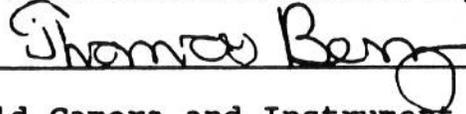


REGIONAL WATER QUALITY CONTROL BOARD INTERNAL MEMO

To: Steven R. Ritchie  
Executive Officer

From: Thomas R. Benz  
Water Resource Control Engineer

  
\_\_\_\_\_

DATE: January 3, 1990

SUBJECT: Advalloy Inc. and Fairchild Camera and Instrument

I. BACKGROUND

Advalloy, the current site owner, has occupied the facility since 1968 and purchased the property in 1971. Fairchild Camera and Instrument was the previous occupant of the property from 1957 to 1967. The site is located between East Charleston and Fabian Way off of San Antonio Rd. in Palo Alto. See location map. It is a small site and has only one building. The Advalloy operation consists of precision metal stamping for the semi-conductor and defense industry. Fairchild generally used the site for research, development, start-up production, and instrumentation. Both companies used VOC solvents. Advalloy's latest study shows elevated concentrations of VOC's in soil and shallow groundwater.

II. RATIONALE FOR SITE CLEANUP REQUIREMENTS

The existence of soil and groundwater pollution at the site warrants an investigation of all potential pollutant source areas. The Tentative Order requires the dischargers to fully characterize the lateral and vertical extent of the soil and groundwater pollution and to develop Interim Remedial Actions which will be initiated, if warranted, prior to final site remediation.

III. PRIMARY ISSUE

The Tentative Order for Advalloy Inc. was first proposed for the August 1989 agenda. This item was continued to a future Board meeting to determine whether Fairchild should be added to the Tentative Order and/or whether to refer the site to the Department of Health Services for cleanup under the State Superfund program (which has since then ceased to exist). We received a letter on September 1, 1989 that summarizes the information that Advalloy compiled in support of its position on naming Fairchild as a discharger. In response to this letter Fairchild objected to Advalloy's proposal to name Fairchild as a discharger. However, based on the evidence at that time, the staff decided to name both Advalloy and Fairchild in the Tentative Order and received both companies comments' on November 27, 1989 and on December 8, 1989.



#### IV. POINTS OF CONTENTION

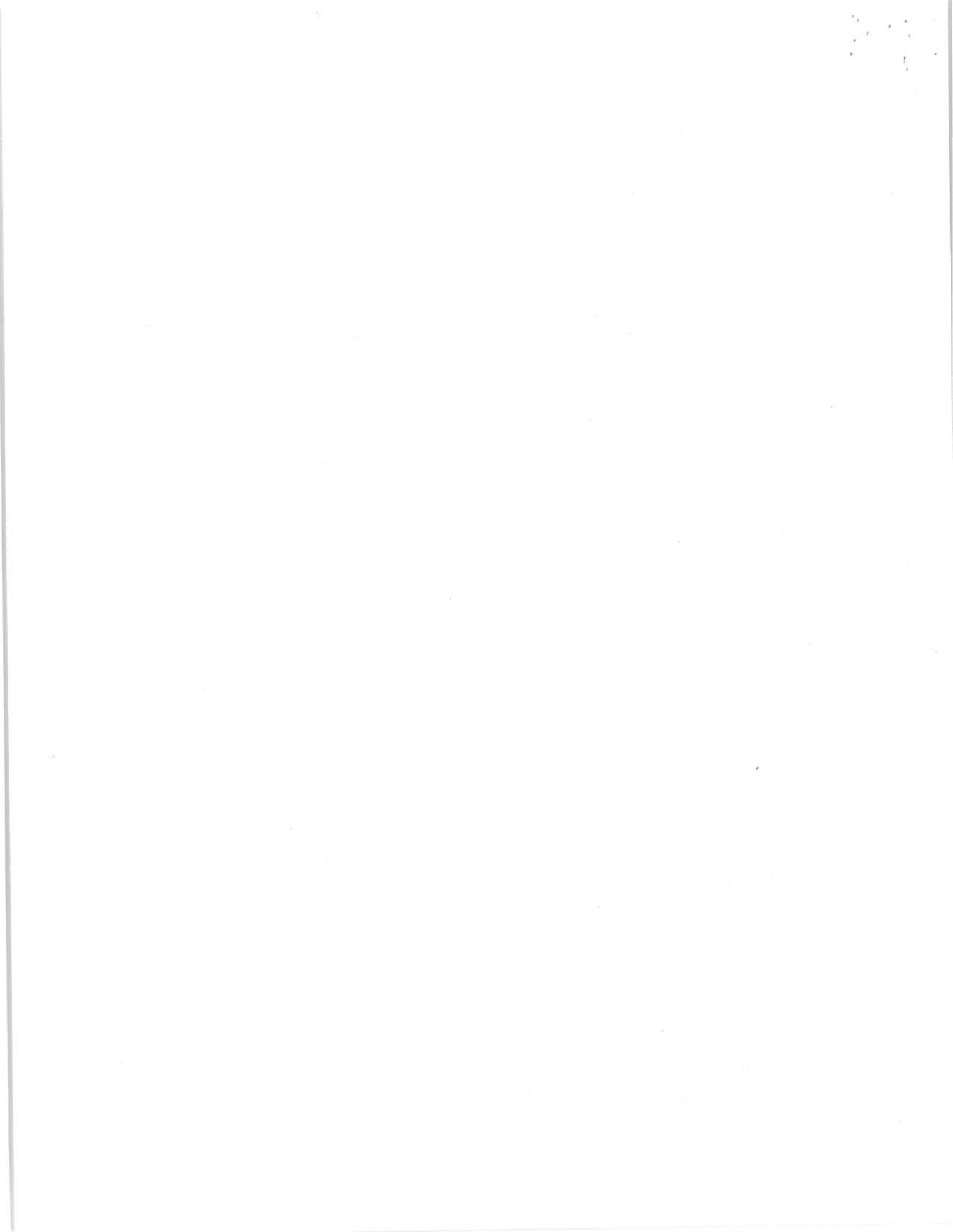
As a result of the information collected, comments, and previous correspondence with Advalloy and Fairchild, shown on the attached chronology, the following is known:

##### ADVALLOY

1. Current Owner
2. Advalloy uses solvents
3. Advalloy is known to have discharged chemicals to the sump
4. Ground water fluctuated in the sump (A sign that the sump does leak to the environment)
5. Based on soil boring and groundwater data the sump is a source of VOC's.

##### FAIRCHILD

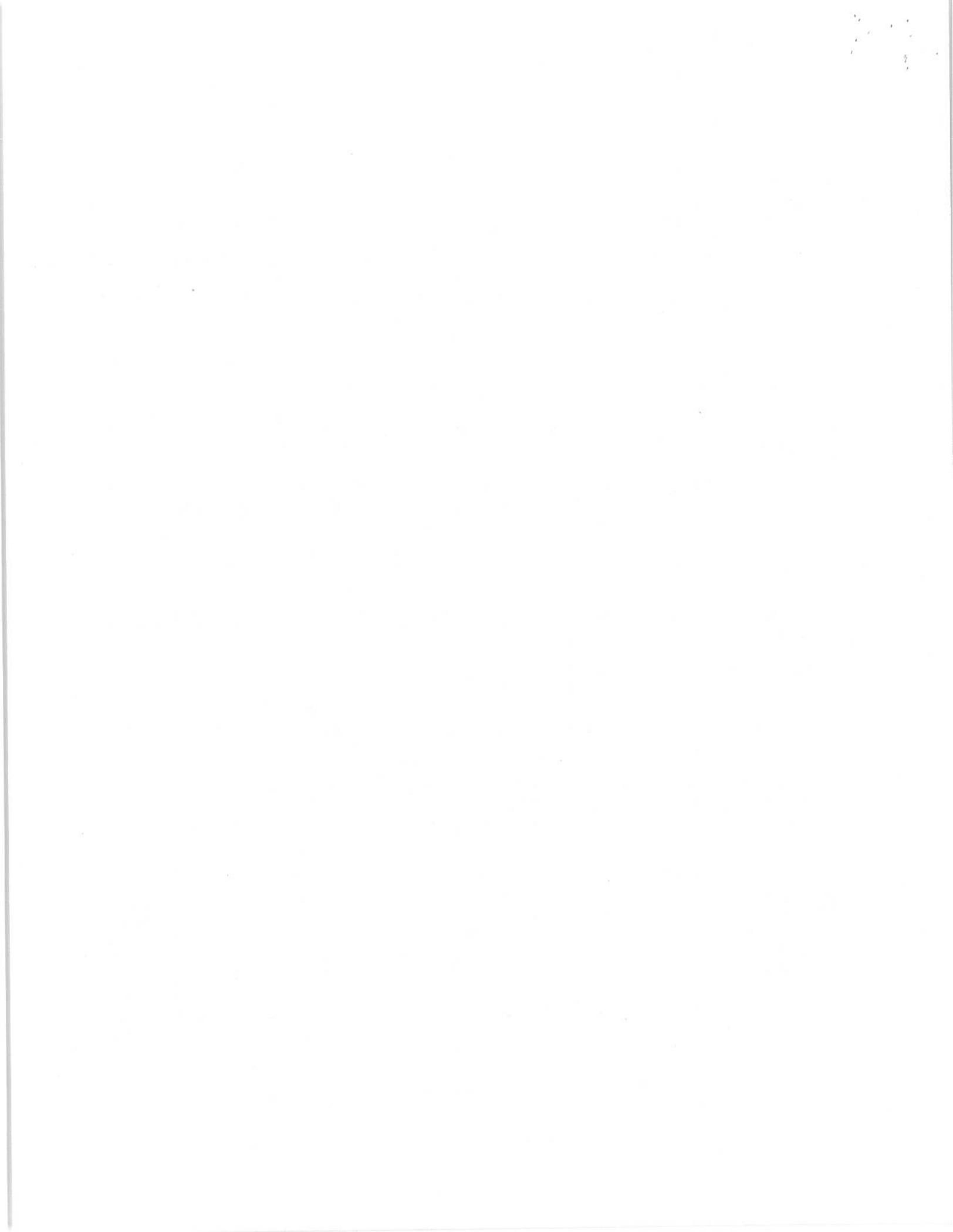
1. Chemicals they used were found in the soil and groundwater
2. According to the facility manger, Julius Blank of Fairchild, in his November 21, 1989 declaration, the site was used for research, development, limited production and wafer inspection and testing from 1957 to 1967.
  - a. In the research activities various methods of lapping, polishing, etching and cleaning fragments were investigated. Some of these processes included the use of acids and solvents, including TCE and various other chemicals.
  - b. Wafer inspection and electronics testing and assembly involved solvents in small quantities for wiping down parts.
  - c. Waste acids and solvents were disposed of through the sinks following neutralization by dilution in a flow-through catch basin below the sinks.
  - d. Mr. Blank had no recollection of leaks or spills. If a spill had occurred the chemical would be wiped up with a cloth or paper, and then discarded.
  - e. Chemical storage was in the back of 844 East Charleston Road and also in 4055 Fabian Way where the machine shop was located (see attached map).
  - f. The machine shop was used for fabrication of equipment, and large quantities of chemicals were used for baths or dipping equipment.
  - g. In mid-1960, Mr. Blank was transfer to the new manufacturing headquarters in Mountain View.
3. There are apparent conflicting statements from Mr. Blank in a letter dated February 21, 1989 and his November 21, 1989 declaration concerning the sump or Acid neutralization system. In the letter he mentions an acid neutralization system and the declaration a flow-through catch basin below the sink and no sump. Since the declaration is based on a site visit we believe



it more accurately reflects conditions at that time.

4. Jeffery Wilson an engineer for Fairchild at 844 East Charleston, from May 1959 to late 1960, was responsible for setting up semiconductor testing and assembly lines and other aspects of plant engineering. Mr Wilson agreed with Julius Blank regarding layout of the facility at that time.
  - a. Wet Chemicals were used in the research and development building and the machine shop.
  - b. He said that wet chemicals were used in the six to eight rooms in the center of the machine shop.
  - c. No recollection of leaks or spills occurred, if a spill occurred the chemical would be wiped up with a cloth or paper, then discarded.
  - d. Electronics instrumentation at the time generally did not involve wet chemicals.
  - e. At the end of 1960 Mr. Wilson was working full time at Mountain View and then San Rafael until 1968.
5. Both Blank and Wilson say the sewer line went directly to East Charleston (front of building), rather than through the sump (back of building).
6. A 1964 Fire Department report noted that Fairchild was using Acetone in the Instrumentation Division.
7. General industry chemical handling practices were poor at that time.
8. There was no significant treatment of waste.
9. A PVC pipe appears to be coming from 4017 Fabian Way used by Fairchild prior to 1960 which was installed in the sump when it was constructed.
10. Elevated levels of pollutants were detected in Monitoring Wells 1, 1b, and 3. These wells are located near the Fairchild old chemical storage and machine shop, and just down gradient of this area.

It is known that Advalloy activities contaminated the groundwater. The question is whether Fairchild Camera and Instrument is also a discharger. The chemical usage while Fairchild occupied the site is some what of a mystery. The only known chemicals and quantities are those given to us in a letter to the City of Palo Alto in November 1957 when Fairchild began its operation. It seems likely that Fairchild's chemical usage would have changed over the ten year period they occupied the site, especially since they were doing research, development, and there were changes in the operation over the years. For instance in the machine shop, which fabricated the equipment for this new industry, wet chemicals were used in this area in amounts needed for baths and dipping. It



appears that it would take larger amounts than indicated in the letter to the City of Palo Alto to operate the machine shop. Another area that might have used larger amounts of chemicals than given to us is for "start-up" production. Finally the Instrumentation Division used solvents in wipe down quantities, however it does not take much of these chemicals to pollute the groundwater. The fact is known that degreasers were used at 844 East Charleston while Fairchild occupied the site, but there remains a question if these amounts and types changed between 1957 to 1967.

Another confusing part of this case is when the sump, the main suspected source of groundwater contamination, was constructed. There are no available records of when it was built. Advalloy claims that the sump was there when they began leasing the property in 1967. On the other hand both Julius Blank and Jeffery Wilson said that they had no recollection of the sump, but they only worked at the site on full time basis until 1960. Fairchild submitted a letter on December 21, 1989 which quotes an employee who was there from 1963 to 1965 and states that there was no sump. Fairchild has not yet provided us with any declarations of an employees from 1965 to 1967.

#### V. SUMMARY

It is known that Fairchild used the chemicals that were found in the soil and groundwater, however it is not known if the chemical practices changed over the ten year period. There is no record of spills or known releases to the environment by Fairchild, but the general industry chemical practices of that time period are known have typically released chemicals to the environment. The latest technical report revealed high levels of contamination in both the upper and intermediate aquifer near Fairchild's chemical storage area and machine shop, which is also near Advalloy's chemical storage area. The final question is whether the sump was there when Fairchild occupied the site since it is known that the sump does leak to the groundwater. There is, however, sufficient evidence to name Advalloy as a discharger both because they released chemicals to the environment and because they are the current landowners of the site.

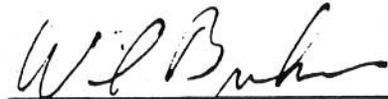
#### VI. RECOMMENDATION

This case is similar to the Lynch Circuits and Siliconix but one major difference is in this case there is no documented discharge to the environment by Fairchild. There does not seem to be a clear picture of Fairchild chemical usage, amount of manufacturing, and when the sump was built. It is known that the chemicals that are found in the soil and groundwater were used by both Advalloy and Fairchild. However, Fairchild should not be named on the order at this time because there does not seem to be any documented discharge to the environment. This position may be changed if



investigations at this site, or at neighboring sites once occupied by Fairchild, discover specific evidence that Fairchild discharged chemicals to the environment.

CONCUR:

  
\_\_\_\_\_  
Wil Bruhns  
Section Leader

  
\_\_\_\_\_  
Steve Morse  
Division Chief

Attachments:

1. Site map
2. Site chronology
3. Building Plan
4. November 21, 1957 letter to Palo Alto



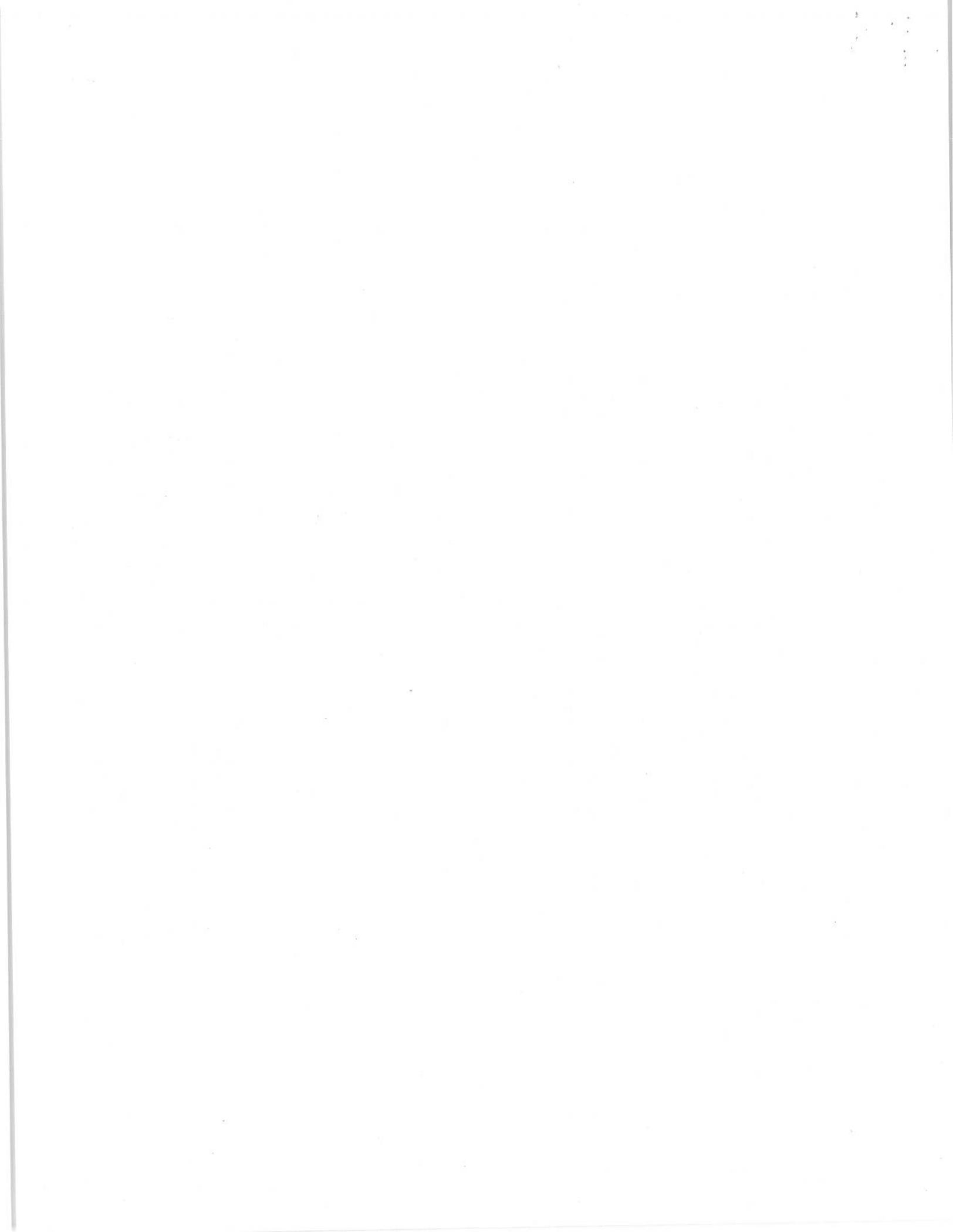
FAIRCHILD 4030	FAIRCHILD 4020
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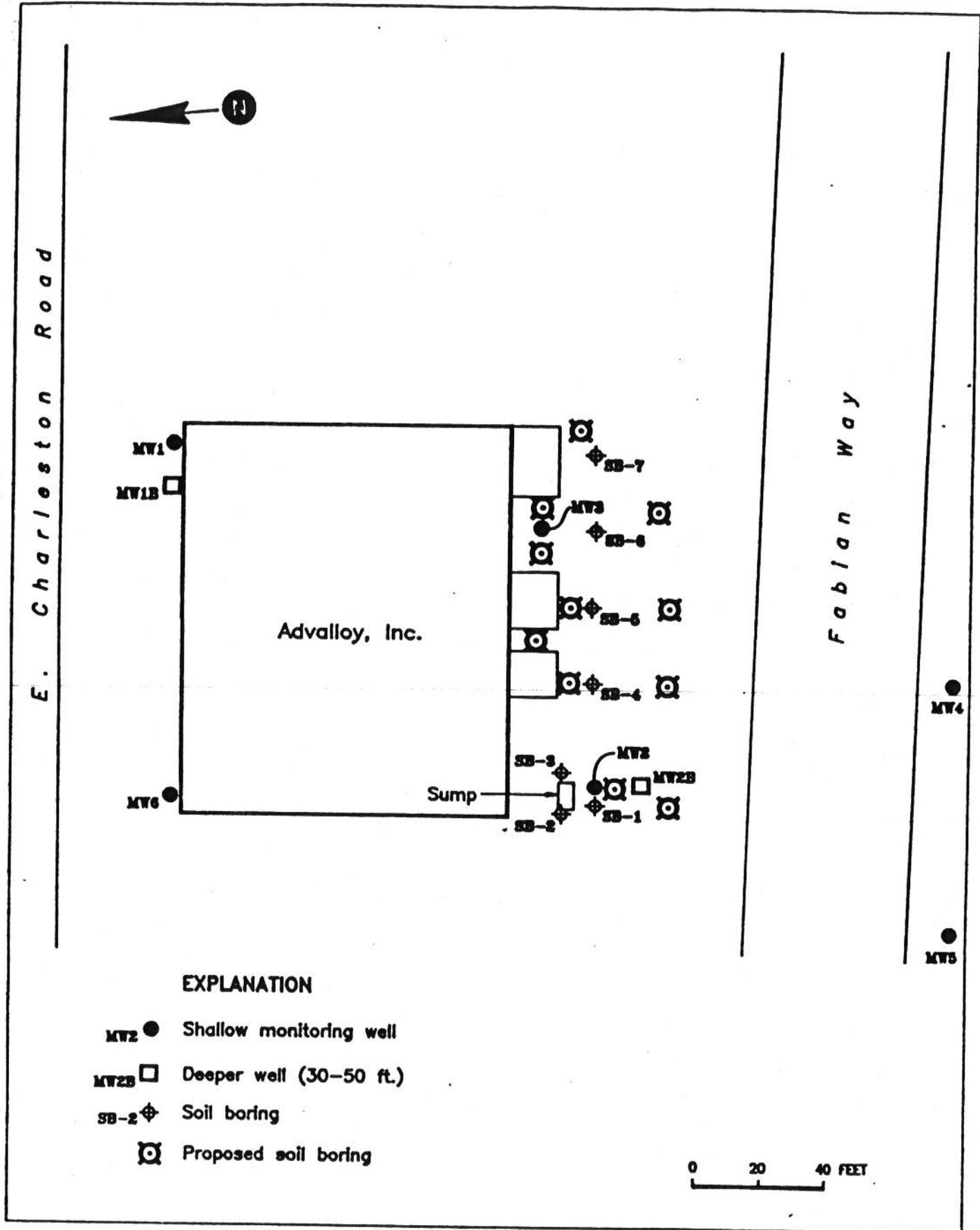
FABIAN WAY

4017 CURRENTLY STANDFORD GLASS BLOWING FAIRCHILD 1957 to 1961	4035 ADVALLOY 1967 to PRESENT FAIRCHILD 1957 to 1967	4055 FAIRCHILD CHEMECAL STORAGE & MACHINE SHOP	4057 FAIRCHILD
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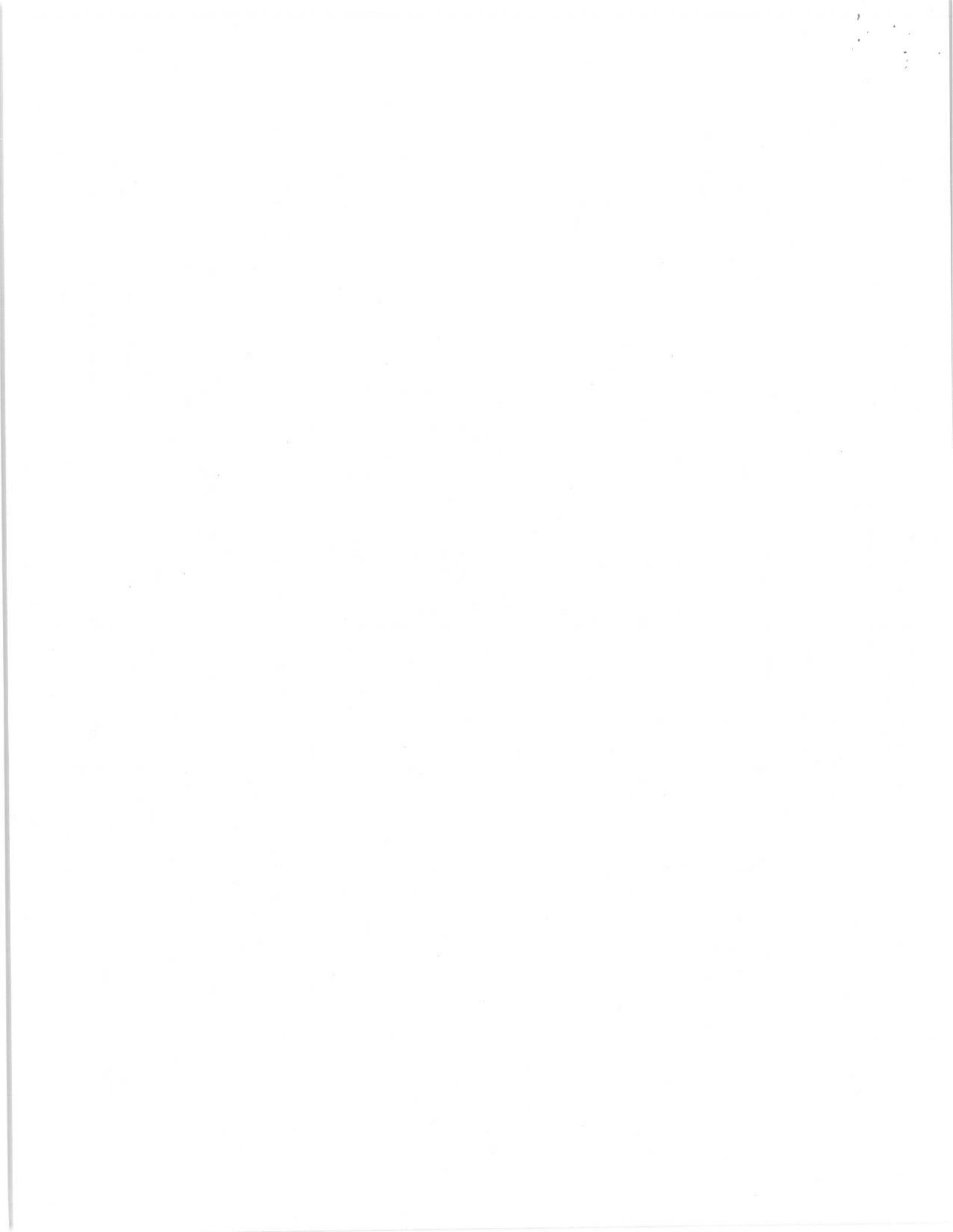
844	
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EAST CHARLESTON ROAD





PROPOSED SOIL BORING LOCATIONS



**ADVALLOY/FAIRCHILD SITE HISTORY**

**TABLE I**

LOCATIONS		4017 FABIAN	4020 FABIAN	4030 FABIAN	4055 FABIAN	4057 FABIAN
TIME PERIOD	844 E. CHARLESTON OR 4035 FABIAN					
1957	SITE CONSTRUCTED FC LEASED 10-15-57 RESEARCH & DEVELOPMENT (R & D) START-UP PRODUCTION & HQ	WAFFER INSPECTION ELECTRONICS TESTING & ASSEMBLY  LEASE EXPIRED	WAFFER INSPECTION ELECTRONICS TESTING & ASSEMBLY	WAFFER INSPECTION ELECTRONICS TESTING & ASSEMBLY	MACHINE SHOP FABRICATION OF EQUIP WET CHEM USED CHEMICAL STORAGE BEHIND & IN BUILDING	
1958	MADE CHANGES FOR BUSINESS OPERATION					
1959						
1960						
MID -1960	MOVE H.Q. TO MOUTIAN VIEW (MV) JULIUS BLANK MOVED TO M.V					
1961	JEFF WILSON MOVED TO MV R&D MOVE TO ANOTHER SITE IN PALO ALTO INSTRUMENTATION DIVISION WHICH ENGAGED IN ASSEMBLY AND TESTING (61-67)					
1962						
1963						
1964	FIRE DEPT VIOLATION FOR HAVING FMMABLE LIQUID (ACETONE, ECT.)					
1965						
1966						
1967	LEASE EXPIRED IN OCT 1967					
1968	ADVALLOY STARTED LEASING					
1969	11-24 FIRE DEPT RESPONDED TO METAL CLEANING SOL. OVER HEATED					
1970						
1971	ADVALLOY BOUGHT PROPERTY					
1972	11-29 FIRE DEPT. RESPONDED TO RELEASE OF TCE FUMES FROM DEGREASER					
1973						
1974	FIRE IN ONE OF THE DIP TANKS CONTAINING TCE					
1975						
1976						
1977						
1978						
1979						
1980						
1981						
1982						
1983						
1984						
1985						
1986	4-26 INDUSTRIAL WASTE INSPECTION FOUND SOLVENTS IN THE SUMP					
1987	ENVIROMENTAL AUDIT DETECTED VOC'S FROM AN UPGRADIENT SITE					
1988	7-5 LETTER FROM THE CITY OF PALO ALTO TELLING ADVALLOY TO STOP DISCHARGING SOLVENTS TO THE SUMP					
	12-28 LETTER FROM THE CITY OF PALO ALTO ORDERING THE ADVALLOY TO SEAL THE SUMP AND ISOLATE THE HAZARDOUS WASTE STORAGE AREA					
Aug-89	TENTATIVE ORDER					
Sep-89	ADVALLOY LETTER SUMMARIZES INFO ON NAMING FAIRCHILD FAIRCHILD LETTER OPPOSING BEING CONSIDER AS A DISCHARGER					
Nov-89	RECEIVED COMMENTS ON TENATIVE ORDER NAMING ADVALLOY AND FAIRCHILD					
Dec-89	RECEIVED COMMENTS ON COMMENTS FROM ADVALLOY AND FAIRCHILD					
Jan-90	BOARD MEETING ON TENTATIVE ORDER					







**FAIRCHILD SEMICONDUCTOR CORPORATION**

844 CHARLESTON ROAD  
PALO ALTO, CALIFORNIA

November 21, 1957

CITY OF PALO ALTO  
**RECEIVED**  
NOV 22 1957

DIVISION OF BUILDING INSPECTION

Building Department  
City of Palo Alto  
1313 Newell Road  
Palo Alto, California

Attention: Mr. Neal Beck

Dear Mr. Beck:

In accordance with our recent discussions, I am enclosing a list of the various acids, chemicals and gases which we intend to use in our leased locations at 855 Fabian Way and 844 Charleston Road.

**Chemicals to be stored at 855 Fabian Way:**

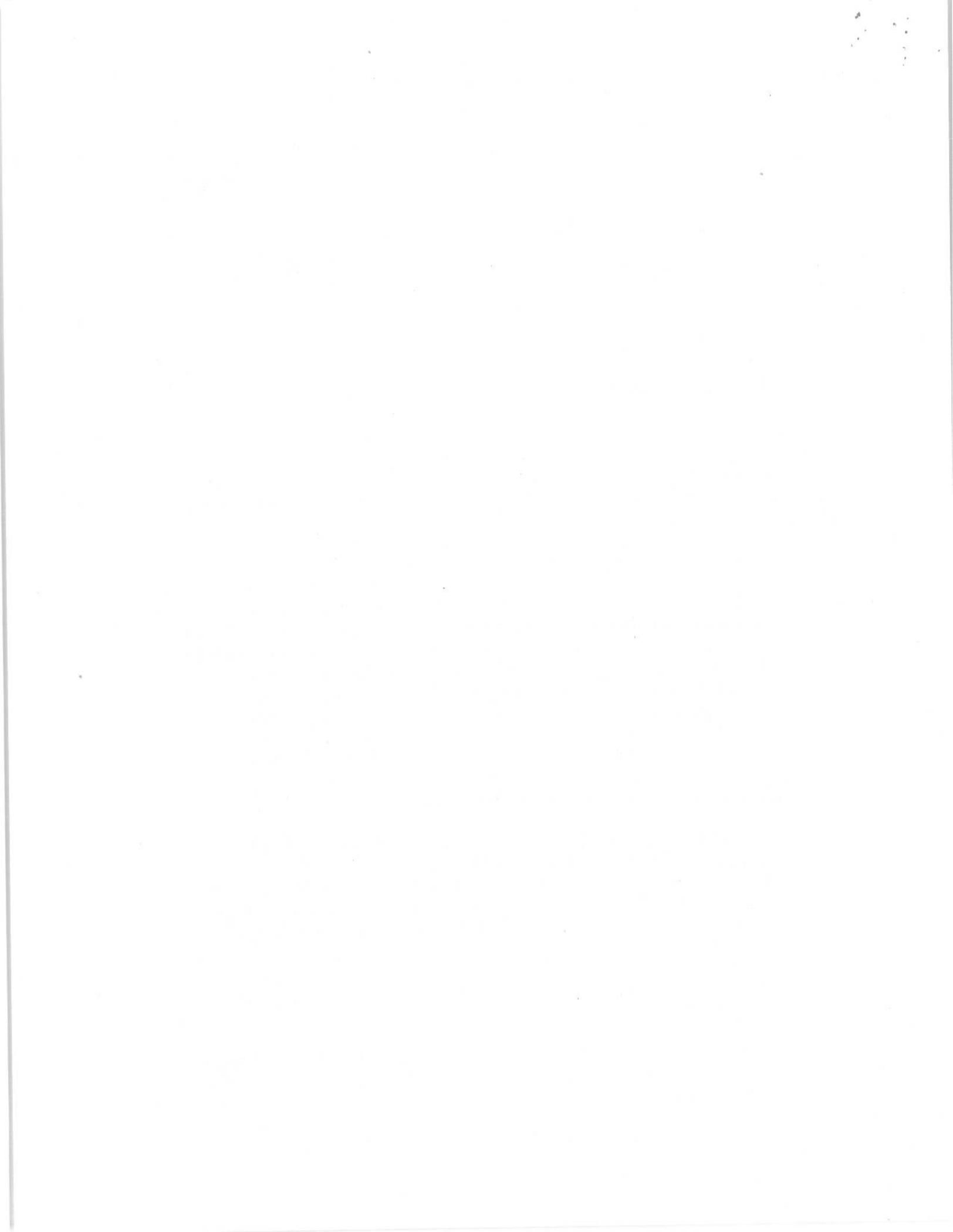
Nitric Acid	2 cases (9 - 7 lb. bottles per case)
Hydrofluoric Acid 48%	2 cases (25 - 1 lb. plastic bottles per case)
	2 cases (4 - 10 lb. plastic bottles per case)
Acetone	3 cases (4 - 6 lb. bottles per case)
Methyl Alcohol	3 cases (4 - 6 lb. bottles per case)
Iso-propyl Alcohol	2 cases (4 - 6 lb. bottles per case)
Trichloroethylene	2 cases (4 - 9 lb. bottles per case)
Carbon Tetrachloride	2 cases (4 - 9 lb. bottles per case)

**Chemicals to be stored at 844 Charleston Road:**

Small laboratory quantities of each of the above inside about six vented fume hoods, approximately one pint of each per hood. In addition there will be similar small quantities of hydrochloric acid, sulphuric acid and acetic acid as well as organic solvents such as benzene, xylene, toluene, trichloroethylene, and carbon tetrachloride.

Gases to be stored on a covered concrete pad in the rear of 844 Charleston Road.

A manifold of four cylinders of each of Hydrogen, Nitrogen, Oxygen and Argon, as well as about four refills of each gas will be stored in an adjacent storage area on the same pad. The pad will also contain an air compressor from



City of Palo Alto

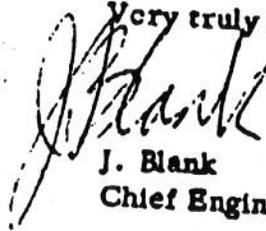
November 21, 1957

which we will pipe compressed air through both buildings. This compressor will probably be a 7 1/2 HP, two-stage, air-cooled, receiver-mounted unit.

We would also like your office to approve a trial installation of polyethylene piping on our sink drains. We understand that your office is collecting data to determine whether or not this material should be approved for general use. We will be glad to cooperate with you in the determination of the efficiency of polyethylene piping.

If you require additional information, please contact us as needed.

Very truly yours,



J. Blank  
Chief Engineer

JB:gb

