp became intoxicated at 2,000 ug/l; and lethal effects to the organisms listed above occurred at concentrations greater than 8,000 ug/l.

It was determined by staff, that insufficient information was available from the literature search to conclude that the organisms inhabiting the slough were adequately protected using the available information. Therefore, a bivalve bioassay developmental test was performed on the Pacific Oyster, a species representative of organisms which inhabit Ravenswood Slough. Bivalve embryos were subjected to a sample of water collected from Ravenswood Slough and spiked with different ranges of TCE concentrations. Trichloroethylene (TCE) was selected because it was the most widespread and concentrated contaminant detected in the groundwater underlying the site. The bioassay was conducted using six concentrations of TCE ranging from 62.5 to 2,000 ug/l. Ninety three percent of the organisms developed normally for concentrations of TCE up to 2,000 ug/l; the maximum concentration that the bivalves were exposed to. Based upon the results of the bioassay combined with the literature search, it appears that 92 ug/l, the most protective value within the documents researched, is protective of the organisms inhabiting the slough and is an applicable and relevant water quality standard for the groundwater entering the slough. It is proposed that the water quality objectives for the other volatile organic compounds groundwater entering the slough be considered from the documents listed above. The values were considered within the order listed and then used in the fate and transport analysis.

Using these values, a computer fate and transport model was run which simulated the hydrogeology at the site to determine the appropriate concentrations of identified chemicals in the groundwater underlying the site that would not exceed the quality objectives for the groundwater entering the slough after fate and transport. Site specific parameters were entered into the groundwater model AT123D and compared. The following groundwater concentrations were obtained for the groundwater at the downgradient Park boundary that would not exceed the groundwater objectives at the slough:

TABLE 1: BASIS FOR GROUNDWATER REMEDIAL ACTION STANDARDS (UG/L)

CHEMICAL	WATER QUALITY GOAL FOR GROUNDWATER AT RAVENSWOOD SLOUGH	MODELLED MAXIMUM GROUNDWATER CONCENTRATIONS AT SITE BOUNDARY PROTECTIVE OF SLOUGH	ACTUAL MAXIMUM CONCENTRATION IN GROUNDWATER AT THE PARK SINCE 1/1/94
Chlorobenzene	488	7,916	77
Chloroform	480	2,200	1.2
1,1-Dichloroethane	5	20	13
1,2-Dichloroethane	130	470	1.5
cis-1,2-Dichlorothene	11,600	62,143	140
trans-1,2-Dichloroethene	700	3,650	68
1,1,1-Trichloroethane	3,100	27,618	3.3
Trichloroethylene	92	730	3,100
Tetrachloroethane	6.9	121	9.1
Vinyl Chloride	34	99	53
1,1-Dichloroethene	3.2	17	4.3

A comparison of the highest concentrations of contaminants remaining in the groundwater at the Park to the concentrations determined to be protective of Ravenswood Slough reveal that only five constituents, 1,1-DCA, TCE, PCE, 1,1-DCE and vinyl chloride, remain above the modelled levels deemed to be protective. Therefore these chemicals will be managed in accordance with the requirements of this Order. The other six chemicals identified are one to two orders of magnitude below the levels considered to be protective if the groundwater were to reach the slough. Based upon these findings, no further action is deemed necessary for the following six chemicals: chlorobenzene (CB), 1,2-dichloroethane (1,2-DCA), cis-1,2-dichlorethene (cis-1,2-DCE), trans-1,2-dichlorethene (trans-1,2-DCE), and 1,1,1-trichloroethane (1,1,1-TCA).

NON-ATTAINMENT AREA

19. Available options for removing or treating *in situ* groundwater pollution are limited for this site. At many sites in this region and elsewhere, pump and treat technology has been inadequate to meet low cleanup objectives because the costs and time frame are

prohibitive.

20. The Dischargers have documented the following:

    a. An appropriate cleanup program, including adequate source removal, has been fully implemented and reliably operated for a period of time which staff believes is adequate to understand both the hydrogeology of the site and pollutant dynamics;

    b. The Dischargers have demonstrated (e.g., pump tests, groundwater monitoring, transport modeling), and will verify (long term monitoring program) that no significant pollutant migration will occur due to hydrogeologic or chemical characteristics;

    c. The best available technologies are no longer technically or economically feasible to achieve further significant reductions in pollutant concentrations;

    d. The remaining human health, water quality, and environmental risks posed by residual soil and groundwater pollution will be contained and managed through an acceptable plan as required by this Order. The plan will include a management plan, a deed restriction, a contingency plan, and regular quarterly groundwater monitoring.

21. The Dischargers are finalizing the Feasibility Study / Remedial Action Plan which proposes:

    a. Continuance of the soil vapor/groundwater extraction system, until an evaluation of the cost effectiveness and the mass removal rate has been finalized. Based upon the evaluation, the Dischargers will propose a date for the system to be terminated and removed.

    b. Execution of deed restrictions for the property.

    c. As part of risk management the Dischargers will implement a quarterly sampling schedule with quarterly reporting to the Board for two years. After two years of monitoring has been performed, an evaluation of the monitoring data and recommendations for additional monitoring including appropriate modifications in monitoring type and frequency will be submitted.

    d. Implementation of contingency procedures if certain criteria are exceeded.

22. The Dischargers have notified the downgradient neighbors, Raychem Corporation, Sun Microsystems, as well as the tenants at the Park of the proposed long term remedial measures and cleanup requirements for the Park. Subsequent meetings were held with the down gradient neighbors. A meeting is scheduled with the tenants on April 5. No objections have been raised to date.

23.. Based on the above findings and in consideration of the reasonable protection of beneficial uses to the maximum benefit to the people of the State pursuant to State Board Resolution 68-16, a limited non-attainment zone (NAZ) is appropriate on the Site. Within this area, pollutant

concentrations may exceed relevant water quality objectives but properly contained and managed as required by this Order and will be protective of water quality outside the NAZ as well as public health and the environment at all surface locations.

STATE BOARD RESOLUTIONS

24. State Board Resolution 68-16
On October 28, 1968, the State 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 affected beneficial uses. This is based on a Legislative finding, contained in section 13000, California Water Code, which states in part that it is State policy that "waters of the State shall be regulated to attain the highest water quality which is reasonable". The cleanup standards and non-attainment area established by this Order are consistent with this policy.

25. State Board Resolution 92-49
On June 18, 1992, the State Board adopted Resolution 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304". Resolution 92-49 was amended on April 21, 1994. This Order and the steps leading up to its adoption are consistent with Resolution 92-49.

REGIONAL BOARD RESOLUTIONS

26. Regional Board Resolution 88-160
Resolution 88-160 strongly encourages the maximum feasible reuse of extracted water from groundwater pollution remediations either by the dischargers or other public or private water users.

As part of the FS/RAP the Dischargers will evaluate the feasibility of reuse of the extracted water and submit a report with their proposal to the Board.

27. Regional Board Resolution 89-39
Resolution 88-39, "Incorporation of 'Sources of Drinking Water' Policy into the Water Quality Control Plan" was adopted on March 15, 1989. This policy defines groundwater as suitable or potentially suitable for municipal or domestic supply if it:

a. has a total dissolved solids content of less than 3,000 mg/l, and

b. is capable of producing sufficient water to supply a single well with at least 200 gallons per day.

Because of the high TDS, 26,000 ppm, detected in the groundwater underlying the Park (as described in Finding 7), the beneficial use of the groundwater is not considered as a potential drinking water source as defined by this Resolution.

BASIN PLAN

28. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) on December 16, 1986 and amendments thereafter. The Basin Plan contains water quality objectives for Ravenswood Slough and South San Francisco Bay and contiguous surface waters and groundwater.

29. The existing and potential beneficial uses of the groundwater underlying and adjacent to the Park include:

    a. Industrial process water supply
    b. Industrial service supply
    c. Agricultural supply
    d. Ground Water Discharge to San Francisco Bay

CREATION OF POLLUTION OR NUISANCE

30. The discharger has caused or permitted, and threatens 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.

CEQA

31. 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.

COST RECOVERY

32. Pursuant to Section 13304 of the Water Code, the dischargers are hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized dischargers of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.

NOTICE

33. 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 and has provided them with the opportunity for a public hearing and opportunity to submit their written views and recommendations.

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

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

A. PROHIBITIONS

1. The discharge of wastes or hazardous materials in a manner which will degrade water quality or adversely affect the beneficial uses of the waters of the State is prohibited.

2. Further significant migration of pollutants through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of pollutants are prohibited.

B. SPECIFICATIONS

1. The storage, handling, treatment or disposal of polluted soil or groundwater shall not create a nuisance as defined in Section 13050(m) of the California Water Code.

2. The Dischargers shall conduct further reporting and monitoring activities as needed and as described in this Order. Results of such monitoring activities shall be submitted to the Board. The Dischargers shall submit to the Board acceptable monitoring program reports containing results of work performed.

3. Concentrations of polluted groundwater sampled from the boundary wells as defined in the groundwater sampling and monitoring program and as may be designated according to Task 5 of this Order shall be the appropriate cleanup standard, as shown in Table 2.

TABLE 2: GROUNDWATER CONTAINMENT STANDARDS FOR SITE BOUNDARY WELLS (UG/L)

GROUNDWATER STANDARDS (UG/L)	
CHEMICALS	**CONTAINMENT MONITORING STANDARD (AT SITE BOUNDARY)**
1,1-Dichloroethane (1,1-DCA)	20
1,1-Dichloroethene (1,1-DCE)	17
Trichloroethylene (TCE)	730
Perchloroethylene (PCE)	121
Vinyl Chloride (VC)	99

CONTINGENCY PLAN

4. The contingency plan for groundwater remediation shall be implemented whenever:

   a. The confirmed concentration of any chemical of Table 2 in any guard or boundary well (as defined in the FS/RAP) equals or exceeds the appropriate remedial action objective; or

   b. The trend of the concentration of 1,1-DCA, 1,1-DCE, TCE, PCE, or vinyl chloride in any guard or boundary well (as defined in the FS/RAP) exhibits a rate of increase which indicates that the appropriate groundwater standard will be reached or exceeded (i) before the next normally scheduled sampling event or (ii) before the time required to implement the contingency plan.

C. PROVISIONS

1. The Dischargers shall comply with all Prohibitions and Specifications of this Order, in accordance with the following time schedule and tasks:

   a. **TASK 1:** SUBMIT A FINAL FEASIBILITY STUDY/REMEDIAL ACTION PLAN

   DUE DATE: June 1,1995

   Description: Submit the Final Remedial Action Plan describing the effectiveness of the dual soil vapor and groundwater extraction system, anticipated date for the termination of the system, and any verification sampling to be performed upon the removal of the system. The report should include a quarterly monitoring plan which demonstrates compliance with the remedial action standards specified in Table 2. Additionally, the report shall include a contingency plan to be implemented if necessary to prevent violation of the requirements of this Order.

   b. **TASK 2:** DEED RESTRICTIONS

   DUE DATE: July 1, 1995

   Description: Submit a technical report acceptable to the Executive Officer which consists of deed restrictions for all legal parcels located at the Park.

   DUE DATE: August 1, 1995

   Description: Submit a technical report acceptable to the Executive Officer which documents that the deed restrictions have been filed with the proper County Office and are in effect.

   c. **TASK 3:** EVALUATION OF NEW TECHNICAL INFORMATION

   DUE DATE: 90 days after request from Executive Officer

Description: Submit a technical report acceptable to the Executive Officer that documents 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.

d. **TASK 4:** FIVE YEAR STATUS REPORT

DUE DATE: June 1, 2000

Submit a technical report acceptable to the Executive Officer which describes the results of the past monitoring program, any trends or changes in contaminant plume configurations, additional work or investigations performed, and projected work to be done in the next five years.

2. If the Dischargers are delayed, interrupted or prevented from meeting one or more of the completion dates specified in this Order, the Dischargers shall promptly notify the Executive Officer. In the event of such delays,the Board may consider modification of the task completion dates established in this Order.

3. The Dischargers shall submit quarterly technical reports documenting quarterly groundwater monitoring commencing July 15, 1995 covering the previous calendar quarter. The quarterly technical report shall include, but need not be limited to, all information required to be submitted by the Self-Monitoring Program on a quarterly basis for this site. This requirement may be deleted or modified by the Executive Officer in two years or sooner upon request by the Dischargers and submittal of information to demonstrate that a reduction is appropriate.

4. On an annual basis, technical reports on the progress of compliance with all requirements of this Order shall be submitted, commencing with the report for 1995, due January 15, 1996. The annual report may be combined with other technical report(s) which are due to be submitted on January 15, 1996. The progress reports shall include, but need not be limited to: information required to be submitted by the Self-Monitoring Program on an annual basis; updated water table/piezometric surface contour maps, pollutant concentration contour maps for all affected water-bearing zones, and base map(s) showing locations of all properly identified monitoring and extraction wells and identifying adjacent facilities and structures; and an evaluation of the effectiveness of the cleanup actions/systems and the feasibility of attaining groundwater and cleanup goals.

5. All hydrogeological plans, specifications, reports and documents shall be signed by or stamped with the seal of a registered geologist, registered civil engineer, or certified engineering geologist.

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

7. 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.

8. 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 agency:

   San Mateo Office of Environmental Health

9. The Dischargers shall permit the Board or its authorized representative, in accordance with Section 13267 (c) of the California Water Code:

   a. Entry upon dischargers' premises in which any pollution sources exist, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the terms and conditions of this Order.

   c. Inspection of any monitoring equipment or methodology implemented in response to this Order.

   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

10. The property owner shall file a report on any changes in site occupancy, ownership or property use inconsistent with current zoning requirements or which may affect the terms of this Order, within 15 days of each occurrence. If redevelopment is proposed, notice to the Board shall be made when a final plan is adopted or accepted by the property owners.

11. If any hazardous substance is discharged in or on any waters of the State, or discharged and deposited where it is, or probably will be discharged in or on any waters of the State, the Dischargers shall report such a discharge to this Board, at (510) 286-1255 on weekdays during office hours from 8 a.m. to 5 p.m., and to the Office of Emergency Services at (800) 852-7550 during non-office hours. A written report shall be filed with the Board within five (5) working days and shall contain information relative to: the nature of the waste or pollutant, quantity involved, duration of incident, cause of spill, Spill Prevention, Control and Countermeasure Plan (SPCC) in effect, if any, estimated size of affected area, nature of effects, corrective measures that have been taken or planned, and a schedule of these activities, and persons notified.

12. The dischargers shall be liable, pursuant to Section 13304 of the Water Code, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such wastes, 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

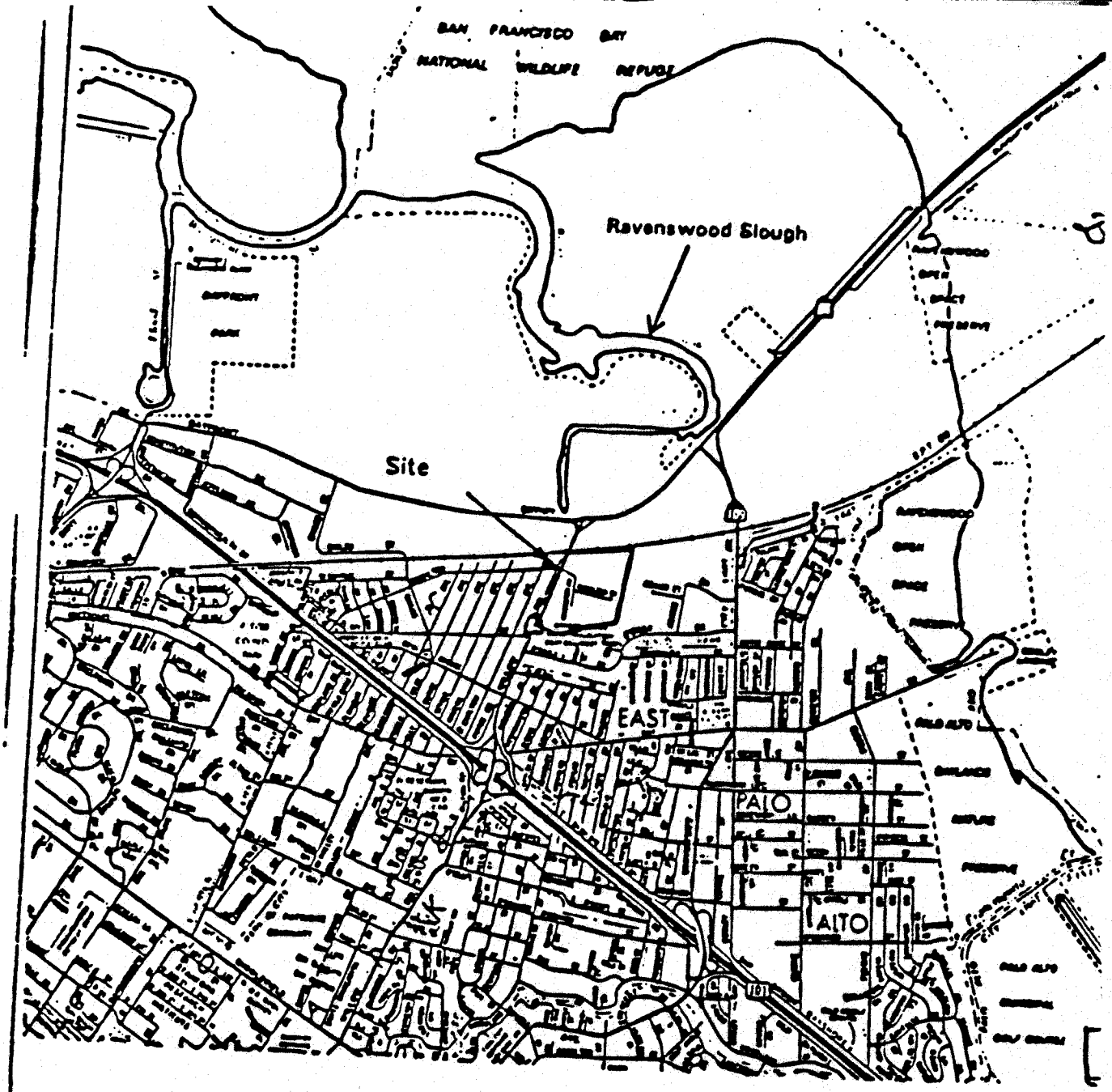
this Order and according to procedures established in that program. Any disputes raised by the dischargers over the reimbursements amounts or methods used in that program shall be consistent with the dispute resolution procedures of that program.

13. 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 April 19, 1995.

Steven R. Ritchie
Executive Officer

Attachments: Figures 1 & 2



Source: CSAA Map, Palo Alto, 1990

0 3000 6000
(Approximate Scale in Feet)

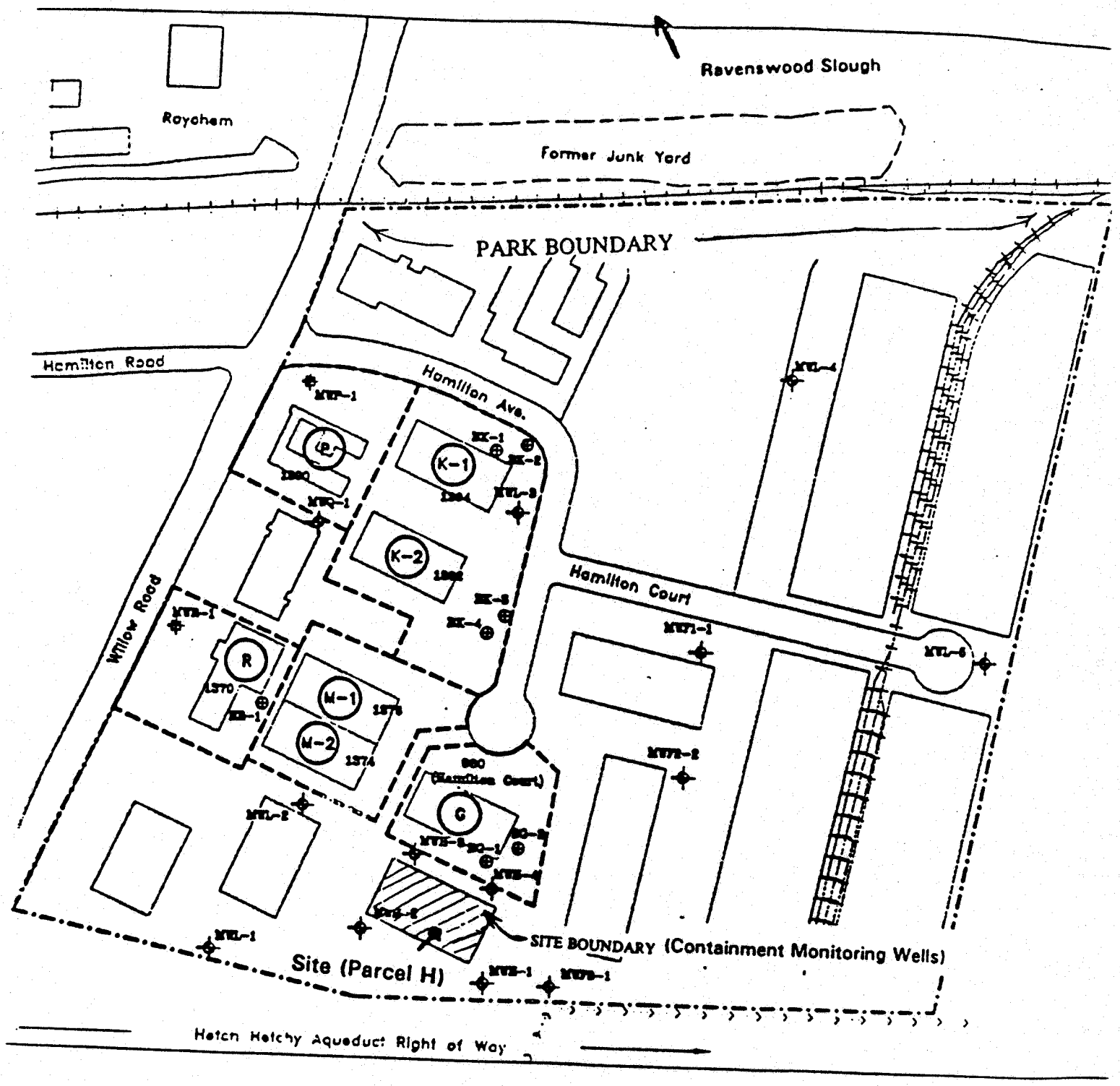
Erler & Kalinowski, Inc

Site Locatio

Lincoln Willow Business Pa
Menlo Park, C
November 199
EKI 920019.2
Figure

Notes:

1. All locations are approximate.



SITE BOUNDARY

Figure 2: Site Map
Lincoln Willow Business Park