November 1, 2018

Attachments to 104(e) Response Letter

Orange County North Basin Study Area, Orange County, California

Ducommun Incorporated

AEROCHEM, INC.
SUBSIDIARY OF DUCOMMUN INCORPORATED
1885 NORTH BATAVIA STREET • ORANGE, CALIFORNIA 92865-4190

MEMORANDUM

TO: BILL LYON

FROM: ROB COWAN

DATE: Dec. 28, 1998

SUBJECT: HAZARDOUS MATERIALS REVIEW AT AEI FULLERTON SITE

At your request, I performed a Hazardous Materials Review at the AEI Fullerton site at 1600 E. Valencia Drive on December 17th. The site is currently occupied by Wilson's Art Studio, DBA Solutions Unlimited. I met with Bill Goetsch, VP Operations.

The facility is a screen printing business and as expected uses many different inks and associated materials, including solvents, water-based cleaners, and developers and fixers. The facility is in the process of obtaining air quality permits from the South Coast Air Quality Management District, and all materials in use comply with the District's Air Quality Rules. This business is active in the Screen Printers Association, which deals with air quality issues. The facility does have an AQMD ID number.

All hazardous wastes are hauled off-site by a licensed waste transporter. The facility holds an EPA ID number. Solutions Unlimited has been requested to file a Hazardous Materials Business Plan with the Fullerton Fire Department, and I have requested a copy when it is available. No chlorinated solvents were in use at the facility. All chemical storage areas were in good condition.

Four underground sumps are present which apparently drain to the industrial sewer. These sumps were not in use, but may present a potential source of soil contamination. The facility does not hold any industrial sewer permits.

The area which was previously occupied by AEI has been renovated and another screen printing company, Graffix 2000, is in the process of starting operations there. A follow-up visit will be needed when this facility is operational.

If you have any questions, please call me.

1600 E. Valencia Dr.
Schedule of Leases and Agreements

Standard Industrial/Commercial Multi-Tenant Lease -- Gross (plus Addendum)
Executed: 9/30/98
Lessor: American Electronics, Inc.
Lessee: Promotional Concepts Technology, Inc., dba Graphic Technologies
Term: 11/1/98-9/30/02 + 5-year option to extend

Consent to Sublease
Executed: 9/30/98
Lessor: American Electronics, Inc.
Lessee: Promotional Concepts Technology, Inc., dba Graphic Technologies
Sublessee: Solutions Unlimited

Consent to Sublease
Executed: 9/30/98
Lessor: American Electronics, Inc.
Lessee: Promotional Concepts Technology, Inc., dba Graphic Technologies
Sublessee: Graphics 2000 LLP

First Amendment to Lease Between American Electronics, Inc., and Promotional Concepts Technology, Inc. dba Graphic Technologies
Executed: 11/12/02
Lessor: American Electronics, Inc.
Lessee: Promotional Concepts Technology, Inc., dba Graphic Technologies
Term: 10/1/02-9/30/07

Standard Industrial/Commercial Multi-Tenant Lease -- Gross (plus Addendum)
Executed: 7/28/97
Lessor: American Electronics, Inc.
Lessee: Wilson's Art Studio, Inc.
Term: 10/1/97-9/30/02 + 5-year option to extend

First Amendment to Lease Between American Electronics, Inc. and Wilson's Art Studio, Inc.
Executed: 9/98
Lessor: American Electronics, Inc.
Lessee: Wilson's Art Studio, Inc.
Additional portion of building leased by Wilson's Art Studio, Inc.

Second Amendment to Lease Between American Electronics, Inc. and Wilson's Art Studio, Inc., dba Solutions Unlimited
Executed: 11/12/02
Lessor: American Electronics, Inc.
Lessee: Wilson's Art Studio, Inc., dba Solutions Unlimited
Term: 10/1/02-9/30/07

Standard Industrial/Commercial Single-Tenant Lease -- Gross
Executed: 5/12/00
Lessor: American Electronics, Inc.
Lessee: National Technical Systems, Inc.
Term: 4/1/00-9/30/02

Collateral Removal Agreement
Executed: 12/27/00
American Electronics, Inc. authorizes Merrill Lynch Business Financial Services, Inc. to remove collateral relating to credit extended to Graphics 2000, LLC.

Collateral Removal Agreement
Executed: 12/27/00
American Electronics, Inc. authorizes Merrill Lynch Business Financial Services, Inc. to remove collateral relating to credit extended to Promotional Concepts Technology, Inc., dba Graphic Technologies.

Phase I Environmental
Site Assessment
1600 E. Valencia Dr.
Fullerton, CA 92631
ATEC Project No. 09041

Prepared for:

American Electronics, Inc.
1600 E. Valencia Dr.
Fullerton, CA 92631

Atten: Dominick Monaco

August 21, 1990

ATEC Associates, Inc.
Corporate Office
8665 Bash Street
Indianapolis, Indiana 46256-1202
[317] 842-4463, FAX # [317] 842-7308

August 21, 1990

Mr. Dominick Monaco
American Electronics, Inc.
1600 E. Valencia Dr.
Fullerton, CA 92631

RE: Phase I Environmental Site Assessment
1600 East Valencia Drive
Fullerton, California 92631
ATEC Project Number 09041

Dear Mr. Monaco:

ATEC Environmental Consultants (ATEC) has completed the above referenced Environmental Site Assessment.

We trust this information is sufficient for your current needs. Please contact us for any clarification of our report or recommendations. ATEC wishes to thank everyone who provided their cooperation and assistance in expediting the completion of this project.

Additional information from the Fullerton Fire Department and Orange County Environmental Health Department regarding underground storage tanks has been requested. If relevant information is acquired, an addendum to this report will be submitted.

Sincerely,

ATEC ENVIRONMENTAL CONSULTANTS

Deborah Nicley for

Janet Holtz
Environmental Scientist
Geoscience Services

Michael Orum for

David Bullock
Department Manager
Industrial Hygiene

DB:JH/lg

09134.rpt

EXECUTIVE SUMMARY

ATEC Environmental Consultants (ATEC) has conducted an Environmental Site Assessment (ESA) of the property known as American Electronics, Inc., located at 1600 East Valencia Drive, Fullerton, County of Orange, California.

The methods used in the assessment consisted of on-site reconnaissance, interviews and regulatory research with federal, state and local agencies, review of historic aerial photographs of the region, and a physical inspection of the subject property and its vicinity. Radon sampling was not in the scope of services for this project. An asbestos survey will be submitted under another cover.

An inspection of the site facility found the property to be generally well-maintained. Hazardous chemical waste is stored properly and disposed of under manifest. However, chemical drum storage inside the facility is not adequate, and spill containment is necessary. Improved employee safety procedures and proper ventilation of the facility also needs to be implemented.

A Regional Water Quality Control Board investigation documented a groundwater contamination problem at the subject site. Three groundwater monitoring wells are located on the property and a fourth monitoring well is to be installed soon. The Regional Board will mandate groundwater remediation procedures, if warranted, after the collection and analyses of sufficient data. No sites in the immediate vicinity of the subject site appear to pose an environmental concern at this time.

Other than the information stated above, ATEC observed no conditions or practices that appear to pose immediate environmental concern to the site.

TABLE OF CONTENTS

LETTER OF TRANSMITTAL

EXECUTIVE SUMMARY iii

1.0 INTRODUCTION 1

2.0 PHYSICAL SITE DESCRIPTION 1
- 2.1 General Site Conditions 2
- 2.2 Tanks 2
  - 2.2.1 Underground Storage Tanks 2
  - 2.2.2 Aboveground Storage Tanks 3
- 2.3 PCBs 3
- 2.4 Asbestos-Containing Material (ACM) 4
- 2.5 Utilities 4
  - 2.5.1 Sewage 4
  - 2.5.2 Water 4
  - 2.5.3 Energy 4
- 2.6 Solid Waste, Hazardous Waste & Materials 4
  - 2.6.1 Containers/Drums 4
  - 2.6.2 Bulk Storage Areas 6
  - 2.6.3 Waste Treatment Areas/Lagoons 7
  - 2.6.4 Maintenance Shops/Machine Storage Areas 7
  - 2.6.5 Open Ditches 7
  - 2.6.6 Stained Areas 7
  - 2.6.7 Vegetative Stress 8
- 2.7 Flood Conditions 8
- 2.8 Seismic Conditions 8

3.0 ADJACENT LAND USE 9

4.0 SITE HISTORY AND RECORDS REVIEW 9
- 4.1 Prior Ownership and Usage 9
- 4.2 Aerial Photography 9
- 4.3 Regulatory Review 10
  - 4.3.1 Federal 10
  - 4.3.2 State 10
  - 4.3.3 Local/Agency 12

5.0 CONCLUSIONS AND RECOMMENDATIONS 13
- 5.1 Conclusion 13
- 5.2 Recommendations 14

6.0 QUALIFICATIONS 15

APPENDICES
- APPENDIX A: FIGURES
- APPENDIX B: PHOTOGRAPHIC DOCUMENTATION
- APPENDIX C: CONTACTS AND REFERENCES

1.0 INTRODUCTION

ATEC Environmental Consultants (ATEC) was retained by Mr. Michael Dever on July 25, 1990, to conduct an Environmental Site Assessment (ESA) of a manufacturing firm known as American Electronics, Inc. (AEI). This property is located at 1600 East Valencia Drive, Fullerton, in the County of Orange, California (Figure 1). A work order was issued to ATEC - Irvine by Mr. Dever on July 25, 1990.

The purpose of this study was to evaluate the site in regard to environmental issues associated with past and/or present operations at the site or neighboring properties which might pose liability for the owners or lenders. Radon sampling was not conducted as part of the assessment. An asbestos survey and sampling program is being covered in a separate report.

ATEC personnel performed a guided site inspection of the property on August 1, 1990 to identify obvious potential contamination sources. Mr. Dominic Monaco, Vice President, gave ATEC personnel authority to tour the facility and answered questions regarding the two-story building. Regulatory documents were reviewed and regulatory personnel were interviewed concerning activities at the site and in the general vicinity. Aerial photographs of the vicinity of the subject site were also examined.

2.0 PHYSICAL SITE DESCRIPTION

This section will describe the site features as observed by David Bullock, Department Manager of Industrial Hygiene, and Janet Holtz, Environmental Scientist, on August 1, 1990. Other features were determined from a review of topographic maps and pertinent public documents.

The site is bordered to the north by Valencia Drive and the Atchison-Topeka and Santa Fe railroad tracks, to the east by AETL Testing Lab, to the south by Yokohama Tires, and to the west by Acacia Avenue and Khyber, Inc. Overall, a 1000 foot radius of the subject site is characterized by predominantly manufacturing and warehousing facilities, research and development complexes, and open land and railroad tracks. The site is located approximately one mile north of the Riverside Freeway (91) and five miles south of the Imperial Highway (90). The nearest cross streets are Acacia Avenue to the east and Raymond Avenue to the west, with Valencia Drive running perpendicular east/west (Figure 1).

2.1 General Site Conditions

The site is roughly L-shaped and the single, 2-story building comprises approximately 100,000 square feet (Figure 2). The site is graded flat. The property is zoned MP100-Industrial Park, as defined by the City of Fullerton Planning Department.

The site is fully developed. The property consists of one building constructed in 1960. The tenant and principal owner of the property since 1960 has been American Electronics, Inc. The front and rear portions of the site are uncovered parking areas. The front parking lot was repaved with new asphalt on the day of the site visit. The asphalt in the rear parking areas is badly cracked and is also in need of repaving. The entrance to the building is landscaped with plants and large trees. Dumpsters are located in the rear parking lot and disposed of by MG Disposal, Fullerton, CA.

According to the Orange County Water District-Groundwater Contour Map, depth to groundwater at the subject site is approximately 130 feet and the regional flow direction is southwest. However, various agencies and consultants differ in their assessment of site specific groundwater flow direction for the area. The Regional Water Quality Control Board (RWQCB) maintains that several documented sites in the area have a northwest flow direction. Mr. Ray Lewis of Ray Lewis Engineering, Laguna Beach, CA reports that his firm is employing electrostatic sounding of three on-site monitoring wells in order to determine exact groundwater flow direction beneath AEI. Mr. Lewis states this information will be available on or around August 17, 1990.

2.2 Tanks

2.2.1 Underground Storage Tanks

One underground tank exists under the parking lot on the south side of the subject site. It was installed in the late 1970's to fuel company vehicles. The tank is permitted with the Orange County Health Care Agency, #1188-1, and the permit is valid until September 6, 1994. The tank and the pump are also permitted with the South Coast Air Quality Monitoring District (#M84912) and the permit is valid until July, 1991. According to Mr. Monaco, the tank's capacity is approximately 7500 gallons and is constructed of fiberglass. It is integrity-tested yearly and is also metered and checked via inventory

reconciliation. Mr. Monaco stated that there has been soil testing conducted around the perimeter of the tank to check for leakage. Results of the tests were not made available at the time of the site visit. (see Photo 5).

2.2.2 Aboveground Storage Tanks

One aboveground 250-gallon storage tank containing propane was observed on-site. The tank was mounted on a concrete pad in the south parking lot and showed no signs of leakage. It is used to refill propane-fueled forklifts on-site. (see Photo 5).

2.3 PCBs

One pad-mounted Edison-maintained transformer (KVA 1500) is located on the west property line of the subject site but is legally owned by the adjacent AETL Testing Lab (AETL). The subject site and AETL both draw power from the transformer for their respective facilities. Visual observation of the transformer showed leakage and staining on the east side of the transformer on the concrete pad below. (see Photo 3). In conversation with Mr. Brad Martin, Fullerton Area Manager for Southern California Edison, he stated that no transformers in the Fullerton area contain polychlorinated biphenyls (PCBs). Transformer inspection and replacement of PCB-contaminated dielectric fluid was completed in 1987. An Edison representative inspected the leaking transformer on the AETL property on August 3, 1990 and did not report a problem.

Three pole-mounted transformers are located in the south parking lot. However, according to Mr. Wall, they are not in use and have not been used for at least the past fifteen years. They are maintained for emergency back-up. (see Photo 4). Sampling of the units would be necessary in order to determine the PCB content of the transformers.

Ten dry transformers (110 volts) are located inside the building and three dry transformers (750 KVA) are located in the electrical room at the rear (southside) of the building. As dry transformers do not contain dielectric fluid, PCB contamination is not a concern.

A listing of all potential PCB-containing shop equipment was not included in the scope of work of this investigation. However, it was noted that the degreasing equipment used in the facility may also contain PCBs.

2.4 Asbestos-Containing Materials (ACMs)

An asbestos survey and sampling program will be performed and the analysis and recommendations will be submitted under separate cover.

2.5 Utilities

2.5.1 Sewage

The facility is serviced by the municipal sewer system and does not hold any special waste discharge permits.

2.5.2 Water

The water supplied to this site is administered by the City of Fullerton.

2.5.3 Energy

The electricity used at the site is supplied by The Southern California Edison Company, and the natural gas is supplied by Southern California Gas Company.

2.6 Solid Waste, Hazardous Waste & Materials

2.6.1 Containers/Drums

The building is divided into separate divisions, each division utilizing different chemicals throughout the facility. Over 700 Material Safety Data Sheets (MSDS) for chemicals are kept on file at AEI, and each division maintains copies of MSDSs that are currently in use. A review of specific container and drum storage observed, with comments, is presented below.

1. Five 40-gallon containers of "urethane foam resin" and four 40-gallon containers of "polymeric isocyanate" used in mold making are improperly stored on the floor without spill containment. (see Photo 9).

2. Small (less than one gallon) quantities of flammable materials are stored in a non-flammable cabinet in a storeroom.

3. The spray paint booth area contains stored quantities of methyl ethyl ketone (MEK), industrial finish containing phosphoric acid and toluene, and 1,1,1-trichloroethane. All the chemicals observed were stored above the floor but no spill containment was present. (see Photo 8).

4. The storage room for paints and enamels contained 34 five-gallon cans of enamel finish (see Photo 11). None of the paints were stored on pallets as advised by the Fire Code.

5. The alodine plating room stores and uses containers of perchlorethylene, phosphate, sodium metasilicate, sodium hydroxide, chromic acid, and nitric acid. A more in-depth investigation is required to determine the compatibility of these chemicals in close storage. (see Photo 7).

6. The second floor utilizes two rooms for film processing that store developing chemicals in flammable cabinets. The cabinets should be constructed of non-flammable materials.

7. Outdoor shelves on the south side of the property contain paints, thinners, adhesives, etc. These compounds also need to be stored in a non-flammable cabinet.

8. Approximately forty 55-gallon drums of various chemicals are stored in a fenced area at the south end of the property. A portion of the drums are elevated, and the rest are stored directly on the concrete. All the drums need to be elevated and/or stored on pallets. (see Photo 12).

9. Fourteen 55-gallon drums of hazardous waste are stored in a covered enclosure with a locked gate (see Photo 12). The waste is stored properly, however a curbed gutter for spill containment should be installed. The waste is disposed under manifest and the disposer is Rho-Chem, based in Inglewood, CA. (E.P.A.# CAD008364432). A review of manifests at AEI indicates the following wastes are disposed of: stoddard solvents, PCE, MEK, acetone, TCE, freon, thinner, oil, paint, varnish, kerosene, IPA, etc.

2.6.2 Bulk Storage Areas

A tour of the interior of the facility noted various bulk storage rooms and areas. The majority of storage areas, such as calibration instrumentation rooms, engineering labs, paper packaging storage, fabricated metal products storage were clean and orderly. A review of several bulk storage areas, with comments, is presented below.

1. Two separate areas of the facility stored banks of up to 48 charged batteries. The batteries contain lead and cadmium and should have spill containment located underneath them.

2. Bulk storage of general refuse is in the two dumpsters on the south end of the property. No problems were associated with the dumpsters.

3. Scrap metal is stored in a shed at the southeast corner of the property. A metals hauler, Leviton, disposes of the scrap metal on an as-needed basis.

2.6.3 Waste Treatment Areas/Lagoons

There were no lagoons or solid waste treatment areas observed on site.

2.6.4 Maintenance Shops/Machine Storage Areas

A maintenance shop is located at the rear of the building. Pressurized gas canisters are stored here behind chain ropes. Various abandoned pieces of equipment were stored along the rear of the building. Housekeeping practices should be enacted to remove unneeded items. Three propane-fueled forklifts are maintained on-site, as well as several manual-powered ones.

2.6.5 Open Ditches

In the southeast corner of the property a concrete-lined 4x5x3 foot "sump" exists. At present, it is completely enclosed and a 6-inch diameter outlet pipe drains into it. Mr. Monaco stated that he had no knowledge of the uses for the pipe or the contents that could drain through it, or if the recessed enclosure drained to the ground or sewer at one time. A monitoring well is located approximately six feet to the north of the sump and it is this well that has shown groundwater contamination. (see Photo 6). At a later date, Mr. Monaco stated that the outlet pipe was used to channel runoff from the scrap metal storage area.

2.6.6 Stained Areas

Other than the previously mentioned transformer, no stained areas were observed on site.

2.6.7 Vegetative Stress

The vegetation bordering the site on Valencia Drive consists of ornamental landscaping and tall trees. The vegetation appeared healthy and showed no signs of stress.

2.7 Flood Conditions

According to the Fullerton Engineering Department - Flood Insurance Map, the subject site is situated on a 500 year floodplain. The state does not require insurance on a structure located in a Zone X (formerly B), which is the designation for a 500 year floodplain.

2.8 Seismic Conditions

The project site, like all of Southern California, lies within a seismically active zone. Future movement of faults in close proximity to the site may generate ground motion within the project area. The potential for future movements of faults is assessed by the California Division of Mines and Geology Special Publication 42 (revised 1988). It defines an active fault as one which has had surface displacement within Holocene time (last 11,000 years). A potentially active fault is one whose surface displacement has occurred in Quaternary time (last 2 million years). The following is a list of the closest traces of the active and potentially active faults within a radius of 20 miles, whose future movement may affect the site:

Fault System	Miles & Direction from Site		Activity*
Whittier	NE	3.5	A
Raymond	NW	20	A
Newport/Inglewood	SW	15	A
Sierra Madre	N	18	A
Coyoto Hills	W	5	PA
Pelican Hill	S	17	PA
El Modeno	SE	11	PA

* A - Active Fault (Holocene)
* PA - Potentially Active Fault (Quaternary)

3.0 ADJACENT LAND USE

Manufacturing facilities, warehouse and distribution centers, and vacant land surround the subject site.

According to Mr. John Jepson of the Division of Oil and Gas, there are no known active or inactive oil fields, exploratory wells, or current drilling operations in the one-mile vicinity of the subject site.

4.0 SITE HISTORY AND RECORDS REVIEW

4.1 Prior Ownership and Usage

A chain-of-title was not provided by American Electronics. According to records in Mr. Monaco's possession, the property was originally in agricultural production, specifically citrus groves. American Electronics, Inc. initially purchased a vacant 20-acre parcel that included the subject site in March, 1955. AEI sold the property to Investors Industrial Properties, Inc. in May 1960. AEI repurchased the property in 1979, and has owned only the present 5.83 acres since then.

4.2 Aerial Photography

Based on a survey of the Fairchild Aerial Photography Collection (1927-1947), the site and surrounding area were originally used for agricultural production, mainly citrus groves (file report).

Photos dating from 1966-1986 were researched at Aerial Map Industries in Santa Ana, California. The subject site development for those years is identical to the development today. The surrounding areas show an increase in commercial development, and residential areas occupy land further north and west. No tanks or wells were observed in the surrounding area.

4.3 Regulatory Review

4.3.1 Federal

The National Priorities List dated February 1990 (provided by the U.S. Environmental Protection Agency) was researched and no properties within a one-mile radius of the site are listed.

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) "Site/Event Listing" dated August 15, 1990 (provided by the U.S. EPA Superfund Program), was researched and five sites were listed within a one-mile radius of the subject site. None of the listed sites are hydraulically upgradient from the subject site, therefore, they do not appear to be cause for environmental concern.

The Resource Conservation and Recovery Act (RCRA) list of hazardous waste generators dated March 2, 1990 lists forty (40) generators in the one-mile vicinity of the subject site. American Electronics was not listed, however, Mr. Monaco states the company is a small quantity generator. American Electronics' Environmental Protection Agency (EPA) identification number is CAD981390909, which is used on manifests for hazardous waste disposal.

4.3.2 State

The Leaking Underground Storage Tanks (LUGT) list - Region 8, dated April 1990, of the California Regional Water Quality Control Board (RWQCB) lists the subject site, American Electronics, Inc., as a site with a documented soil and groundwater contamination problem.

According to Mr. Carl Bernhardt, RWQCB inspector for the American Electronics site, the soil and groundwater has trichlorethane (TCE) at levels above the state action safe drinking water level of 5 parts per billion (ppb). The soil analysis showed 150 ppb TCE and the groundwater analysis showed 1500 ppb TCE. Three (3) groundwater monitoring wells were installed on the property, and a fourth monitoring well is planned for the southeast corner of the property as soon as RWQCB approval is obtained.

The present status of the subject site is RWQCB designated "5C -Pollution Characterization". The RWQCB is still trying to ascertain the vertical and lateral extent of the contaminant plume. The RWQCB believes the subject site to be a contributor to an overall low-level (10 - 20 ppb TCE) groundwater pollution problem in the area. According to Mr. Bernhardt, at one time a chemical storage area was located next to a sump on the southwest corner of the site. The RWQCB believes that chemical waste was disposed directly down this sump as contaminant levels of TCE in soil and groundwater are highest in this area. Mr. Monaco states that this area was never used for chemical waste disposal.

The LUGT list also lists fifteen (15) other sites within a one-mile radius of the subject site that have documented tank leaks. Due to their distance and location hydraulically downgradient from the subject site none appear to be cause for environmental concern at this time.

The Expenditure Plan for the Hazardous Substances Cleanup Bond Act of 1984, revised in January 1989, was researched and no sites within a one-mile radius of the subject site were listed.

The Toxic Pits Cleanup Act list of 3/29/90 (provided by the State of California Water Resources Control Board, Division of Water Quality) was researched and no properties within a one-mile radius of the subject site are listed.

The lists of Active, Inactive and Closed Landfills provided by the California Integrated Waste Management Board, dated February 2, 1990, were researched and no landfills within a one-mile radius of the site are listed.

The Hazardous Waste and Substances Sites List/Cortese (provided by the State of California Office of Planning and Research) dated May 1, 1989 was researched and eight (8) sites within a one-mile radius of the subject site were listed. All eight sites were also listed on the LUGT list and no additional information was given.

The Transfer, Storage and Disposal Facilities (TSD) Listing for California, a listing of facilities which store, and/or dispose, and/or transfer hazardous waste, is compiled by the EPA and was dated March 23, 1990. This list was researched and only the following downgradient site was listed in the one-mile vicinity of the subject site:

- Johnson Controls Globe Battery Division 1550 East Kimberely Avenue.

No additional information was given.

In summary, the subject site has a documented groundwater contamination problem. The RWQCB is the lead agency in charge of pollution characterization and eventual remediation for the site. At present, the consultant for AEI is determining groundwater flow direction to ascertain whether on-site contamination may have been caused by off-site sources. However, by employing a southwest regional flow direction no sites listed on the researched regulatory lists are upgradient and/or close enough to cause additional environmental concern at this time.

4.3.3 Local/Agency

The following interviews were conducted either in person, by telephone, or via correspondence:

According to records at the South Coast Air Quality Monitoring District (SCAQMD), the subject site has permits valid until August 1991 for emissions from the following equipment: 3 baking ovens, 3 spray booths for paints and solvents, 3 degreasers utilizing perchloroethylene and 1,1,1 trichloroethane, 1 dip tank, and 1 gasoline storage tank.

According to Mr. Satish Gulati of the California Department of Health Services (CaDHS) there is no file for the subject site listed in their database.

According to Inspector Julie Kunze of the Fullerton Fire Department Fire Prevention Section there is a record of an underground gasoline storage tank on the property. Further file information on the subject site has been requested; however, as of this date no information has been received. If relevant information exists in the file it will be sent as an addendum to this report.

According to Ms. Jean Marie Legacy at the Orange County - Environmental Health Department there is a file on the subject site. The existence of the file denotes the presence of underground tanks on the property. A request for the file has been made, however, as of this date no information has been received. If relevant information that may impact the site is submitted to ATEC, it will be sent as an addendum to this report.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

A physical site inspection of the American Electronics site found the facility to be generally clean and orderly. Improper storage of chemical compounds was noted in some areas of the facility, as well as a lack of spill containment for numerous stored liquids.

The AEI site is under orders from the RWQCB to characterize the groundwater contaminant plume believed to exist under the subject site. The consultant for AEI has installed groundwater monitoring wells on the facility property. Groundwater remediation may be required in the future.

5.2 Recommendations

ATEC recommends the following for the AEI facility:

- Better housekeeping practices throughout the facility.
- Proper hazardous material drum storage inside the facility.
- Chemicals should be stored off the floor with adequate spill containment.
- Continued monitoring of groundwater to assess water quality beneath the subject site, and Phase II work as mandated by the RWQCB.

6.0 QUALIFICATIONS

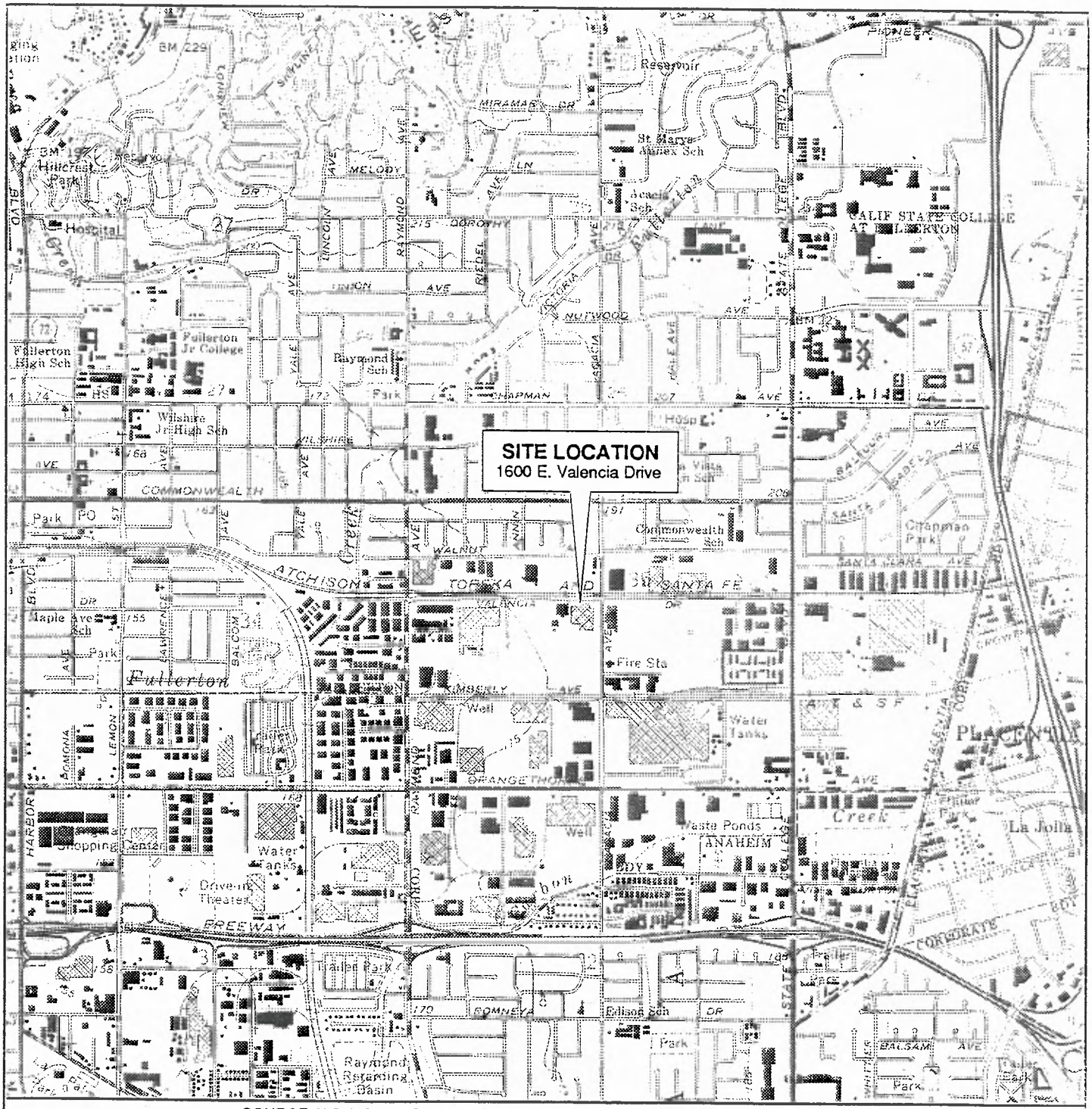
It should be noted that all surficial environmental assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Subsurface conditions were not field investigated as part of this study and may differ from the conditions implied by the surficial observations. Additionally, the passage of time may result in a change in the environmental characteristics at this site and surrounding properties.

It must be noted that no investigation can absolutely rule out the existence of any hazardous materials at a given site. This assessment has been based upon prior site history and observable conditions and activities. Existing hazardous materials and contaminants can escape detection using these methods.

The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and location given. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

APPENDIX A

FIGURES



SOURCE: U.S.G.S. 7.5' Topographic Maps, Anaheim & La Habra, CA, Photorevised 1981

SCALE 1 : 24000

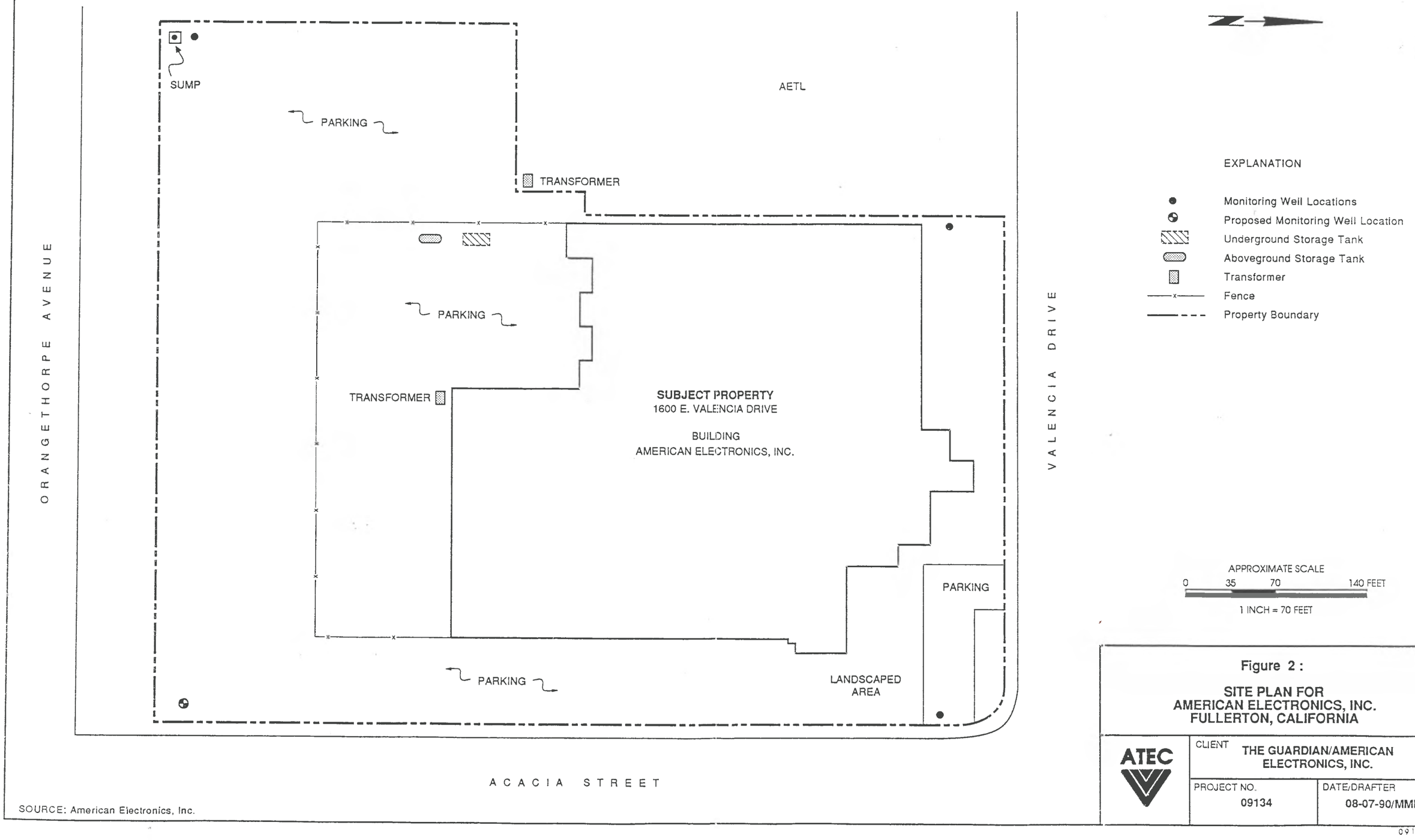
1/2 0 1/2 0 MILE

2000 1000 0 2000 4000 FEET

CONTOUR INTERVAL 5 & 20 FEET

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS INC.		ATEC	Figure 1: SITE VICINITY FULLERTON, CALIFORNIA
PROJECT NO. 09134	DATE 08/06/90		

080690 M.Keenan



SOURCE: American Electronics, Inc.

Figure 2 :

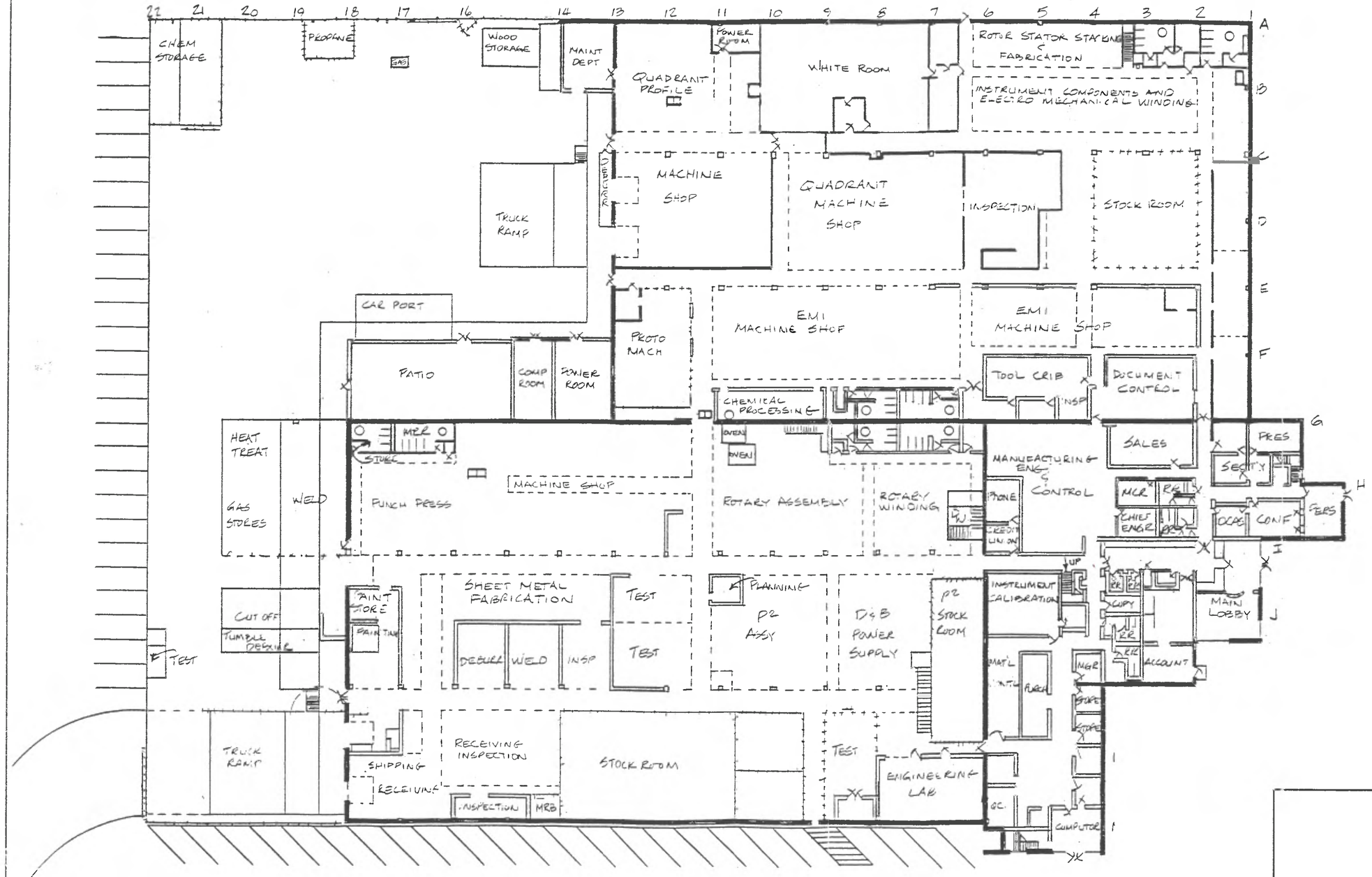
SITE PLAN FOR
AMERICAN ELECTRONICS, INC.
FULLERTON, CALIFORNIA

ATEC

CLIENT: THE GUARDIAN/AMERICAN ELECTRONICS, INC.

PROJECT NO.	DATE/DRAFTER
09134	08-07-90/MMK

09134-02



SCALE PROPORTIONAL

SOURCE: American Electronics, Inc.

Figure 3 :

SITE PLAN SHOWING THE FACILITY LAYOUT FULLERTON, CALIFORNIA

ATEC

CLIENT: THE GUARDIAN/AMERICAN ELECTRONICS, INC.

PROJECT NO.: 09134

DATE/DRAFTER: 08-06-90/MMK

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION

PHOTO 1: VIEW OF AMERICAN ELECTONICS, INC. FRONTING VALENCIA DRIVE, LOOKING SOUTH.

PHOTO 2: VIEW OF INTERIOR OF AMERICAN ELECTRONICS, INC. FACILITY.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 1: Photos 1 & 2
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 3: VIEW OF LEAKY TRANSFORMER.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 2: Photo 3
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 4: VIEW OF THREE POLE-MOUNTED TRANSFORMERS IN REAR PARKING LOT.

PHOTO 5: VIEW OF ABOVEGROUND PROPANE TANK (FOREGROUND), AND UNDERGROUND GASOLINE TANK AND PUMP (BACKGROUND).

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 3: Photos 4 & 5
PROJECT NO.	DATE		
09134	08/07/90		

080790/M.Keenan

PHOTO 6: VIEW OF MONITORING WELL AND "SUMP" ON SOUTHEAST CORNER OF PROPERTY.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 4: Photo 6
PROJECT NO.	DATE		
09134	08/07/90		

080790/M.Keenan

PHOTO 7: VIEW OF ALODINE PLATING ROOM; NOTE EXHAUST HOOD AT FAR END.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 5: Photo 7
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 8: VIEW OF PAINT SPRAY BOOTH WITH FILTER SCREENS.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 6: Photo 8
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 9: VIEW OF HAZARDOUS CHEMICALS USED IN MOLD-MAKING STORED ON FLOOR.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 7: Photo 9
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 10: VIEW OF TYPICAL EXHAUST HOOD; NOTE PERMIT ON RIGHT SIDE.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 8: Photo 10
PROJECT NO.	DATE		
09134	08/07/90		

080790/M.Keenan

PHOTO 11: VIEW OF PAINT STORAGE ROOM.

PHOTO 12: VIEW OF CHEMICAL (RIGHT) AND HAZARDOUS WASTE (LEFT) STORAGE ON SOUTH END OF PROPERTY.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 9: Photos 11 & 12
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

APPENDIX C

CONTACTS AND REFERENCES

APPENDIX C
CONTACTS AND REFERENCES

Documents:

- National Priorities List, February 1990; by the U.S. EPA Region IX.
- CERCLIS Site/Event Listing, August 5, 1989; by the U.S. EPA Superfund Program.
- Hazardous Waste and/or Substance Sites List, January, 1989; by the State of California Office of Planning and Research.
- Expenditure Plan for the Hazardous Substances Bond Act of 1984, revised in 1989; by the Department of Health Services Toxic Substances Control Division.
- Toxic Pits Cleanup Act List, November 18, 1989; by the State of California State Water Resources Control Board Division of Water Quality.
- Lists of Active, Inactive and Closed Landfills, February 2, 1990; by the California Integrated Waste Management Board.
- Santa Ana Regional Water Quality Control Board Underground Storage Tank List Database, April 9, 1990; Regional Water Quality Control Board.
- Transfer, Storage, and Disposal Facilities Listing for California, March 23, 1990; U. S. EPA.
- Resource Conservation and Recovery Act List, March 2, 1990, by the U.S. EPA.
- Must for USTs, Office of Underground Storage Tanks, U.S. EPA, September 1988.

Maps:

- Thomas Guide, Los Angeles and Orange County, p.6, 1988.
- Fault Map of California, Compiled by Charles Jennings, Division of Mines and Geology, 1988.
- USGS Anaheim Quadrangle, Orange County, photorevised 1981.
- Groundwater Contour Map, Orange County Water District, November 1, 1989.

APPENDIX C (continued)

- Fairchild Aerial Photographic Collection, Geology Department, Whittier College, Whittier, CA.

  Dates Flown: 1927-1947

- Aerial Map Industries, 2012 South Main Street, Santa Ana, CA.

  Dates Flown: 1966-1986

Telephone Communications:

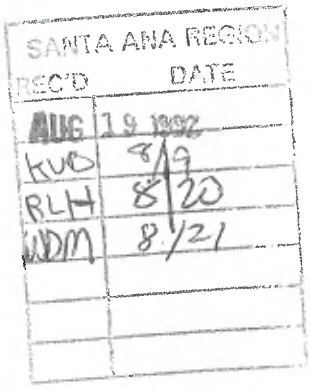
- Jean-Marie Legacy, Orange County Environmental Health Department, Santa Ana, CA.
- John Jepson, Division of Oil and Gas, Long Beach, CA.
- Satish Gulati, California Department of Health Services, Burbank, CA.
- Julie Kunze, Fullerton Fire Department - Fire Prevention Section, Fullerton, CA.

Interviews On-Site:

- Dominick Monaco, American Electronics, Inc., Fullerton, CA.
- Don Wall, American Electronics, Inc., Fullerton, CA.
- Valdmir Konovalov, American Electronics, Inc., Fullerton, CA.

AMERICAN ELECTRONICS INCORPORATED
1600 E VALENCIA DR. FULLERTON, CA
FACILITY LAYOUT

AEI®
AMERICAN ELECTRONICS, INC.
1600 E. Valencia Drive, Fullerton, Calif. 92631-4735
Phone (714)871-3020 Fax (714)871-1403



August 18, 1992

Mr. Dennis L. Merklin
California Regional Water
Quality Control Board
Santa Ana Region
2010 Iowa Ave., Suite 100
Riverside, CA 92507-2409

Dear Mr. Merklin:

After returning to the plant following our conference at your office, I attempted to find exactly what work had been accomplished over the years in the southwest corner of American Electronics, Inc.'s property.

I ascertained that in 1979 we acquired title to both the land and building which we occupied, from our former landlord; that in March, 1981, after observing deterioration of the asphalt in the extreme southwest storage area, we contracted with the G. Horton Construction Company both for excavation and construction of a concrete slab in that area. Our blueprint No. F0003 outlining the exact nature of the construction done is enclosed for your information. In discussions with retired and current employees, we determined that no record existed that would exactly pinpoint the depth of excavation, but we have been informed by them that contaminated soil and removed asphalt were taken from the site, and following their directions, we have inferred from measurements of the placement of the drainpipe that an approximate three to four foot depth was reached (see redlined sketch on F0003 drawing.

A copy of an invoice dated March 25, 1981, for work done under our P.O. No. 76749 dated February 25, 1981, is enclosed for your information.

After the concrete slab had been constructed we contracted with Century Paving Inc. to do certain paving and repair of the asphalt paving surrounding our plant. Copies of invoices covering this work are enclosed. I have been informed verbally that the work done in the immediate vicinity of the concrete

slab, in an area shown in the upper left-hand corner of the enclosed sketch, and measuring 84 ft. by 121 ft., consisted of placing a cap over existing asphalt only, with no excavation being done. The rest of the work consisted of renovating existing asphalt and striping.

Our records disclosed that in April of 1988, Shook Building Systems Inc. constructed a building over the pad which had been built in 1981. Job No. 87-479 drawings depicting the work accomplished are enclosed.

Should you have any questions, please contact me.

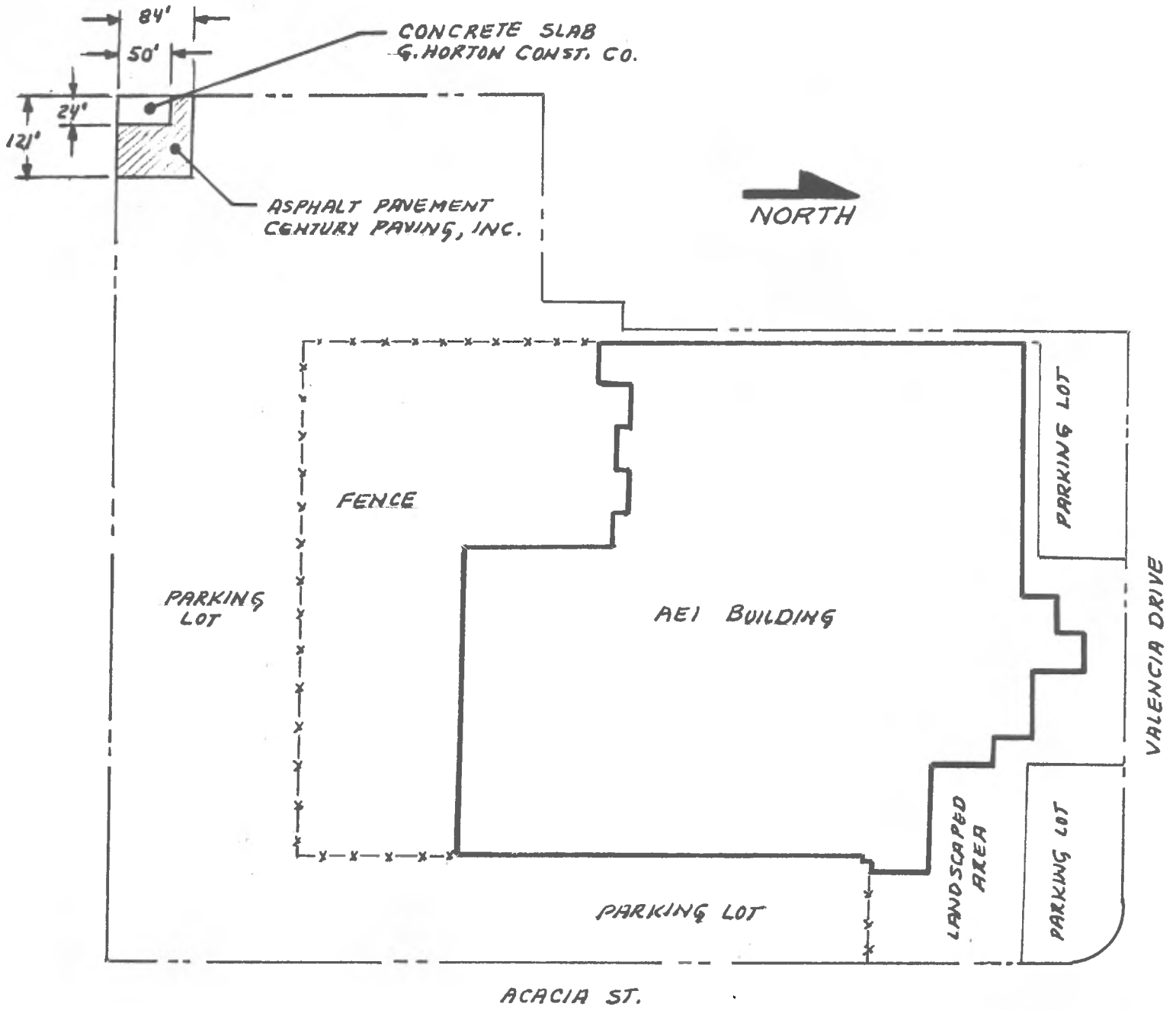
Sincerely,

AMERICAN ELECTRONICS, INC.

R. F. Holland
President

RFH:kc

encl.



AEI®
AMERICAN ELECTRONICS, INC.
1600 E. Valencia Drive, Fullerton, Calif. 92631-4735

Amwest Environmental

28 Centerpointe Drive, Suite 100, La Palma, CA 90623-1054 USA
Telephone: (714)228-2088; FAX: (714)228-2099

Project No. CO4022

TANK CLOSURE REPORT

FOR

American Electronics Inc.
1600 East Valencia Drive
Fullerton, California 92634

Submitted to:

Fire Prevention Bureau
Fullerton Fire Department
Fullerton, California 92632

Prepared by

Amwest Environmental Engineers

Ramesh J. Shah, R.G.
Sr. Hydrogeologist

REGISTERED GEOLOGIST
RAMESH J. SHAH
No. 4818
Exp. 3-30-96
STATE OF CALIFORNIA

Jerry Huang, Ph.D. & P.E.
Vice President
Revised

REGISTERED PROFESSIONAL ENGINEER
JERRY Y.C. HUANG
No. 27446
Exp 6/30/97
CIVIL
STATE OF CALIFORNIA

January, 1995

TANK CLOSURE REPORT

FOR

American Electronics, Inc.
1600 East Valencia Drive
Fullerton, California 92634

Submitted to:

Fire Prevention Bureau
Fullerton Fire Department
312 East Commonwealth Avenue
Fullerton, California 92632

Prepared by

Amwest Environmental Engineering
28 Centerpointe Drive, Suite 100
La Palma, California 90623-1054
Revised

January, 1995

TABLE OF CONTENTS

SECTION	PAGE
LIST OF TABLES	ii
LIST OF FIGURES	ii
LIST OF APPENDICES	ii
ABBREVIATIONS AND ACRONYMS	iii
1.0 INTRODUCTION	1
2.0 TANK INFORMATION	1
3.0 TANK PREPARATION	2
3.1 Permit	2
3.2 Tank Preparation	2
4.0 TANK REMOVAL	2
5.0 SOIL SAMPLING	3
6.0 LABORATORY ANALYSIS OF SAMPLES	4
8.0 SITE HYDROGEOLOGY	6
9.0 POST EXCAVATION	6
10.0 SOIL REMEDIATION	7
11.0 LABORATORY ANALYSIS OF CONFIRMATION SAMPLES	8
12.0 CONCLUSIONS AND RECOMMENDATIONS	9

LIST OF TABLES

		PAGE
Table 1	Tank Information	1
Table 2	Results of Soil Sample Analysis (After Tank Removal)	4
Table 3	Results of Soil Sample Analysis (Confirmation Samples)	9

LIST OF FIGURES

Figure 1	Site Location Map
Figure 2	Site Plan

LIST OF APPENDICES

Appendix A

Tank Removal Permit, City of Fullerton
Uniform Hazardous Waste Manifest
Tank Certification Report (Marine Chemist)
Air Monitoring -SCAQMD Rule 1166
Tank and Liquid Transport Ticket
Tank Disposal Form
Non-Hazardous Materials Hauling Manifest

Appendix B

Certificate of Analysis, QA/QC, and Chain-of-Custody Form (After Tank Removal)

Certificate of Analysis, QA/QC, and Chain-of-Custody Form (Confirmation Samples)

ABBREVIATIONS AND ACRONYMS

B	Benzene
bgs	Below Ground Surface (level)
CRWQCB	California Regional Water Quality Control Board (Los Angeles Region)
DOHS	(California) Department of Health Services (now Department of Toxic Substances Control)
E	Ethylbenzene
Elev.	Elevation
EPA	(United States, Federal) Environmental Protection Agency
Fig.	Figure(s)
ft.	Foot or feet
gal	Gallon(s)
in.	inch(es)
LEL	Lower Explosive Limit
mg/kg	milligram per kilogram
MSL	Mean Sea Level
NA	Not analyzed
ND	Not detected
OVA	Organic Vapor Analyzer
PID	Photo Ionization Detector
ppm	Parts per million (approximately mg/kg)
Ref.	Reference(s)
QA/QC	Quality Assurance/Quality Control
T	Toluene
TPH	Total Petroleum Hydrocarbon
ug/kg	microgram per kilogram
USCS	Unified Soil Classification System
USGS	United States Geological Survey
UST	Underground Storage Tank(s)
VOC	Volatile Organic Compound(s)
X	Xylenes (total)

1.0 INTRODUCTION

Amwest Environmental Engineering (Amwest) has been retained by American Electronics, Inc. to remove one underground storage tank (UST), and associated pipes and prepare a closure report. The tank was located at 1600 E. Valencia Drive, Fullerton, California 92632 (Figure 1, Site Location Map).

This report presents the tank information with background of the tank, tank preparation and tank removal procedures, soil sampling, laboratory analysis of samples, site geology, hydrogeology, post excavation evaluation, remediation by excavation, confirmation soil sampling, backfill, conclusions and recommendations based on the results of the analysis.

2.0 TANK INFORMATION

The fiberglass tank, with a 6000 gallon capacity containing gasoline, was located in the rear parking lot of the subject facility which was accessed via the north Acacia Street gate of the subject property. The tank was located 110 ft. north and 20 ft. east of the south-west corner at the subject property. The tank information is presented in Table 1.

Table 1
Tank Information
American Electronics Inc.
Fullerton, California

Tank No.	Capacity (gallons)	Former use	Type of tank	Remark
1	6,000	Gasoline	Fiberglass	

The tank was approximately 29 ft. long and 6 ft. in diameter, and it was connected to an existing dispenser about five (5) feet away. The tank has no reported history of leakage. The tank was measured for depth and content prior to the start of field activities. The bottom of the tank was about ten

(10) feet the below the ground surface (bgs), and contained approximately one (1) inch of residual product.

3.0 TANK PREPARATION

This section presents the tank removal permit and tank preparation procedure.

3.1 Permit

On October 19, 1994, the City of Fullerton Development Services Dept., Building Division, issued the permit (Number 94-04137) for a tank removal. Tank removal operations were performed according to UST-LOP guidelines and permit requirements. A copy of the permit is included in Appendix A. The work was performed by Amwest Environmental Engineering Company, La Palma, California. Amwest Environmental Engineering holds a California State Contractors license classifications A, B, and Hazardous Substance Removal.

3.2 Tank Preparation

On October 27, 1994, the tank's residual contents (gasoline) were removed and transported (with Uniform Hazardous Waste Manifest number 93743180) to Demenno Kerdoon facility in Compton, California for treatment. A copy of the manifest is included in Appendix A.

4.0 TANK REMOVAL

On October 27 1994, the tank and associated pipes were uncovered and excavated using a backhoe. The excavation work was performed in the presence of Mr. Steve Long, Underground Tank Specialist, Fire Prevention Bureau, Fullerton Fire Department, Fullerton, California.

The tank was certified clean by a marine chemist, CTL Environmental Services, Harbor City, California (Certification No. 03847, Appendix A). Mr. Long verified the percentage of LEL and the tank was lifted from the excavation. Then the tank was inspected and found in good condition with no signs of failure or holes. No tag was found on the tank. The tank was loaded onto a truck and shipped to American Metal Recycling in Ontario, California. The tank disposal form (No. 041071) dated October 27, 1994, is included in Appendix A.

As for the SCAQMD excavation permit "Rule 1166", emissions were monitored using OVA detector (PID) during the soil excavation. The surface was checked frequently to determine whether volatile organic compounds (VOC) were being emitted directly from the soil. The excavated soil from the tank cavity and product lines was stockpiled near the rim of the excavation. The PID results showed less than 50 ppm of VOC, therefore engineering measures were not taken during the excavation.

Once the tank was pulled out of the ground, the pit was filled with the excavated gasoline free (uncontaminated) soil and with imported 3/4" crushed rock. Based on odor, color, and field PID readings, gasoline impacted soil was segregated from gasoline-free soil. The gasoline impacted soil, pending laboratory analysis results, was stockpiled on the concrete floor and covered with visqueen plastic linear.

5.0 SOIL SAMPLING

In concurrence with Mr. Long, Underground Tank Specialist, four (4) soil samples were collected from the site (Figure 2 Site Plan). The samples were collected on October 27, 1994.

Locations and number of the soil samples are as follows:

Sample S-1:	West side, 3 ft. below the gasoline tank invert.
Sample S-2:	East side, 3 ft. below the gasoline tank invert.

Sample S-3: 3 ft, underneath the dispenser island.

Sample S-4: 5 ft, underneath the dispenser island.

All soil samples were collected in clean 2-inch diameter by 6-inch long brass tubes. The sample tubes were completely filled to avoid head space. The tubes were covered with a Teflon sheet and capped with polyethylene caps at both ends. The caps were sealed with paraffin tape. No duct tape or electrician tape was used. Samples were labeled and placed in a cooler containing ice. The samples were logged and delivered to the Chemtek Environmental Laboratories, Inc. (Chemtek) in Santa Fe Springs, California, the same day under chain-of-custody procedures (Appendix B). Chemtek is a California State DOHS certified laboratory. Copies of the certificate of analyses and QA/QC results are included in Appendix B.

6.0 LABORATORY ANALYSIS OF SAMPLES

All four (4) soil samples were analyzed for TPH-G by the EPA Method 8015-M (gasoline) and for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020. Results of the analytical data are presented in Table 2.

Table 2
Results of Soil Sample Analysis
(After Tank Removal)
American Electronics Inc.
Fullerton, California

i) EPA Method 8015M (gasoline)

Sample Number	Location	Gasoline (mg/kg)
S-1	West side, below tank	ND
S-2	East side , below tank	ND
S-3	3 ft. below dispenser	11,900
S-4	5 ft. below dispenser	49.6
Method Detection Limit		10

ii) EPA Method 8020 (BTEX)

Sample Number	Location	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Xylenes (ug/kg)
S-1	West side, below tank	ND	ND	ND	ND
S-2	East side , below tank	ND	ND	ND	ND
S-3	3 ft. below dispenser	20,900	376,000	122,000	915,000
S-4	5 ft. below dispenser	72.8	1,290	360	4,390
Method Detection Limit		5	5	5	15

7.0 SITE GEOLOGY

The site is situated in the east central portion of the Coastal Plain of Los Angeles and Orange Counties. The Coastal Plain is bordered to the north by the Transverse Range Geomorphic Province, to the east by a series of low-lying northwest trending foothills and to the west and southwest by the Pacific Ocean.

It consists of alluvial aprons merging into a coastal plain that has been partially dissected by the channels of a series of southwesterly flowing streams.

The site is located west of the southwesterly flowing Santa Ana River and south of the Puente Hills. Surface elevations at the site are approximately 180 feet above mean sea level. The vicinity of site slopes at approximately 0.009 ft/ft (approximately 50 feet per mile) to southwest.

Thick sequences of sedimentary rocks, late Cretaceous to Quaternary in age, overlie an igneous and metamorphic basement beneath the Coastal Plain. These rocks create a northwesterly trending synclinal trough, which was formed predominantly during the mid-Pleistocene. Landforms resulting from this Mid-Pleistocene deformation include a central lowland plain that extends to the coast and is bordered by northwesterly trending highlands and foothills.

The soil in the tank pit bottom and walls is dark gray to black, stiff, silty CLAY (CL) with moderate to high plasticity and moist.

8.0 SITE HYDROGEOLOGY

The Orange County Coastal Plain ground-water basin, which extends into Los Angeles County basin on the northwest and the Irvine Area basin to the southeast, is divided into two zones. These zones are the unconfined, Forebay Area and the confined, Pressure Area. The Pressure Area is located in the central part of the Coastal Basin where relatively thick clay deposits cap the area. These clay deposits pinch out northward toward the surrounding highlands. The termination of the clay cap defines the southern limit of the Forebay Area. The boundary between the Forebay Area and the Pressure Area is slightly north of the Santa Ana Freeway (Interstate 5) and essentially subparallels it. The Forebay Area is a recharge area for the aquifer system in the Coastal Basin (DWR No. 63-2, 1968, p. 45). The Fullerton site is located approximately at the Forebay Area/Pressure Area boundary.

Water-bearing deposits of Orange County are predominantly unconsolidated or semi-consolidated alluvial sediments that range from Upper Pliocene to Quaternary in age. These water-bearing sediments consist of sand, gravel and conglomerate, with some silt and clay beds. Older Pliocene and basement rocks are essentially non-waterbearing.

Groundwater near the intersection of Commonwealth and Lawrence is approximately 40 feet below the ground surface. Based on topography, geology and water level information, it is estimated that the water level depth at the site would be 40 feet below the ground surface.

9.0 POST EXCAVATION

Base on geology, groundwater table, and regulatory requirements, the soil analytical results after tank removal were evaluated to determine if any additional soil excavation would be required.

The results of the soil samples (S-1 and S-2) below the tank invert showed non-detect BTEX and TPH-G at the method detection limit, suggesting that the tank was not leaking and the soil below the tank appears not to be impacted. However, the soil samples collected at a depth of 3 feet and 5

feet underneath the dispenser exhibited levels of BTEX and TPH-G. The soil up to 5 feet depth was removed and segregated as gasoline impacted soil.

The analytical results showed that the soil sample at 5 feet below the dispenser island, contained TPH-G (49.6 mg/kg), benzene (72.8 ug/kg), toluene (1,290 ug/kg), ethylbenzene (360 ug/kg), and xylenes (4,390 ug/kg).

Based on geology, groundwater table depth, and regulatory requirements, soil with such TPH-G and BTEX concentrations could not be left in place and is required to be remediated. The soil under the site is stiff plastic clay (CL), which could be considered as practically impermeable to transport gasoline. The results of the analysis showed that the concentration of TPH-G and BTEX were substantially decreased from the soil sample at 3 feet depth to the soil sample at 5 feet depth below the dispenser. Based on the soil type and evidence of substantial decreases in TPH-G and BTEX concentrations within two feet, from 3 feet depth to 5 feet depth under the dispenser, it was concluded that the zone of gasoline impacted soil was local and very limited extent.

Based on the available data and interpretation, it was recommended that the gasoline impacted soil be excavated and remediated at an off-site facility.

10.0 SOIL REMEDIATION

The gasoline impacted soil under the dispenser was remediated by excavation and off-site disposal at a treatment facility.

On December 5, 1994, soil under the dispenser was excavated approximately 10 feet below the ground level. The soil removal was performed in presence of Mr. Long, Underground Tank Specialist. In concurrence with Mr. Long, two confirmation soil samples (D-12 and D-10) were collected. Soil sample D-12 was collected at two feet below the excavation pit, and soil sample D-10 gathered at 10 feet below the ground surface from the west wall of the excavations. Both samples were collected according to the soil sampling procedure described in Section 5.0. The soil samples were delivered to Chemtek.

11.0 LABORATORY ANALYSIS OF CONFIRMATION SAMPLES

The confirmation soil samples were analyzed by EPA Method 8015 Modified for gasoline as TPH-G and by EPA Method 8020 for BTEX. Results of the analytical data are presented in Table 3.

Table 3
Results of Soil Sample Analysis
(Confirmation Samples)
American Electronics Inc.
Fullerton, California
(December, 1994)

i) EPA Method 8015M (gasoline)

Sample Number	Location	Gasoline (mg/kg)
D-12	On the bottom of the pit, 12 feet bgs	ND
D-10	On the west wall of the pit, 10 feet bgs	ND
Method Detection Limi		10

ii) EPA Method 8020 (BTEX)

Sample Number	Location	Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Xylenes (ug/kg)
D-12	On the bottom of the pit, 12 feet bgs	ND	ND	ND	ND
D-10	On the west wall of the pit, 10 feet bgs	ND	ND	ND	ND
Method Detection Limit		5	5	5	15

The analytical results of the confirmation soil samples showed the TPH-G and BTEX as non detectable at method detection limits. The analytical results were conveyed to Mr. Long. Amwest concluded that the soil remediation was completed and additional excavation was not warranted.

The excavated cavity was backfilled, as the analytical results of the confirmation soil samples showed non detection of gasoline and BTEX, with the approval from Mr. Long. The gasoline impacted soil from the tank removal excavation and remediation excavation were transported under

non-hazardous materials hauling manifest. A total of 26.65 tons of impacted soil was transported to Candelaria Environmental Co., Anza, California, a permitted biotreatment facility.

The surface area was paved with concrete to match the surrounding paved area.

12.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the field observations and analytical results, the following conclusions are made:

- Soil at the site is stiff, plastic clay (CL).
- Groundwater was not encountered during the excavation.
- The UST was properly removed and disposed of according to current regulations and permit requirements.
- Analytical results of the soil samples beneath the UST showed non-detectable benzene, toluene, ethylbenzene, xylenes, and TPH - G (gasoline); however, soil samples under the dispenser exhibited levels of TPH-G and BTEX.
- Gasoline impacted soil was segregated and disposed of at a permitted biotreatment facility.
- Confirmation soil samples under the dispenser showed non-detectable benzene, toluene, ethylbenzene, xylenes, and TPH-G (gasoline).
- The excavated cavity was backfilled and the area was resurfaced with concrete.

Recommendations:

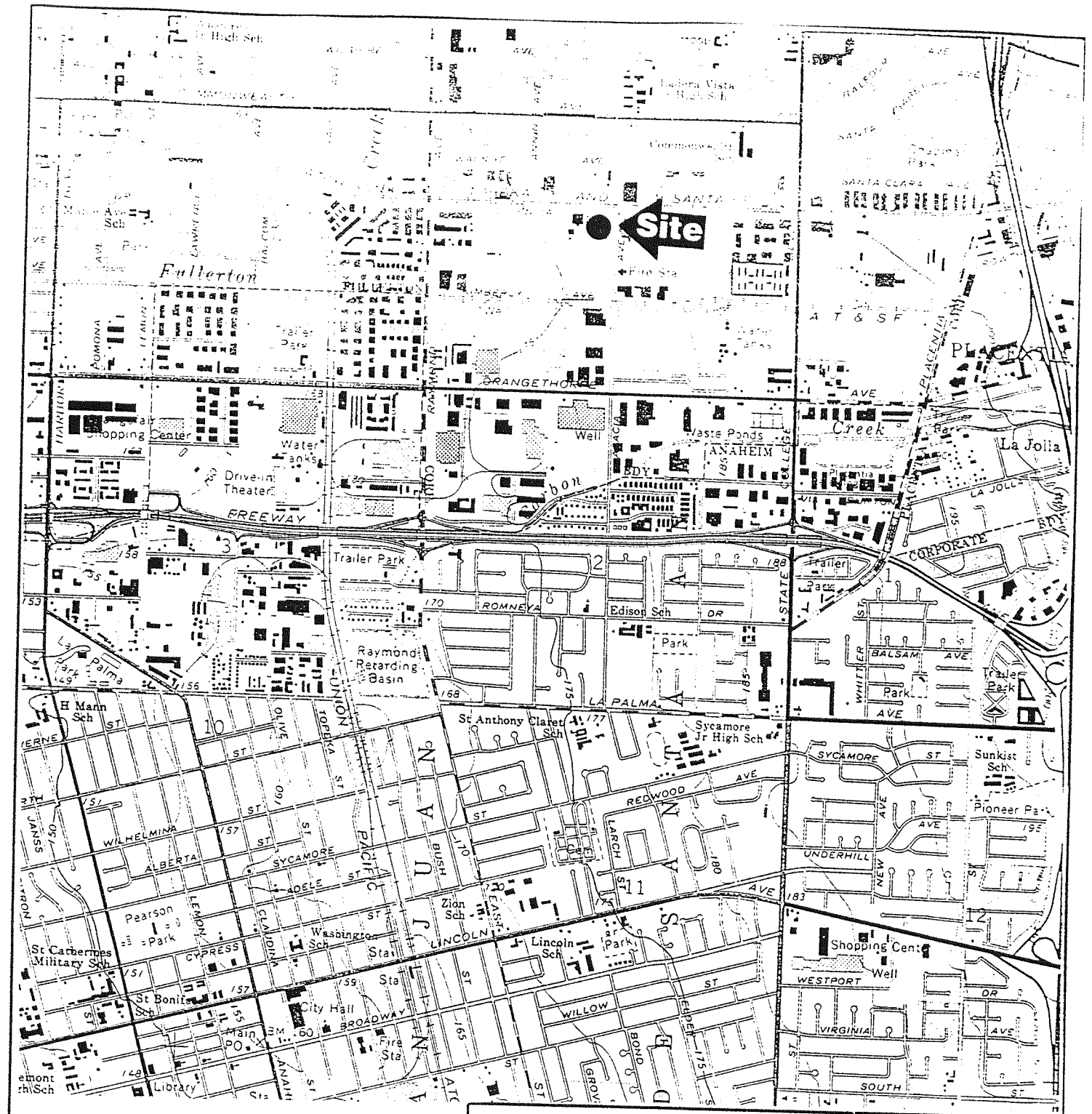
Based on the analytical results of the confirmation soil samples, no further field investigations and remediation are recommended. A closure approval certificate from the Fire Prevention Bureau, Fullerton Fire Department, City of Fullerton, is requested.

FIGURES

Figure 1 - Site Location Map
Figure 2 - Plot Plan

APPENDIX A

Tank Removal Permit
Uniform Hazardous Waste Manifest
Tank Certification Report (Marine Chemist)
Air Monitoring - SCAQMD Rule 1166
Tank and Liquid Transport Ticket
Tank Disposal Form
Non-Hazardous Materials Hauling Manifest



SITE LOCATION MAP

American Electronics, Inc.
1600 East Valencia Drive
Fullerton, California

Amwest Environmental Engineering
28 Centerpointe Drive, #100
La Palma, CA 90623-1054

PROJECT NO.: C04022	SCALE: None
FIGURE NO.: 1	DRAWN BY:
DATE:	APPROVED BY:

CITY OF FULLERTON

303 WEST COMMONWEALTH AVENUE
FULLERTON, CA 92632

Development Services Department
Building Division

FOR INFORMATION: (714) 738-6540

. FOR INSPECTION
Requests for inspections should be made at least twenty-four hours in advance by telephone at (714) 738-6542, 7:30 A.M. - 5:00 P.M.

Inspectors office hours are:
7:30 - 8:00 A.M. and 3:30 - 4:30 P.M.

[illegible]

Approved : 10/19/94
Completed :
To Expire :

Owner : BAKULICH, PETER F
Applicant : AMWEST ENVIRONMENTAL
Applicant Addr : [illegible] CENTERPOINT DR STE. 100 LA PALMA, CA [illegible]
Job Address : 1600 E VALENCIA DR
Phone number : 228-2088
Class code :
Valuation : 1,000
Construction : ALT
Permit to do : COMM'L BLDG PERMIT-1 TANK REMOVAL
Units : 0
CONTRACTOR : AMWEST ENVIRONMENTAL 673598 Lic. C NO 228-2088
City License : 217931
Work To Be Done COMM'L TANK REMOVAL
**REQUIRES SITE FENCING
DURING CONSTRUCTION &
SOIL REPORT REQUIRED
PRIOR TO FINAL.

*** Fees Required *** *** Fees Collected & Credits ***

Account No.	Receipt No.	Date	Payment
4220-347		10/19/94	14.30
4611-347		10/19/94	[illegible]
4220-34[illegible]		10/19/94	30.00
4614-34[illegible]		10/19/94	19.50
4611-347		10/19/94	1.05
551-241-1086-0000		10/19/94	.21
4227-342		10/19/94	1.00
TOTAL THIS DATE		*********	66.41

Fees: 66.41
Adjustments: .00
Total Fees: 66.41

Total Payments: 66.41
Balance Due: .00

YES ☐ WILL THE APPLICANT OR FUTURE BUILDING OCCUPANT HANDLE A HAZARDOUS MATERIAL OR A MIXTURE CONTAINING A HAZARDOUS MATERIAL EQUAL TO OR GREATER THAN THE AMOUNTS SPECIFIED ON THE HAZARDOUS MATERIALS INFORMATION GUIDE?

YES ☐ WILL THE INTENDED USE OF THE BUILDING BY THE APPLICANT OR FUTURE BUILDING OCCUPANT REQUIRE A PERMIT FOR CONSTRUCTION OR MODIFICATION FROM THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)? SEE PERMITTING CHECKLIST FOR GUIDELINES.

Print Name _____

YES ☐ NO ☐ WILL THE PROPOSED BUILDING OR MODIFIED FACILITY BE WITHIN 1000 FEET OF THE OUTER BOUNDARY OF A SCHOOL?

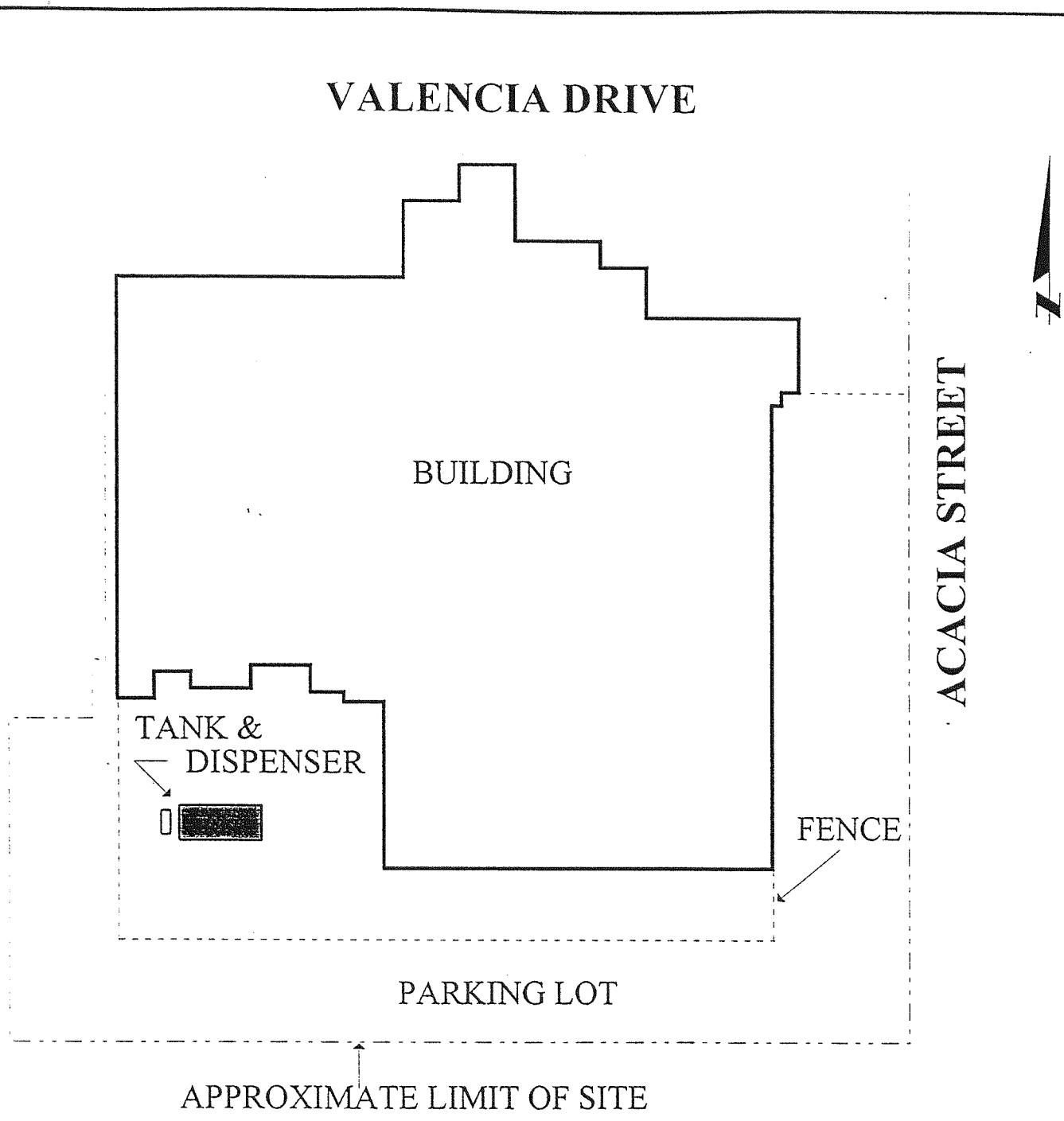
I HAVE READ THE HAZARDOUS MATERIAL INFORMATION GUIDE AND THE SCAQMD PERMITTING CHECKLIST. I UNDERSTAND MY REQUIREMENTS UNDER THE STATE OF CALIFORNIA HEALTH & SAFETY CODE, SECTIONS 25505, 25533, AND 25534 CONCERNING HAZARDOUS MATERIALS REPORTING

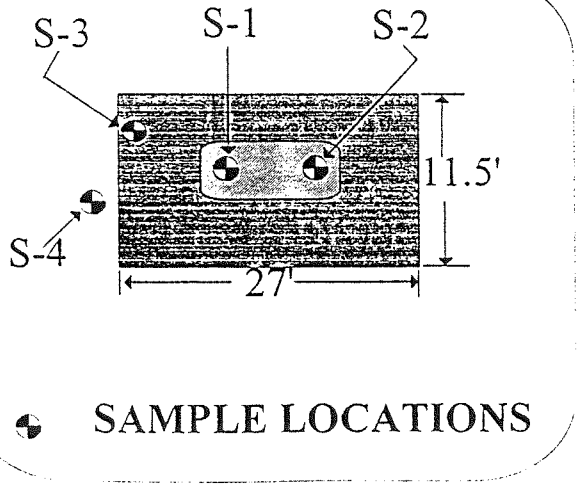
Owner or Authorized Agent X _____

Plan Check Approvals:

Planning _____
Building _____
Engineering _____
Fire _____

APPLICANT'S COPY





Plot Plan
American Electronics Inc.
1600 East Valencia Drive
Fullerton, California 92634

Amwest Environmental Engineering
28 Centerpointe Drive, #100
La Palma, CA 90623-1054

PROJECT NO.: CO4022	SCALE: None.
FIGURE NO.: 2	DRAWN BY: T.C..
DATE: 01/11/95	APPROVED BY: R.S..

UNIFORM HAZARDOUS WASTE MANIFEST

Generator's US EPA ID No: CAD981390909 Manifest Document No: 43165 2. Page 1 of 1

Information in the shaded areas is not required by Federal law

3. Generator's Name and Mailing Address: American Electronics, 1600 E Valencia Dr. Fullerton, Ca 92631

4. Generator's Phone: (714) 871-3020

A. State Manifest Document Number: 93743165

B. State Generator's ID: HAAQ36-012114

5. Transporter 1 Company Name: NIETO AND SONS TRUCKING, INC.

6. US EPA ID Number: CAT080016116

C. State Transporter's ID: 439917

D. Transporter's Phone: 714-990-6855

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: DEMENNO KERDOON, 2000 N. ALAMEDA, COMPTON, CA 90222

10. US EPA ID Number: CAT080013352

G. State Facility's ID: CAT080013352

H. Facility's Phone: 310-537-7100

11. US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. NON RCRA HAZARDOUS WASTE LIQUID	001	TT	150	G	State 221 / EPA/Other EXEMPT
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above:
NO SMOKING
WEAR APPROPRIATE PROTECTIVE CLOTHING
EMERGENCY TELEPHONE # (714) 990-6855

K. Handling Codes for Wastes Listed Above: a. 01 b. c. d.

15. Special Handling Instructions and Additional Information:
CROSBY & OVERTON
1630 W. 17th STREET - 310-432-5445
LONG BEACH, CA 90813 CAD028409019

alternate disposal sites
• PETROLEUM RECYCLING CORPORATION
• 1835 E. 29th STREET 310-595-7431
• SIGNAL HILL, CA 90806 CAT080011059

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DON WALL Signature: Don Wall Month 10 Day 27 Year 9

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Ronnie Rodriguez Signature: [signature] Month 10 Day 27 Year 9

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: Signature: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Rod Wolfe Signature: Rod Wolfe Month 11 Day 04 Year 9

DO NOT WRITE BELOW THIS LINE.

GENERATOR

TRANSPORTER

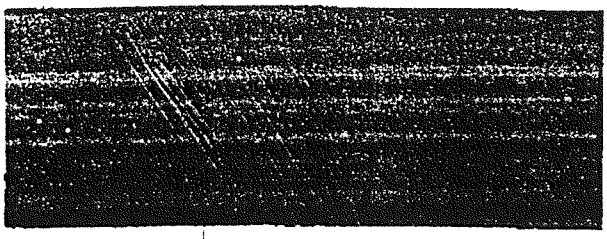
FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802. WITHIN CALIFORNIA, CALL

DTSC 8022A (9/93)
EPA 8700—22

TANK CERTIFICATION REPORT

58



TANK REMOVAL CERTIFICATE #: 03847

Date: 10/27/94

Permit #:

Site: American Electronics

Address of tank: 1600 E. Valencia Drive
Fullerton, CA

Client: Nieto and Sons Trucking Inc

Cylindrical Horz fiberglass	5,000 gallon	03847	gasoline	LEL 0% 12:00 P.M.

The tank(s) described above has/have been inspected and found to be gas free based on readings obtained with an MSA type 2A Explosivity Meter (LEL of zero percent). A visual inspection has been made of the interior of the tank(s) and no visible contamination has been observed except as noted below.

EXCEPTION: None

THE AMERICAN BOARD OF INDUSTRIAL HYGIENE INCORPORATED CERT. NO. 1973 14232

CLIENT COPY White | CTL COPY Green | FIRE DEPARTMENT COPY Canary | TRANSPORTERS COPY Pink | TRANSPORTERS COPY Goldenrod

CTL Environmental Services
24404 S. Vermont Ave., Ste. 307 · Harbor City, CA 90710 · TEL: (310) 530-5006 · FAX: (310) 530-0792

LABORATORY NO. 110158 REPORTED 10/31/94

CLIENT NASI, Incorporated
P.O. Box 8111
Anaheim, CA 92802

ATTENTION

TANK SITE American Electronics
1600 E. Valencia Drive
Fullerton, CA

INVESTIGATION The tank(s) is/are to be inspected as clean and vapor free. The inspection was conducted on October 27, 1994, by Duff C. Kerwin, an employee of CTL Environmental Services, working under the direct supervision of Stuart E. Salot, Ph.D, C.I.H. (#1433 and 1973).

METHOD The tank(s) was/were inspected for explosive atmosphere utilizing an MSA Model 2A Explosimeter, combustible gas indicator. (A) Visual inspection(s) of the interior(s) was/were performed to ensure that no deposits, sludge, or foreign materials remained. (A) confirming photograph(s) was/were taken at the site.

RESULTS The tank(s) was/were inspected and found to be vapor-free (LEL of zero percent) and deemed clean.

Certificate number 03847.

Respectfully Submitted,
CTL Environmental Services

Stuart E. Salot O.K.
Stuart E. Salot, Ph.D, C.I.H.
Certified Industrial Hygienist

This report applies only to the sample, or samples, investigated and is not necessarily indicative of the quality of condition of apparently identical or similar material or products. As a mutual protection to clients, the public and these Laboratories, this report is submitted and accepted for the exclusive use of the client to whom it is addressed and upon the condition that it is not to be used, in whole or in part, in any advertising or publicity matter without prior written authorization from these Laboratories.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
RULE 1166 SOIL MONITORING RECORDS

SITE INFORMATION

OWNER: AMERICAN ELETECNICS I.

ADDRESS: _____

CITY: FULLERTON CA.

ZIP CODE: _____

DATE OF EXCAVATION: 12-05-94

MONITORING INFORMATION

COMPANY: AM WEST ENV. GROUP

NAME OF PERSON: Julio Silva

MONITOR MFG: H-N U SYSTEM

MODEL NO: DL-101

CALIBRATION GAS _____

TIME	VOC CONCENTRATION (ppmV)		COMMENTS
	EACH LOAD AS REMOVED	STOCKPILE . SURFACE	
7:40 AM			
7:40 AM		13.9 PPM	EXCAVATION WEST END PIT 5' DTH
7:45 AM		13.8 PPM	EXCAVATION WEST END PIT 5' DTH
7:50 AM		10.9 PPM	EXCAVATION WEST END PIT 7' DTH
8:0 AM		8.9 PPM	EXCAVATION WEST END PIT 7' DTH
	EXCAVATION STOP FOR		30 MIN.
8:35		14.8	EXCAVATION WEST END . OVER EXISTING PIT 3' DTH.
8:40		10.8	EXCAVATION OVER EXISTING PIT 3' WEST
8:50		1.0	EXCAVATION OVER EXISTING PIT 3' WEST

SIGNATURE: _____ DATE: _____

NIETO & SONS TRUCKING, INC.

N.A.S.I., INC.

1281 Brea Canyon Road • Brea, CA 92621
Mail Address: P.O. Box 8111 • Anaheim, CA 92802
(714) 990-6855 • FAX (714) 990-4862

DAILY TICKET

DT 31009

JOB DATE / /

COMPANY SOLD TO

ORDERED BY | TELEPHONE

ADDRESS

ORDER DATE	ORDER TIME	P.O. NUMBER
/ /		

JOB SITE:

CONTACT: | TELEPHONE:

DRIVER	SWAMPER	TRUCK NO.	TRAILER NO.	START TIME	HOURLY RATE
Joe Colon		984		8:00 a.m	$

DESCRIPTION OF WORK REQUESTED

There @ 9:45 Pull and haul 1-8,000 gallon fiberglass tank to AMR
Crane/Trailer

EQUIPMENT NEEDED:

Bring 120# of Dry Ice

DRIVER'S TIME REPORT

DATE	YARD DEPART	JOB ARRIVE	JOB DEPART	DUMP SITE ARRIVE	DUMP SITE DEPART	YARD ARRIVE	LUNCH	TOTAL HOURS
4/27/94	6:00	7:00						

WORK PERFORMED

MANIFEST # _____ GALLONS: _____ SOLIDS %: _____

STINGERS USED:

TRUCK WASHED OUT	LUNCH TAKEN	TOTAL HOURS CHARGED	HOURLY RATE	TOTAL CHARGES
			$	$

DRIVER SIGNATURE | TRUCK NUMBER | CUSTOMER SIGNATURE X | DATE

** 24-HOUR SERVICE ***

AMERICAN FUEL TANK METAL RECYCLING, INC.

2202 South Milliken Avenue
Ontario, CA 91761
(714) 988-8000

No. 41071

TANK DISPOSAL FORM

Date: 10-27 ,19 94
Job #
P. O. #

CONTRACTOR: Amwest Env.
ADDRESS:
JOB SITE: American Electronics
ADDRESS: 1600 E. Valencia, Fullerton, CA
DESTINATION: A.M.R. 2202 S. Milliken Ave., Ontario, CA 91761

DATE	TIME	PROJECTED TANKS	ORDERED BY:	LIC. NO.

SPECIAL INSTRUCTIONS: c/o Nieto + Sons

TIME IN:
TIME OUT:

✓	Services Rendered	Cost
___	Disposal Fee	200.00
___	Extensive Loading Time	150.00
___	Disposal Fee with Permit	300.00
___	Fiberglass Tank Disposal Fee Per Tank	400.00
1	Fiberglass Tank Delivered	[illegible]
___	Bobtail Disposal Fee	250.00
___	Cancellation Fee	250.00
	TOTAL CHARGES	$550.00 / $50.00

All fees incurred are per load unless specified. Terms are net 30 days from date of invoice. Contractor's signature represents acceptance of terms for payment, and confirms that tank removal complies with State laws.

CONTRACTOR'S SIGNATURE

TANKS RECEIVED

QTY	GALLONS	TYPE F*	TYPE S*	NET TONS	TOTAL
___	280	☐	☐	.14	
___	500	☐	☐	.21	
___	550	☐	☐	.24	
___	1000 - 12 ft.	☐	☐	.44	
___	1000 - 6 ft.	☐	☐	.61	
___	1500	☐	☐	.87	
___	2000	☐	☐	.97	
___	2500	☐	☐	1.14	
___	3000	☐	☐	1.32	
___	4000	☐	☐	1.64	
___	5000	☐	☐	2.42	
1	6000	☒	☐	2.84	
___	7500	☐	☐	3.26	
___	8000	☐	☐	3.44	
___	9000	☐	☐	3.82	
___	10000	☐	☐	4.33	
___	12000	☐	☐	4.93	

NO. OF TANKS: 1 TOTAL NET TONS:

*F — FIBERGLASS *S — STEEL 105

CERTIFICATE OF TANK DISPOSAL / DESTRUCTION

THIS IS TO CERTIFY THE RECEIPT AND ACCEPTANCE OF THE TANK(S) AS SPECIFIED ABOVE. ALL MATERIALS SPECIFIED HAVE BEEN COMPLETELY DESTROYED FOR SCRAP PURPOSES ONLY.

Cheryl Lorio
AUTHORIZED REP.

October 27, 1994
DATE

CONTRACTOR COPY

7435

BIOTREATMENT FACILITY

EPA ID# IRC 356613091

NON-HAZARDOUS MATERIALS HAULING MANIFEST

WEIGHMASTER CERTIFICATE

IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate who is ognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code listered by the Division of Measurements Standards of the California Department of Food and Agriculture.

GENERATOR

NAME: AEI

ADDRESS: 1600 E VALENCIA PHONE NO.

CITY, STATE, ZIP FULLERTON CA APN:

WASTE DESCRIPTION FUEL MONTI SOIL GENERATING PROCESS DISPENSOR LEAK

COMPONENTS OF WASTE PPM COMPONENTS OF WASTE PPM

LESS THAN 12,000 PPM

PROPERTIES: pH ____ SOLID X FLASH POINT ____ % MOISTURE ____

HANDLING INSTRUCTIONS WEAR APPROPRIATE CLOTHING

GENERATOR CERTIFIES THESE WASTES AS DESCRIBED ARE RCRA NON-HAZARDOUS, CALIFORNIA REGULATED ONLY.

BY: DON WALL Don Wall DATE: 12-5-94

Signature / Print or Type Full Name

HAULER

COMPANY NAME West Coast G&G PHONE NO. 800-522-028

ADDRESS 7312 Orangewood SERVICE ORDER NO.

CITY, STATE, ZIP Buena Park PICK UP DATE 12-5-94

TRUCK TYPE: DUMP X ROLL OFF ____ OTHER ____

TRUCK LIC. # 4K53220 TRUCK ID # 18

WEIGHT TICKET # TRUCK GROSS WEIGHT 40.06

DRIVER NAME ART VERKALK TRUCK TARE WEIGHT 13.41

TRUCK NET WEIGHT 26.65

DRIVER SIGNATURE [signature] 12-5-94

PROCESSOR

TIME LEFT JOB LOAD #

JOB SITE SUPERVISOR B WEISSERT [signature]

Name Signature

CANDELARIA ENVIRONMENTAL CO. (619) 941-3267 FAX 941-8388

4001 Candelaria Lane 24hr Emergency (619) 979-3585

Anza, CA 92539

DATE WEIGHED 12-5-94 IN TONS DEPUTY SIGNATURE Lynne Nunfuro

☒ GROSS ☒ TARE

APPENDIX B

Certificate of Analysis (QA/QC)
Chain-of-Custody Form (After Tank Removal))

Certificate of Analysis (QA/QC)
Chain-of-Custody Form (Confirmation Samples)

Telephone 310-926-9848
Telefax 310-926-8324

Client: Amwest Enviromental
Project: American Electronics
Job No: 410054

Date:10-28-94

Analysis: EPA 8020 (BTEX) (Reporting unit:µg/kg)

Sample ID: See below
Lab Sample ID: See below
Sample Date: 10-27-94
Analysis Date: 10-27-94

Sample IDs Client	Lab	DF	Benzene	Toluene	Ethyl-benzene	Xylenes	SURROGATE(a,a,a-Trifluorotoluene) SPK Conc PPB	%RC
S-1	01A	5	ND	ND	ND	ND	40	102.9
S-3	02A	1000	20,900	376,000	122,000	915,000	40	105.3
S-2	03A	5	ND	ND	ND	ND	40	85.6
S-4	04A	5	72.8	1290	360	4390	40	113.5
Method Detect Limit:		5	5	5	5	15		
Method Blank:		1	ND	ND	ND	ND	40	102.8

DF: Dilution Factor.

ND: Not Detected (at the specified limit).

CERTIFICATE OF ANALYSIS

Job No. 410054 Date: 10-28-94

This is the Certificate of Analysis for the following samples:

Client Work ID:	Amwest Environmental
Project No.:	American Electronics
Date Received:	10-27-94
Number of Samples:	4
Sample Type:	Soil

Samples were labeled as follows:

SAMPLE IDENTIFICATION	LABORATORY NUMBER
S-1	410054-01A
S-3	410054-02A
S-2	410054-03A
S-4	410054-04A

Reviewed and Approved:

Michael C.C. Lu
Laboratory Director

EPA 8020
QA/QC REPORT

Unit: µg/kg

Job No.: 410054
Lab Sample ID: 410054-01A
Date Performed: 10-27-94

ANALYTE	ORIG. RESULT	SPK CONC	MS	% MS	MSD	% MSD	% RPD	ACP %MS	ACP RPD
Benzene	ND	20.0	19.4	97.0	20.2	101.0	4.0	80-120	0-20
Toluene	ND	20.0	20.4	102.0	21.6	108.0	5.7	80-120	0-20

Telephone 310-926-9825
Telefax 310-926-8324

Client: Amwest Environmental
Project: American Electronics
Job No: 410054 Date:10-28-94

Analysis: EPA 8015M (Gasoline) Reporting unit: mg/kg

Sample ID: See below
Lab Job No.: 410054
Sample Date: 10-27-94
Analysis Date: 10-27-94

Sample IDs Client	Lab	DF	Gasoline	SURROGATE SPK CONC	%RC
S-1	01A	5	ND	0.04	109.5
S-3	02A	1000	11,900	0.04	100.4
S-2	03A	5	ND	0.04	99.3
S-4	04A	5	49.6	0.04	115.4

Method Detection Limit: 10

Method Blank: 1 ND

Report Detection Limit: RDL=MDL*DF

DF: Dilution Factor.

ND: Not Detected (at the specified limit).

Telefax 310-928-8324

8015M (Gasoline)
QA/QC REPORT

Unit: mg/kg

Job No.: 410054
Lab Sample ID: 410054-01A
Date Performed: 10-27-94

Analyte	ORIG Result	SPK CONC	MS	% MS	MSD	% MSD	% RPD	ACP %MS	ACP %RPD
Gasoline	ND	1.00	1.19	119.0	1.152	115.2	3.4	80-120	0-20

CHAIN OF CUSTODY

FULLERTON FIRE DEPARTMENT
Environmental Protection Program
312 E. Commonwealth Ave.
Fullerton, CA 92632
Phone: (714)738-6500
Fax: (714)738-5355

1. All samples are to be handled as court evidence and are to be properly stored in a secure location.
2. Please write legibly.
3. Attach this form to the ORIGINAL report of the analytical results and return them to the address listed above. Laboratory results received without proper chain of custody documentation will not be accepted.
4. To be completed by laboratory analyst:

LAB NO.: 410054

Date received: 10-27-94

Sample(s) condition (please check):

Chilled: ✓ Department seal(s) intact: ✓

Container in good condition: ✓

Date analysis completed: 10-28-94

Analyst: RACosta Ph#. (310) 926-9848

5. To be completed by sample collector:

Site Name/Address: American Electronics
1600 E Valencia

Date of collection: 10/27

Sample Collector/Company: Amwest

Telephone No.: (714) 228-2088

FFD Representative: Steve Long

7.

Sample Number	Test Method	Sample Description / Comments	Time of Collection
S1	8015M-8020 (GAS)	West Tank 4Ft	12:10
S3	↓	Dispenser 3Ft	12:20
S2	↓	East Tank 4Ft	12:30
S4	↓	Dispenser 5/t	12:37

CHAIN OF CUSTODY

	SIGNATURE	Company / Agency	Inclusive dates / Times
1.	Julio Silva	AMWEST ENV. Group	10-27-94 / 13:40
2.	RACosta	CHEMTEK LAB	10-27-94 / 1340
3.			/
4.			/

FFD 231

White-Return this copy to Fullerton Fire Department, Canary- Laboratory copy,
Pink- Contractor or Consultant copy / Goldenrod - office copy

CHEMTEK
ENVIRONMENTAL
LABORATORIES

14140 E. Alondra Boulevard
Suite A Santa Fe Springs

Telephone 310-926-9845
Telefax 310-926-8324

CERTIFICATE OF ANALYSIS

Job No. 412006 Date: 12-05-94

This is the Certificate of Analysis for the following samples:

Client Work ID:	Amwest Environmental Group
Project No.:	American Electronics
Date Received:	12-05-94
Number of Samples:	2
Sample Type:	Soil

Samples were labeled as follows:

SAMPLE IDENTIFICATION	LABORATORY NUMBER
D-12	412006-01A
D-10	412006-02A

Reviewed and Approved:

Michael C.C. Lu
Laboratory Director

CHEMTEK
inc.
ENVIRONMENTAL
LABORATORIES

14140 E. Alondra Boulevard
Suite A Santa Fe Springs
California 90670

Telephone 310-926-9848
Telefax 310-926-8324

Client: Amwest Environmental
Project: American Electronics
Job No: 412006 Date:12-05-94

Analysis: EPA 8015M (Gasoline) Reporting unit: mg/kg

Sample ID: See below
Lab Job No.: 412006
Sample Date: 12-05-94
Analysis Date: 12-05-94

Sample IDs Client	Lab	DF	Gasoline	SURROGATE SPK CONC	%RC
D-12	01A	5	ND	0.04	88.4
D-10	02A	5	ND	0.04	88.4
Method Detection Limit:			10		
Method Blank:	1		ND	0.04	102.8

Report Detection Limit: RDL=MDL*DF

DF: Dilution Factor.

ND: Not Detected (at the specified limit).

CHEMTEK

ENVIRONMENTAL

LABORATORIES

Telephone 310-926-8543
Telefax 310-926-8324

Client: Amwest Enviromental
Project: American Electronics
Job No: 412006 Date:12-05-94

Analysis: EPA 8020 (BTEX) (Reporting unit:µg/kg)

Sample ID: See below
Lab Sample ID: See below
Sample Date: 12-05-94
Analysis Date: 12-05-94

Sample IDs Client	Lab	DF	Benzene	Toluene	Ethyl-benzene	Xylenes	SURROGATE(a,a,a-Trifluorotoluene) SPK Conc PPB	%RC
D-12	01A	5	ND	ND	ND	ND	40	87.3
D-10	02A	5	ND	ND	ND	ND	40	90.1
Method Detect Limit:			5	5	5	15		
Method Blank:		1	ND	ND	ND	ND	40	96.7

DF: Dilution Factor.

ND: Not Detected (at the specified limit).

CHEMTEK
INC.
ENVIRONMENTAL
LABORATORIES

14140 E. Alondra Boulevard
Suite A Santa Fe Springs
California 90670

Telephone 310-926-9848
Telefax 310-926-8324

8015M (Gasoline)
QA/QC REPORT

Unit: mg/kg

Job No.: 412006
Lab Sample ID: 412006-01A
Date Performed: 12-05-94

Analyte	ORIG Result	SPK CONC	MS	% MS	MSD	% MSD	% RPD	ACP %MS	ACP %RPD
Gasoline	ND	1.00	0.957	95.7	0.899	89.9	6.2	80-120	0-20

CHEMTEK

ENVIRONMENTAL

LABORATORIES

14140 E. Alondra Boulevard
Suite A, Santa Fe Springs
California

Telephone 310-926-8848
Telefax 310-926-8324

EPA 8020
QA/QC REPORT

Unit: µg/kg

Job No.: 412006
Lab Sample ID: 412006-01A
Date Performed: 12-05-94

ANALYTE	ORIG. RESULT	SPK CONC	MS	% MS	MSD	% MSD	% RPD	ACP %MS	ACP RPD
Benzene	ND	20.0	18.9	94.5	18.6	93.0	2.1	80-120	0-20
Toluene	ND	20.0	19.2	96.0	19.5	97.5	1.6	80-120	0-20

CHAIN OF CUSTODY RECORD

Log Number 412006

Client name	AMWEST / America Electronics
Project #	C04022
Address	1600 E. Valencia Dr
Phone #	714-228-2058
Fax #	714-228-2099
City, State, Zip	Fullerton, CA 92632
Report attention	Charlie Loha
Sampled by	R. SHAH

Analyses required: 8015 M (Gas) - 80 series

Sample number	Date Sampled	Time Sampled	Type* See key below	Sample description	Number of containers	8015 M (Gas)							Hazardous sample Special handling required	Remarks
D-12	12/5/94	9:18	S	12 ft below surface	1	+								24 Hours
D-10	12/5/94	9:20	S	10 on side wall	1	+								~~four~~ turn around time

Signature	Print Name	Company	Date	Time
Relinquished by [signature]	Julio Silva	AMWEST ENV. Group	12-05-94	10:05 AM
Received by [signature]	ROLLY CORTEZ	CHEMTEK	12-05-94	10:05 AM
Relinquished by				
Received by				
Relinquished by				
Received by Laboratory				

CHEMTEK ENVIRONMENTAL LABORATORIES INC.
14140 Alondra Boulevard, Suite A
Santa Fe Springs, Ca. 90670
Tel: (310) 926-9848 Fax: (310) 926-8324

Note:
Samples are discarded 30 days after results are reported unless other arrangements are made.
Hazardous samples will be returned to client or disposed of at client expense.

* Key: AQ-Aqueous NA-Nonaqueous SL-Sludge GW-Groundwater SO-Soil OT-Other PE-Petroleum

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ATC ENVIRONMENTAL INC.

16 December 1996
14240.0001

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Attention: Mr. Augustine Anijielo

SUBJECT: NOVEMBER 1996 GROUNDWATER MONITORING REPORT FOR THE AMERICAN ELECTRONICS, INC. FACILITY, LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report summarizes the activities and results of the November 1996 round of groundwater monitoring conducted on 14 and 15 November 1996 at the American Electronics, Inc. (AEI) facility (site) located at 1600 East Valencia Drive, Fullerton, California (Figure 1). This round of groundwater monitoring was conducted at the request of the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) and this letter report is presented to you at the request and authorization of Mr. Richard F. Holland of AEI.

The locations of the four wells that were sampled at the site, designated BP-2, BP-3, BP-4 and BP-8 are shown in Figure 2. Monitoring wells BP-1, BP-5, BP-6, and BP-7 were recently abandoned in accordance with the conditions stated in the RWQCB review letter dated 20 June 1996 (RWQCB, 1996). The well abandonment procedures were documented in a letter to the RWQCB dated 6 December 1996 (ATC Environmental Inc., 1996). Fourteen rounds of groundwater monitoring samples have been collected from monitoring wells BP-2 and BP-3 since their installation in March 1989; 12 rounds of groundwater monitoring samples have been collected from monitoring well BP-4 since its installation in December 1990; and 6 rounds of groundwater monitoring samples have been collected from monitoring well BP-8 since its installation in July 1993.

OBJECTIVE

The objective of the work summarized in this report was to monitor the spatial and temporal changes in the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

17321 Irvine Blvd. • Tustin, CA 92780 • (714) 734-0303 • FAX (714) 734-0510

SCOPE

The scope of work used to meet the objective included the following tasks:

- Measurement of groundwater levels in each of the on-site monitoring wells;
- Purging and groundwater sampling of the four monitoring wells;
- Laboratory analyses of the groundwater samples; and
- Data evaluation and report preparation.

GROUNDWATER MONITORING

Groundwater Sample Collection

The groundwater monitoring conducted at the site included the collection of groundwater elevation measurements and groundwater samples from the four existing wells (BP-2, BP-3, BP-4 & BP-8). The groundwater monitoring activities were conducted under the supervision of a California-registered geologist (RG) and the field procedures are presented in Appendix A. Groundwater levels in each of the four wells were measured prior to well purging. Water was pumped from each of the wells until measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and up to three well volumes of water were extracted. Approximately 150 gallons of water were purged from the monitoring wells. The volume of water purged, pH, temperature, and electrical conductivity for each well were recorded on groundwater collection logs (presented in Appendix B). The submersible pump was set approximately 5 to 10 feet below the top of the screened interval in each monitoring well and the wells were purged at the approximate recharge rate in order to minimize the cascading of water into the wells. Groundwater was allowed to recharge to at least 80 percent of the static water level prior to sample collection.

Groundwater Gradient Assessment

Table 1 presents the results of static groundwater elevation measurements obtained by Applied Geosciences Inc. (now ATC Environmental Inc.) from January 1991 to 14 November 1996. Hydrographs of the groundwater elevation levels over time (time line beginning in March 1989) are presented in Figures 3 through 6. The groundwater gradient is interpreted to be approximately 0.001 ft/ft to the west/southwest (Figure 2).

Laboratory Analyses of November 1996 Groundwater Samples

Groundwater samples were analyzed by Del Mar Analytical of Irvine, California. Groundwater samples collected from the monitoring wells were analyzed for VOCs in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8021. As part of the quality assurance/quality control (QA/QC) program, one duplicate groundwater sample (BP-A) collected

from well BP-4 was analyzed for VOCs.

The results of the analyses reported that three VOCs were detected in groundwater samples collected from the site; tetrachloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethene (1,1-DCE). PCE, TCE, and 1,1-DCE were reported in the samples collected from each of the four monitoring wells (BP-2, BP-3, BP-4, and BP-8) at concentrations ranging from 4 to 13, 5.1 to 44, and 1.1 to 3.9 micrograms per liter (μg/L), respectively. No VOCs were reported in the laboratory method blank samples at concentrations exceeding the laboratory detection limits. A summary of the laboratory analytical results is presented in Table 2 and the laboratory reports are presented in Appendix D. Graphs of the PCE and TCE concentrations in the groundwater samples over time (time line beginning in March 1989) are presented in Figures 7 through 10.

DISCUSSION

The groundwater gradient is interpreted to be relatively flat (0.001 ft/ft) with a general flow direction to the west/southwest. The interpreted gradient is generally consistent with previous rounds of monitoring conducted at the site. The graphs showing the groundwater elevations versus time (Figures 3 through 6) illustrate a declining elevation trend over the past 2.5 years after a 3 year upward trend.

The primary compounds consistently detected in the groundwater samples collected during this and previous rounds of monitoring were the chlorinated hydrocarbons PCE, TCE, and 1,1-DCE, which were reported at concentrations up to 13, 44, and 3.9 μg/L, respectively. Aromatic hydrocarbons, previously observed sporadically in wells BP-3 and BP-4 during the time period from 1991 to 1993, have not been detected at concentrations exceeding the laboratory detection limits during the last six sampling rounds.

Graphs showing VOC concentrations versus time (Figures 7 through 10) were prepared to illustrate the variations in PCE and TCE concentrations over the course of the monitoring program. The graphs were prepared using a logarithmic scale because concentration differences are generally significant when considered in orders of magnitude. Examination of the graphs illustrate that the concentrations of PCE and TCE, while observed to go through minor fluctuations, have been generally consistent over the past six years of groundwater monitoring. The observed concentration variations would be considered "normal", especially given the large variations in groundwater elevations (>30 feet) observed over the course of the monitoring period (Figures 3 through 6). A slight decrease in concentrations was observed in monitoring wells BP-2, BP-3, and BP-4, compared with the previous round of sampling conducted in February 1995. A more significant decrease was observed in the TCE concentration in monitoring well BP-8, which dropped nearly a full order of magnitude from 64 to 8.3 μg/L, compared with the previous round of sampling conducted in February 1995. The distribution of chlorinated hydrocarbons observed during this and the previous three sampling rounds is relatively consistent from well to well, and there does not appear to be a significant difference between the upgradient wells (BP-2,

BP-3, and BP-4) and the downgradient well (BP-8).

In summary, the concentrations and distribution of chlorinated hydrocarbons detected in samples collected from the monitoring wells are consistent with the background concentrations in the region and do not support the theory that the site operations have impacted the underlying aquifer.

If there are any questions regarding this letter report, please feel free to contact either of us at your convenience.

Sincerely,
ATC ENVIRONMENTAL INC.

REGISTERED GEOLOGIST
JON R. LOVEGREEN
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Enclosures:

Table 1: Groundwater Elevation Measurements
Table 2: Laboratory Analytical Results of Groundwater Samples

Figure 1: Site Vicinity Map
Figure 2: Groundwater Gradient and Chemical Analytical Results, November 1996
Figure 3: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-2
Figure 4: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-3
Figure 5: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-4
Figure 6: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-8
Figure 7: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-2
Figure 8: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-3
Figure 9: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-4
Figure 10: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-5

Appendix A: Field Procedures
Appendix B: Groundwater Collection Logs
Appendix C: Laboratory Analytical Reports

cc: Mr. Richard F. Holland, American Electronics, Inc.
Dave Peterson, Esq., Hill Wynne Troop & Meisinger
Mr. Mark Cousineau, Hazard Management Consulting, Inc.

REFERENCES

ATC Environmental Inc., 1996, Monitoring well abandonment letter for the American Electronics Inc. facility, Fullerton, California, prepared on behalf of American Electronics, Inc. for submittal to the RWQCB, dated 6 December 1996.

California Regional Water Quality Control Board (RWQCB), 1996, Review letter dated 20 June 1996.

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS

Well Number	BP-1 [178.14]		BP-2 [183.13]		BP-3 [180.61]		BP-4 [179.89]		BP-5 [177.69]		BP-6 [177.31]		BP-7 [176.96]		BP-8 [177.51]	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
01-10-91	136.68	41.46	141.81	41.32	139.34	41.27	138.50	41.39	136.80	40.89						
01-17-91	136.74	41.40	141.90	41.23	139.34	41.27	138.49	41.40	136.80	40.89						
01-30-91	137.13	41.01	142.30	40.83	139.79	40.82	138.95	40.94	137.31	40.38						
06-21-91			143.19	39.94	140.66	39.95	139.76	40.13	138.09	39.60	137.50	39.81				
07-15-91	138.39	39.75	143.55	39.58	141.05	39.56	140.15	39.74	138.50	39.19	137.93	39.38				
12-19-91	138.05	40.09	143.05	40.08	140.40	40.21	139.34	40.55	137.75	39.94	137.35	39.96				
05-14-92	131.71	46.43	136.50	46.63	134.13	46.48	132.77	47.12	131.34	46.35	130.90	46.41				
08-25-92	131.85	46.29	136.36	46.77	134.18	46.43	133.04	46.85	131.56	46.13	131.09	46.22				
05-10-93	128.15	49.99	132.87	50.26	130.51	50.10	129.05	50.84	127.71	49.98	127.32	49.99				
08-09-93	120.45	57.69	124.93	58.20	122.89	57.72	120.92	58.97	119.92	57.77	119.62	57.69	119.51	57.45	120.13	57.38
02-14-94	116.25	61.89	120.76	62.37	119.75	60.86	117.37	62.52	115.82	61.87	115.45	61.86	115.21	61.75	115.80	61.71
08-23-94	103.80	74.34	108.19	74.94	106.28	74.33	104.56	75.33	103.31	74.38	103.00	74.31	102.82	74.14	103.44	74.07
02-15-95	106.37	71.77	110.80	72.33	108.70	71.91	107.62	72.27	105.94	71.75	105.58	71.73	105.32	71.64	105.89	71.62
11-14-96			117.36	65.77	115.10	65.51	114.24	65.65	---	---	---	---	---	---	112.42	65.09

NOTES:

1) Surveyed top of well casing elevations (shown in brackets below well number) are given in feet relative to mean sea level.
2) Depth = depth-to-groundwater measured in feet below the top of the well casing.
3) Elev. = elevation of groundwater in feet relative to mean sea level.
4) Blank spaces denote that the well was not measured or not yet in existence during the indicated measuring round.
5) "---" indicates that the well was abandoned and is no longer in existence.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
BP-1	04-05-89	<10	290	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	1,500	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	07-02-90	<25	230	<25	<25	<25	<25	NR	<25	<25	89	<25	NA	NR	NR	NA	NA	NA	NA
	08-08-90	<2	520	<2	<2	<2	<2	NR	<2	<5	<2	<2	<0.5	NR	NR	<1	<1	<1	NA
	08-25-92	67	740	<10	<10	<10	14	NR	<10	<10	<10	<10	<10	NR	NR	<10	<10	<20	22
	05-10-93	9	51	<1	<1	<1	<1	1	3	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	7	22	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	6	76	<1	<1	<1	<1	1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	2.8	81	<0.5	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-24-94	3	80	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	5.1	72	<0.5	<0.5	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-2	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	110	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	6	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	50	36	1	<0.3	<0.4	<0.4	NR	<0.6	<0.6	<0.3	<0.8	<0.2	NR	NR	<0.7	<0.2	<0.8	82
	01-30-91	54	40	2.6	<0.3	<0.4	<0.4	NR	6.8	*21*	0.4	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	15
	07-16-91	68	43	1.1	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.4	NR	NR	0.4	<0.2	0.3	70
	12-23-91	29	19	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.4*	<0.3	<0.2	<0.2	NR	NR	0.6	<0.3	0.6	15
	05-15-92	19	21	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	05-10-93	61	35	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-10-93	32	25	1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	15	47	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	13	15	<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	14	33	1.4	<0.5	<0.5	<0.5	<0.5	6.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	10	24	<0.5	<0.5	<0.5	<0.5	<0.5	3.9	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-3	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	40	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	30	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	7.7	6.5	0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	0.7	3.1	32
	01-30-91	75	41	2	<0.3	<0.4	<0.4	NR	6.8	*19*	0.4	1.6	<0.2	NR	NR	<0.2	<0.2	<0.2	25
	07-16-91	32	19	0.4	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.2	NR	NR	0.5	<0.2	<0.2	7.8
	12-23-91	26	31	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.6*	<0.3	<0.2	0.2	NR	NR	0.6	<0.3	0.6	7
	05-15-92	5.4	42	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	05-10-93	52	39	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-10-93	24	23	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	25	20	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	12	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-23-94	12	11	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	26	52	1.9	<0.5	<0.5	<0.5	<0.5	9.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	13	44	<1	<1	<1	<1	<1	3.5	<2	<1	<2	<1	<1	<1	<1	<1	<1	NA
BP-4	01-11-91	2	4	0.4	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	120
	01-30-91	2.1	3.9	<0.3	<0.3	<0.4	<0.4	NR	2.1	20	<0.3	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	85
	07-16-91	9	7	0.3	<0.3	<0.4	<0.4	NR	<0.6	1	<0.3	<0.3	<0.2	NR	NR	<0.2	<0.2	<0.2	17
	12-26-91	4.2	15	0.6	<0.3	<0.4	<0.4	NR	1.2	17	0.6	<0.2	0.2	NR	NR	1.4	<0.3	0.4	10
	05-15-92	15	24	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	4	7.2	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	0.9	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	30
	05-10-93	8	10	<1	<1	<1	<1	<1	2	<2	<1	<1	3	1	3	10	2	9	<0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	8	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	5.4	4.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11-14-96	5	5.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
DUP	11-14-96	4.7	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.94	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-5	01-11-91	35	68	1.3	<0.3	<0.4	<0.4	NR	<0.6	<5	0.8	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	125
	01-30-91	40	85	2.8	<0.3	<0.4	<0.4	NR	3.5	19	1.7	1.3	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	53	65	1.1	<0.3	0.5	<0.4	NR	<0.6	1.1	0.7	<0.2	0.2	NR	NR	0.3	<0.2	<0.2	7.7
	12-23-91	170	260	7.8	<0.3	3.6	3.6	NR	<0.6	11	5.4	<0.2	0.6	NR	NR	1.2	<0.3	0.6	18
	05-15-92	22	190	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	11	34	0.7	<0.5	<0.5	<0.5	NR	1.6	<0.5	1.2	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	88
	05-10-93	8	23	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
DUP	05-10-93	8	24	1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	12	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	02-15-94	7	10	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	08-24-94	5.4	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.9	8.6	<0.5	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	6.8	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-6	06-28-91	7.5	71	<0.3	<0.3	<0.4	0.5	NR	<0.6	0.6	0.3	<0.2	1.2	NR	NR	0.2	0.9	1	86
	07-18-91	6	48	<0.3	<0.3	<0.4	0.4	NR	<0.6	1	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	23
	05-15-92	3	300	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	40	86	1	<0.5	<0.5	<0.5	NR	0.6	<0.5	1	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	53
	05-10-93	12	54	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-09-93	7	9	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.2
	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.9
DUP	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-23-94	6	15	<0.5	<0.5	<0.5	<0.5	<0.5	3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	19	<0.5	<0.5	<0.5	<0.5	<0.5	4.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	7	21	<0.5	<0.5	<0.5	<0.5	<0.5	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-7	07-16-93	3	~~12~~	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	85
	08-10-93	6	7	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-14-94	10	8	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.9
	08-24-94	6.1	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.5	16	<0.5	<0.5	<0.5	<0.5	<0.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-8	07-16-93	9	~~160~~	<1	<1	<1	<1	6	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	200
	08-10-93	7	15	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.8
	02-14-94	7	39	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	4.2	51	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	5.2	64	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	4	8.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
Trip Blnk.	01-11-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.8	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	01-30-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	0.6	21	<0.3	1.6	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	14	<0.3	<0.2	0.2	NR	NR	<0.2	<0.3	<0.4	NA
	08-25-92	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	NA

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	07-16-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-09-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
Lab Blnk.	01-30-91	<0.3	<0.3	<0.3	**0.3**	<0.4	<0.4	NR	<0.6	**5.6**	<0.3	**1.6**	<0.2	NR	NR	**0.5**	<0.2	**0.6**	NA
	06-28-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**0.8**	<0.3	<0.2	**0.5**	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	NR	<0.6	**1.4**	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**1.6**	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.3	<0.4	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**0.4**	<0.3	<0.2	<0.2	NR	NR	**0.5**	<0.3	<0.4	NA
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-17-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-26-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-16-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11-14-96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
MCL		5	5	200	32	5	0.5	6	6	40	N/A	30	0.7	N/A	N/A	100	680	1750	

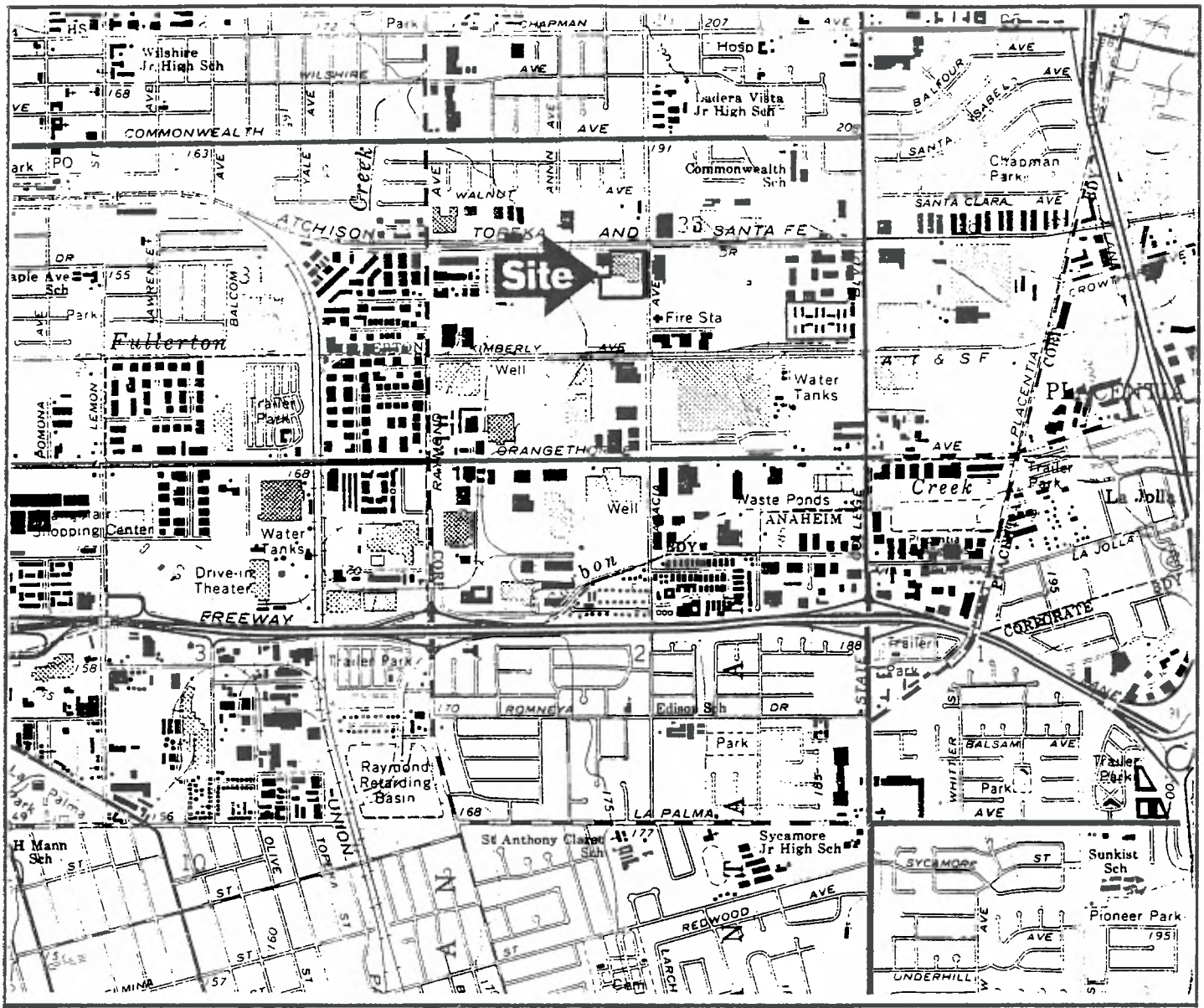
NOTES:

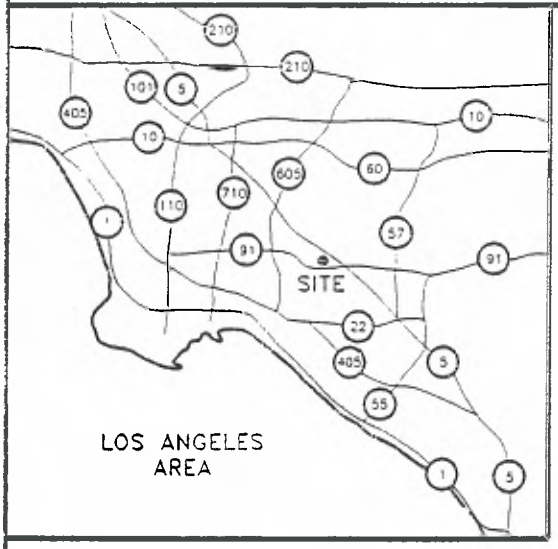
1) Samples were analyzed for volatile organic compounds (VOCs) and turbidity in general accordance with EPA Method Nos. 8021 (8010/8020) and 180.1, respectively.
2) ug/L = micrograms per liter.
3) NTU = nephelometric turbidity unit.
4) PCE = tetrachloroethene.
5) TCE = trichloroethene.
6) TCA = trichloroethane.
7) DCA = dichloroethane.
8) DCE = dichloroethene.
9) Meth. Chloride = methylene chloride.
10) TMB = trimethylbenzene.
11) TBB = tert-butylbenzene.
12) Turb. = turbidity.
13) The less than symbol (<) denores that the compound was not detected at a concentration greater than the indicated laboratory detection limit.
14) Concentrations reported in italics indicate that the compound was also detected in the laboratory method blank for the sample batch.
15) NR = not reported.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLES COLLECTED TO DATE

NOTES (continued):

16) NA = not analyzed for.
17) DUP = duplicate sample.
18) Trip Blnk. = deionized water trip blank sample.
19) Lab Blnk. = laboratory internal quality assurance/quality control blank sample analysis.
20) MCL = State maximum contaminant level for drinking water. State action levels were used for methylene chloride and toluene as MCLs were not available for these compounds.
21) N/A = MCL or action level not available for this compound.





NORTH

0 ½ 1

SCALE, MILES

ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

NOTE

BASE MAP IS TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA–ORANGE CO., 7.5–MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

SITE VICINITY MAP

PROJECT NUMBER 14240.0001 | FIGURE 1

VALENCIA DRIVE

APPROXIMATE LIMIT OF SITE

BP-3
65.51
[13/44]

BP-2
65.77
[10/24]

BUILDING
NTS TECHNICAL SERVICES

BUILDING
AMERICAN ELECTRONICS, INC.

65.1

65.2

65.3

65.4

65.5

65.6

65.7

ASPHALT PARKING LOT

ACACIA STREET

METAL SHED

STORAGE SHED

TRANSFORMER

GRADIENT = 0.001 FT/FT

PROPANE TANK

CONCRETE SLAB

METAL SHED

BP-8
65.09
[4/8.3]

[BP-1]

ASPHALT PARKING LOT

CHEMICAL STORAGE AREA

FENCE

[BP-7]

[BP-5]

BP-4
65.65
[5/5.1]

[BP-6]

FORMER CHEMICAL STORAGE AREA

APPROXIMATE LIMIT OF SITE

EXPLANATION

BP-4 — MONITORING WELL LOCATION AND DESIGNATION.

65.65 — GROUNDWATER ELEVATION GIVEN IN FEET RELATIVE TO MEAN SEA LEVEL (MSL).

[5/5.1] — TETRACHLOROETHENE (PCE) AND TRICHLOROETHENE (TCE) CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).

[BP-1] — ABANDONED MONITORING WELL LOCATION (22 NOVEMBER 1996)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN – PLUMBING," BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960

NORTH

0 80 160

SCALE, FEET

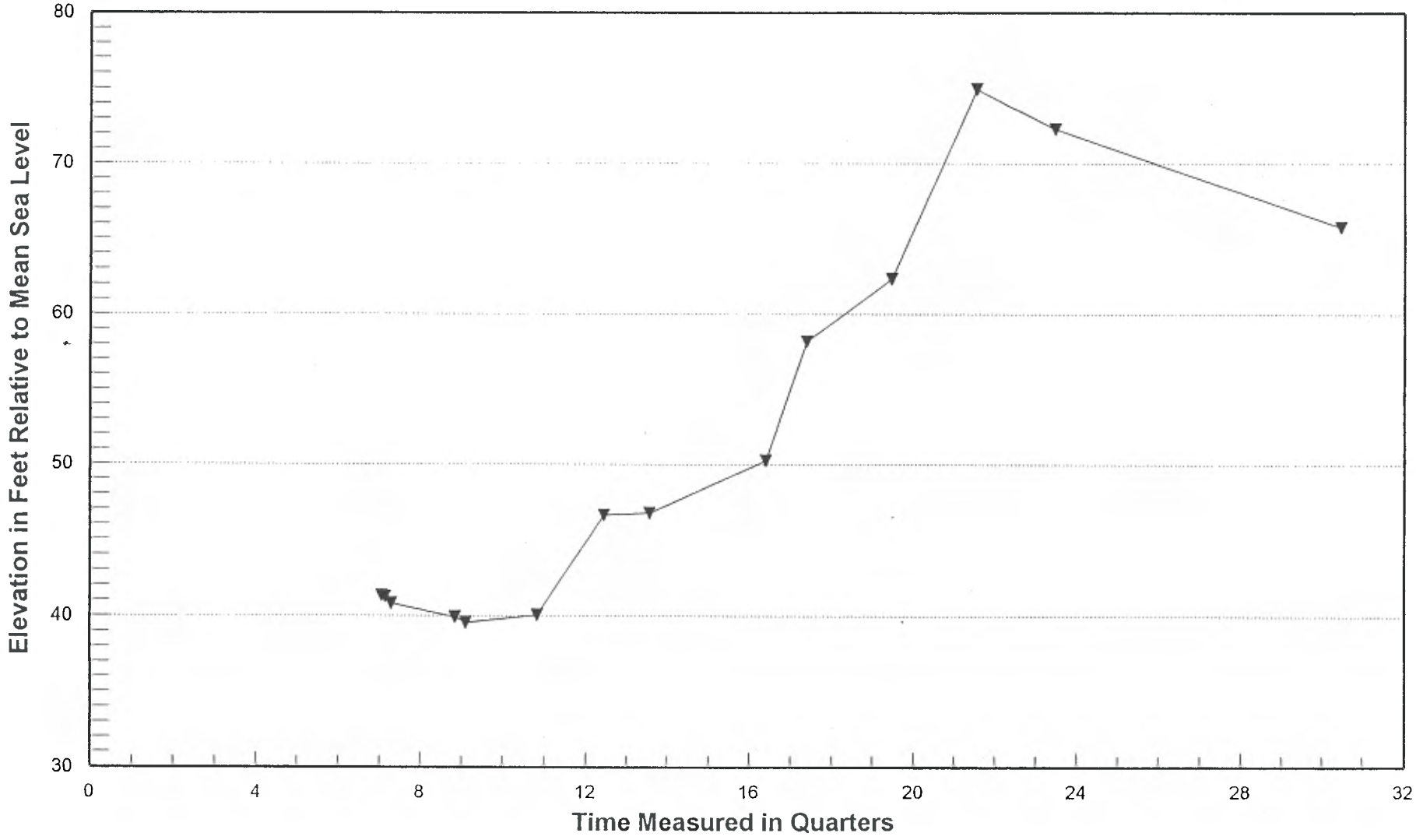
ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

GROUNDWATER GRADIENT AND CHEMICAL ANALYTICAL RESULTS NOVEMBER 1996 SAMPLING ROUND

PROJECT NUMBER 14240.0001 | FIGURE 2

Groundwater Elevation -vs- Time

Monitoring Well BP-2

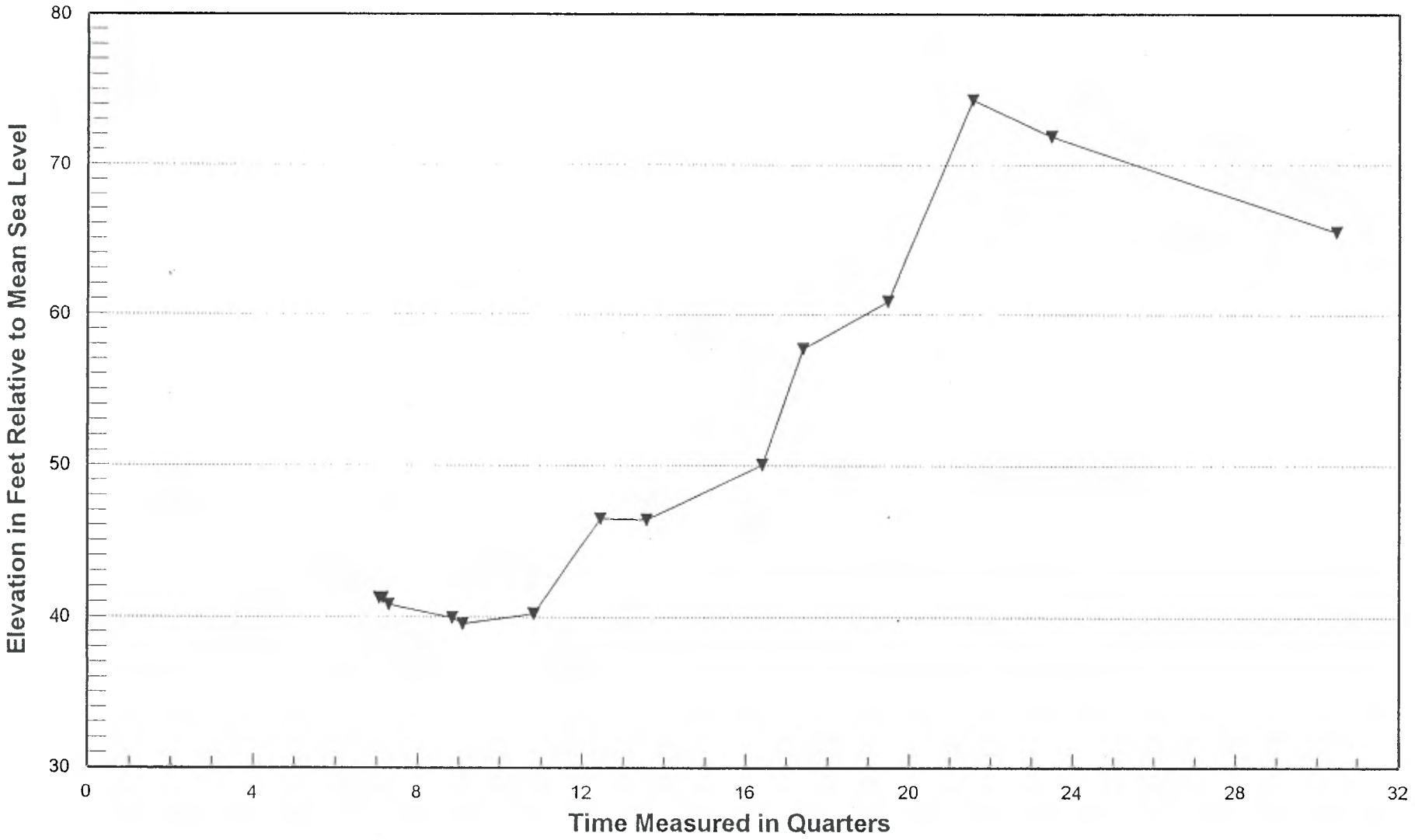


ATC Environmental Inc. AEI - November 1996

Project Number: 14240.0001 Figure: 3

Groundwater Elevation -vs- Time

Monitoring Well BP-3

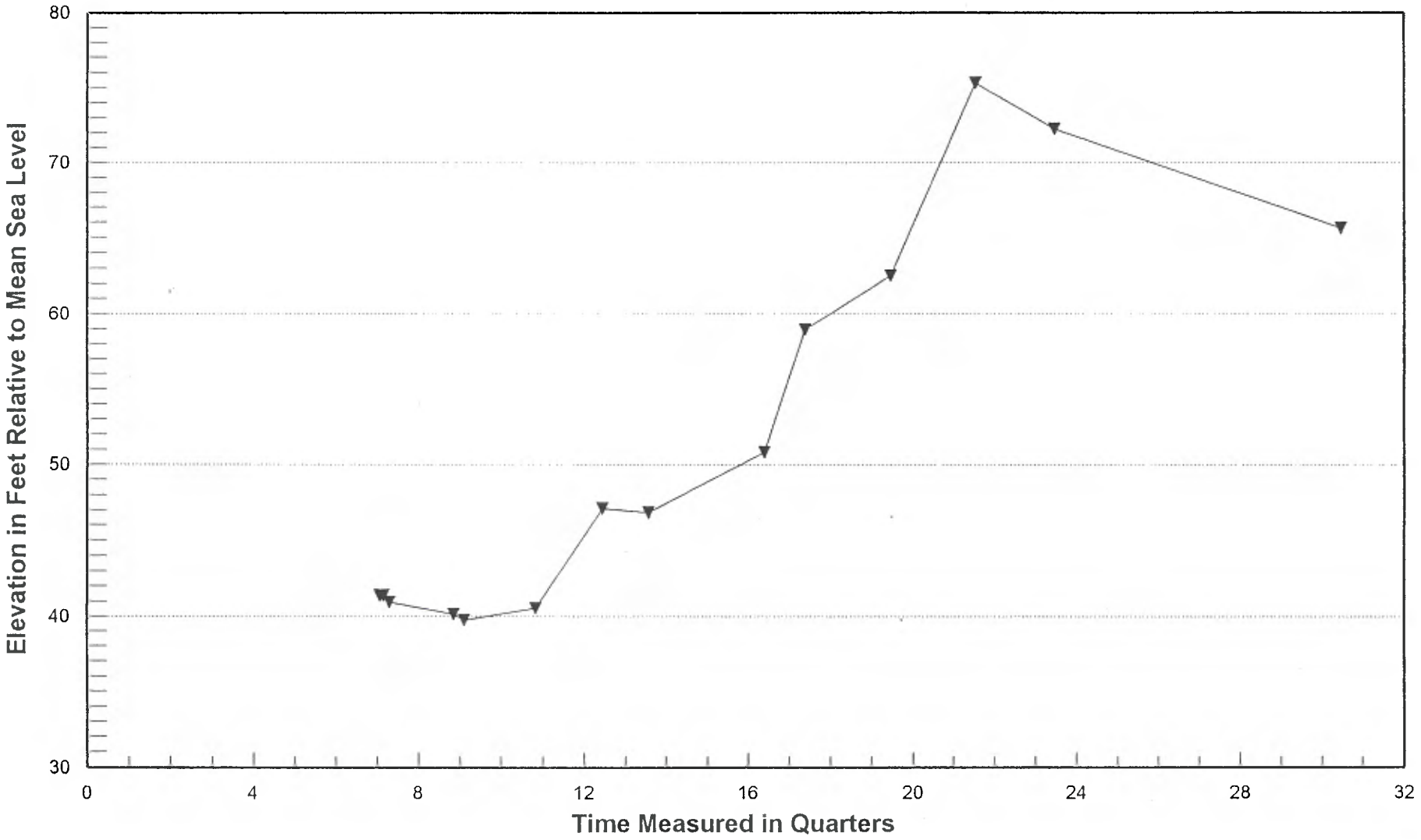


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 4

Groundwater Elevation -vs- Time

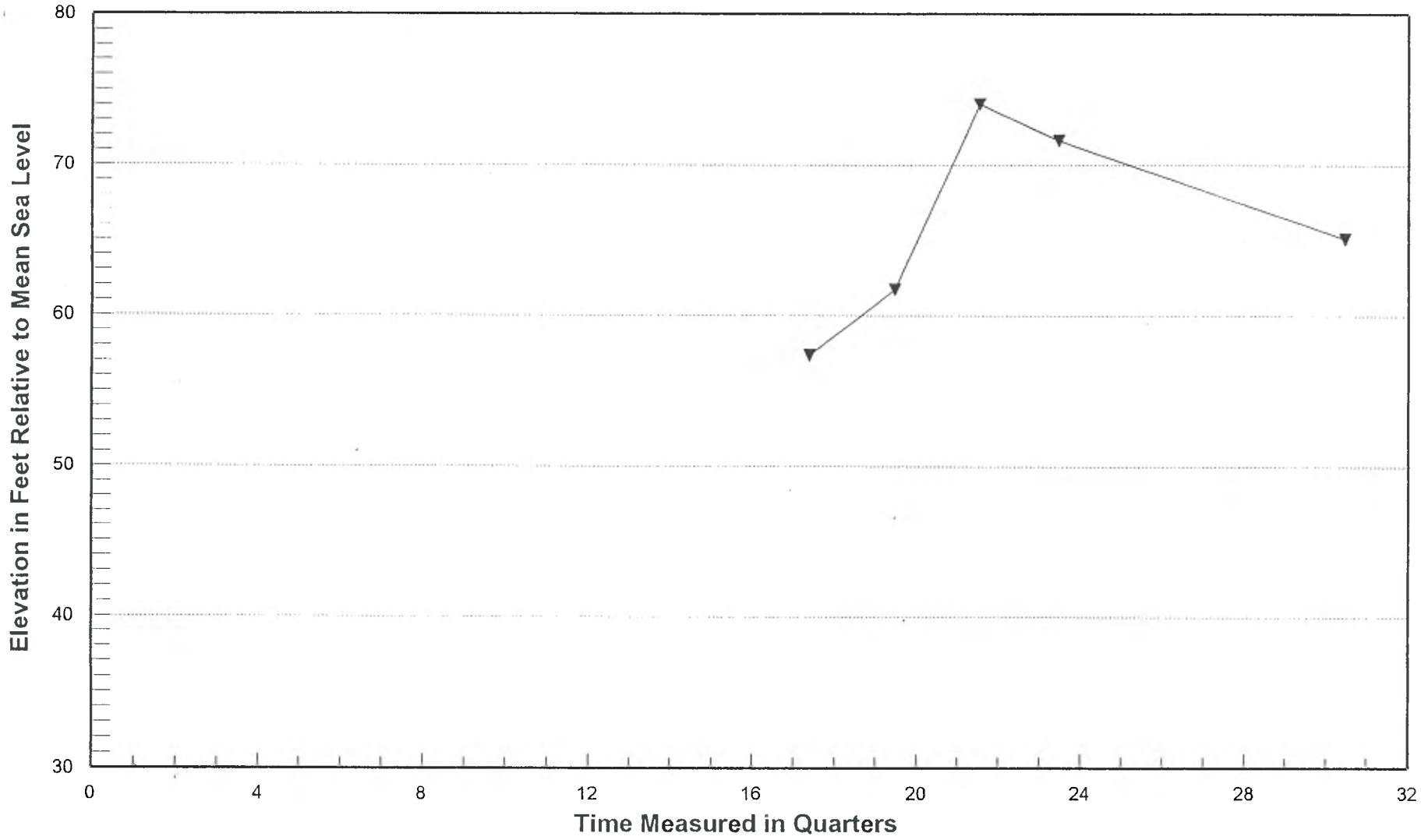
Monitoring Well BP-4



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 5

Groundwater Elevation -vs- Time

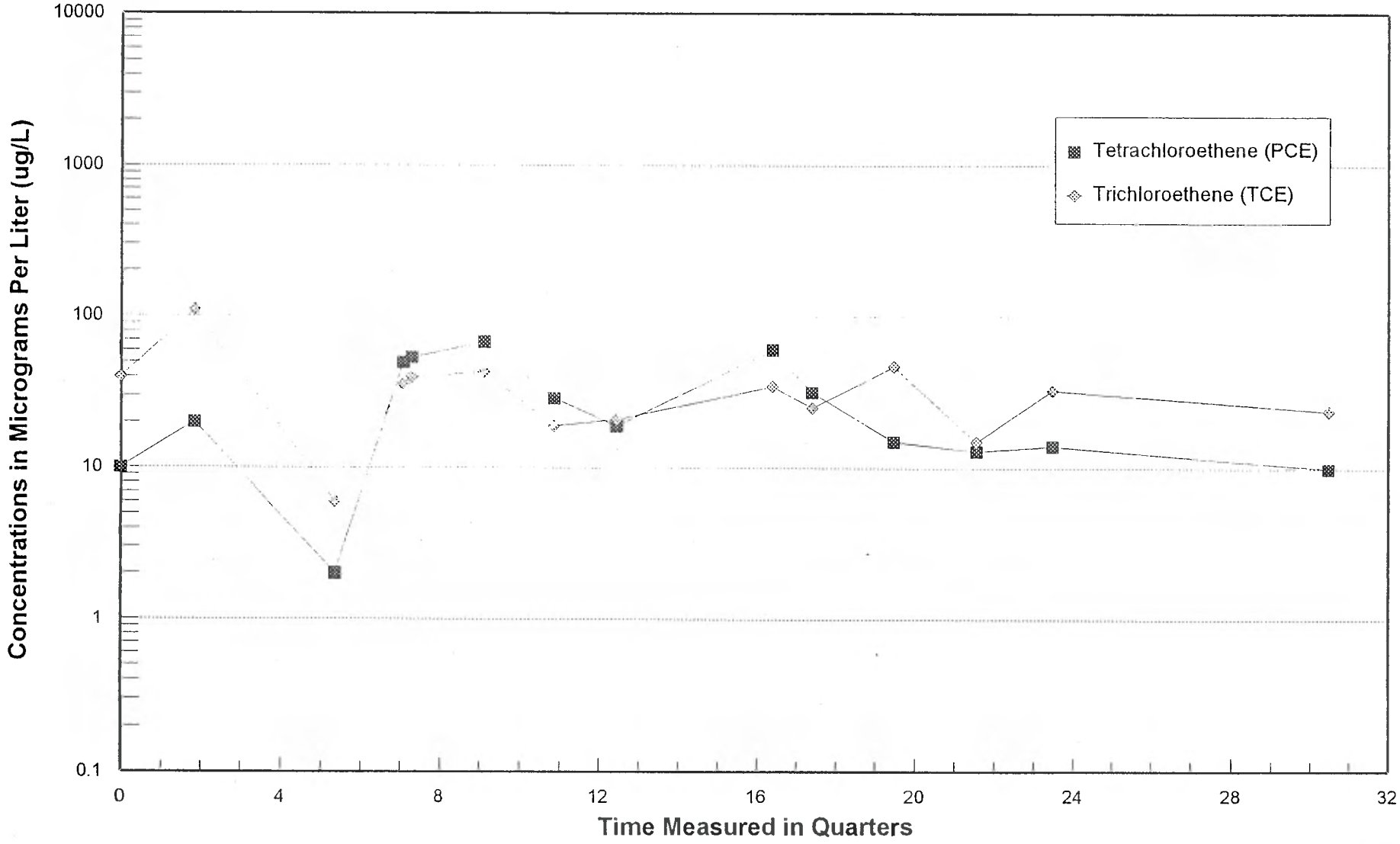
Monitoring Well BP-8



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 6

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-2

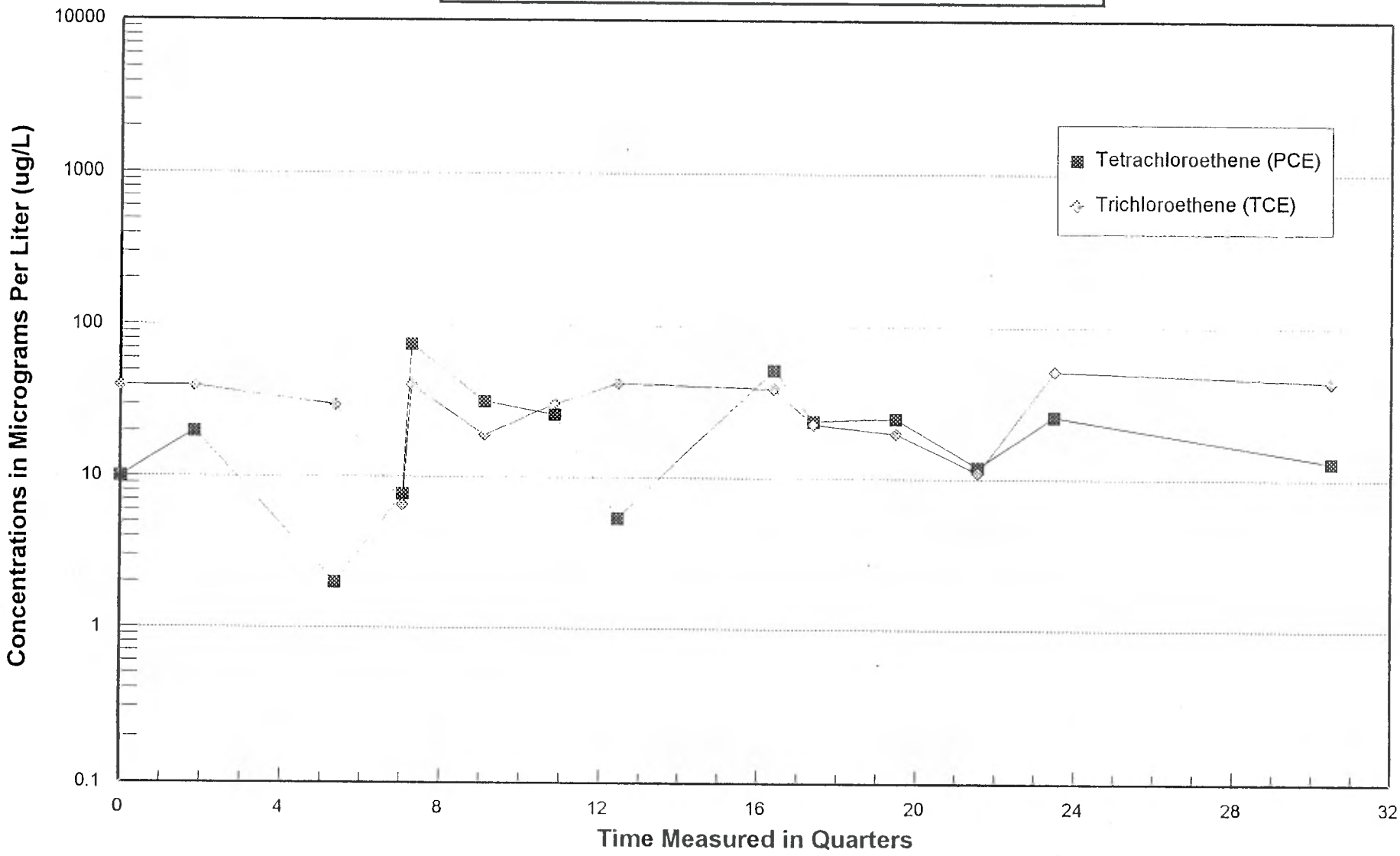


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 7

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-3

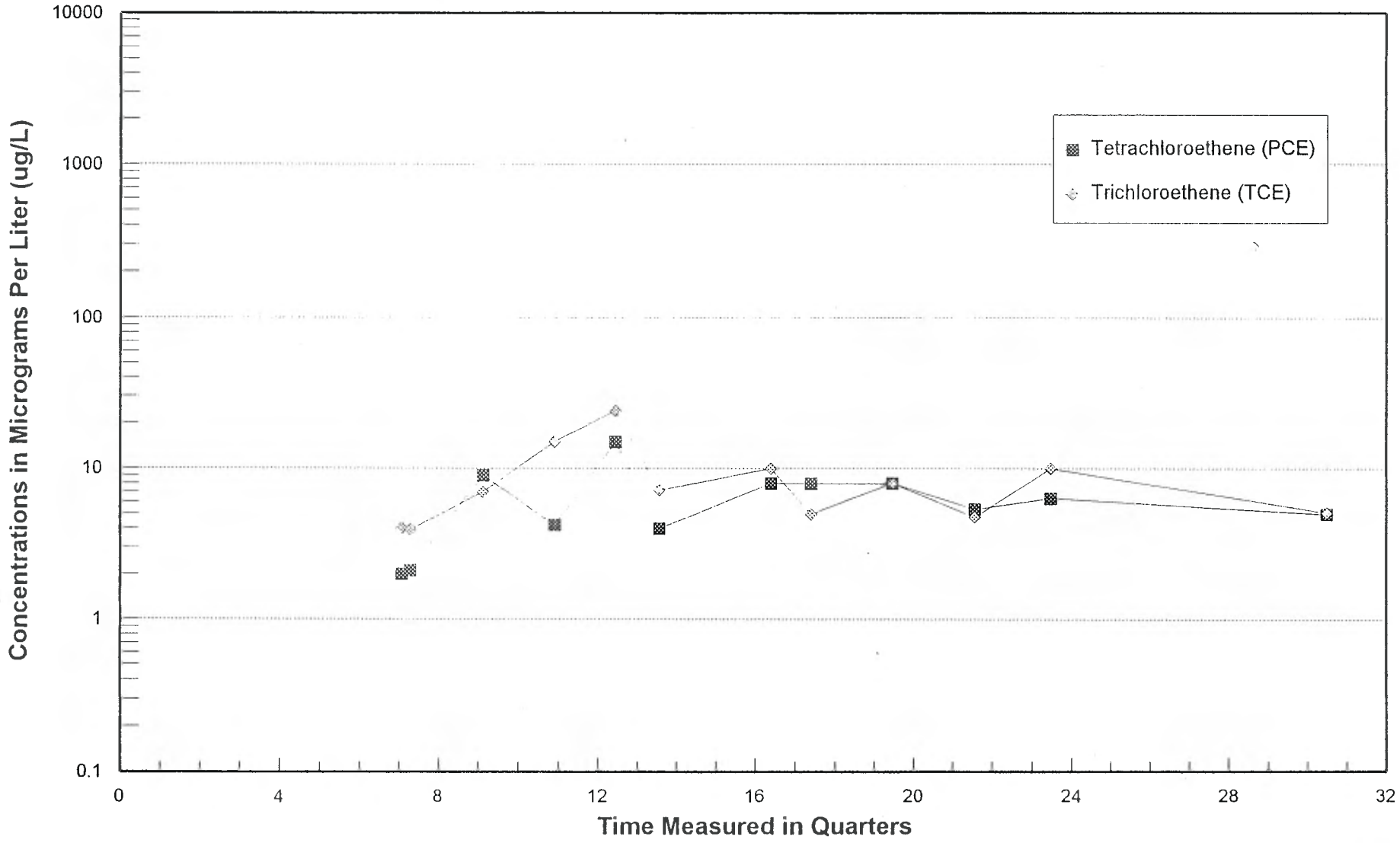


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 8

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-4

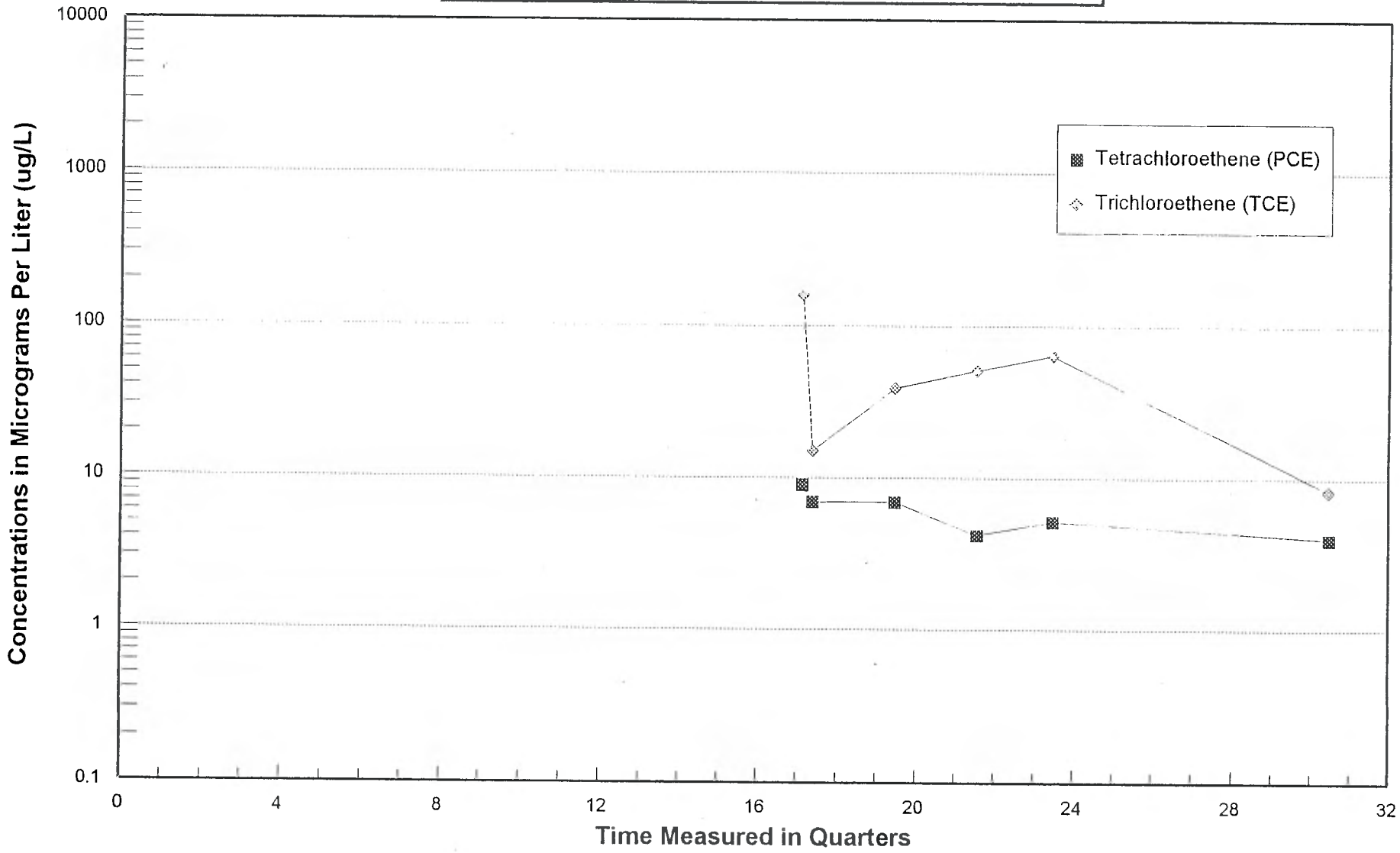


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 9

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-8



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 10

APPENDIX A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

A.1 Groundwater Sample Collection

1. Prior to sampling, the water level in each well was measured to the nearest 0.01 foot using a conductance probe. Prior to each use, the probe was rinsed in a solution of TSP, followed by two tapwater rinses and deionized-water rinse.

2. Prior to sampling, the wells were purged of standing water with a submersible pump. During purging, measurements of pH, temperature, electrical conductivity, and turbidity were collected for the purged water. Samples were collected from the wells when the measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and up to three casing volumes of water were purged from the wells (where possible).

3. The water purged from the wells was placed in Department of Transportation (DOT)-approved 55-gallon drums.

4. The samples were collected using a Grundfos submersible sampling pump, at a flow rate of approximately 100 milliliters per minute. The pump was washed in a laboratory detergent solution and triple-rinsed with deionized water prior to being used and between each well.

A.2 Groundwater Sample Handling

1. The samples collected for chemical analysis were placed in Ziploc bags and stored in an ice chest cooled using ice to a temperature of approximately 40 degrees Fahrenheit.

2. The samples collected for chemical analysis were delivered to the laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory were documented using chain-of-custody procedures.

APPENDIX B

GROUNDWATER COLLECTION LOGS

Groundwater Collection Log

Well Number: BP-2
Sample Number BP-2
Date of Collection: 15-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 115.10
Top of Casing Elevation: 180.61
Groundwater Elevation: 65.51

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
09:48	0	7.20	1.15	18.4	---	Clear, no odor.
09:52	10	6.96	1.41	20.1	---	" "
09:56	20	6.96	1.43	20.4	---	" "
09:59	30	6.97	1.45	20.5	---	" "
10:03	40	6.97	1.45	20.5	---	" "
10:07	50	6.98	1.46	20.5	---	" "
10:11	60	6.98	1.46	20.5	---	" "
10:15	70	6.99	1.47	20.5	---	" "
10:19	80	6.99	1.47	20.5	---	" "
10:23	90	6.99	1.47	20.5	---	" "
10:27	100	6.99	1.47	20.5	---	" "
10:31	110	6.99	1.48	20.5	---	" "
10:35	120	7.01	1.48	20.5	---	" "
10:38	130	7.01	1.48	20.5	---	" "
10:42	140	7.01	1.48	20.5	---	" "
10:46	150	7.01	1.48	20.5	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-3
Sample Number BP-3
Date of Collection: 14-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 115.10
Top of Casing Elevation: 180.61
Groundwater Elevation: 65.51

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
02:08	0	7.20	1.27	19.3	---	Clear, no odor.
02:13	10	7.03	1.47	20.1	---	" "
02:17	20	7.05	1.45	20.3	---	" "
02:21	30	7.01	1.46	20.4	---	" "
02:26	40	7.01	1.48	20.3	---	" "
02:30	50	7.09	1.47	20.3	---	" "
02:35	60	7.06	1.47	20.2	---	" "
02:39	70	7.05	1.47	20.2	---	" "
02:44	80	7.06	1.46	20.3	---	" "
02:48	90	7.07	1.45	20.1	---	" "
02:51	100	7.05	1.45	20.3	---	" "
02:56	110	7.06	1.44	20.3	---	" "
03:01	120	7.04	1.44	20.3	---	" "
03:05	130	7.06	1.44	20.2	---	" "
03:09	140	7.09	1.44	20.2	---	" "
03:13	150	7.11	1.43	20.1	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-4
Sample Number: BP-4 & BP-A
Date of Collection: 15-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 114.24
Top of Casing Elevation: 179.89
Groundwater Elevation: 65.65

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
07:52	0	6.15	1.22	17.2	---	Clear, no odor.
07:57	10	6.59	1.22	19.6	---	" "
08:00	20	6.76	1.20	19.9	---	" "
08:04	30	6.87	1.19	19.9	---	" "
08:07	40	6.90	1.19	20.0	---	" "
08:12	50	6.93	1.19	19.9	---	" "
08:16	60	6.96	1.18	19.8	---	" "
08:20	70	6.96	1.18	19.8	---	" "
08:24	80	6.97	1.17	19.9	---	" "
08:28	90	6.99	1.17	20.0	---	" "
08:31	100	7.02	1.19	20.0	---	" "
08:35	110	7.02	1.17	20.0	---	" "
08:39	120	7.04	1.17	20.0	---	" "
08:43	130	7.07	1.17	19.7	---	" "
08:47	140	7.06	1.17	19.9	---	" "
08:50	150	7.14	1.18	19.6	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-8
Sample Number BP-8
Date of Collection: 14-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 111.77
Top of Casing Elevation: 177.51
Groundwater Elevation: 65.74

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
10:50	0	5.95	1.21	19.3	---	Clear, no odor.
10:55	10	6.70	1.18	20.0	---	" "
10:59	20	6.89	1.17	20.2	---	" "
11:03	30	6.94	1.17	20.2	---	" "
11:09	40	7.00	1.18	20.2	---	" "
11:12	50	7.03	1.24	20.3	---	" "
11:16	60	7.04	1.18	20.3	---	" "
11:20	70	7.06	1.18	20.1	---	" "
11:24	80	7.09	1.18	20.2	---	" "
11:29	90	7.11	1.18	20.2	---	" "
11:32	100	7.07	1.18	20.3	---	" "
11:36	110	7.12	1.18	20.2	---	" "
11:40	120	7.13	1.18	20.2	---	" "
11:44	130	7.14	1.19	20.2	---	" "
11:48	140	7.15	1.19	20.1	---	" "
11:53	150	7.23	1.19	20.1	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
1014 E. Cooley Dr., Suite A, Colton CA 92324 (909) 370-4667 FAX (909) 370-1046
16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-3
Lab Number: FK02815

RECEIVED

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	1.0	N.D.	trans-1,3-Dichloropropene	1.0	N.D.
Bromobenzene	1.0	N.D.	Ethylbenzene	1.0	N.D.
Bromochloromethane	1.0	N.D.	Hexachlorobutadiene	1.0	N.D.
Bromodichloromethane	1.0	N.D.	Isopropylbenzene	1.0	N.D.
Bromoform	1.0	N.D.	p-Isopropyltoluene	1.0	N.D.
Bromomethane	2.0	N.D.	Methylene chloride	2.0	N.D.
n-Butylbenzene	1.0	N.D.	Naphthalene	1.0	N.D.
sec-Butylbenzene	1.0	N.D.	n-Propylbenzene	1.0	N.D.
tert-Butylbenzene	1.0	N.D.	Styrene	1.0	N.D.
Carbon tetrachloride	1.0	N.D.	1,1,1,2-Tetrachloroethane	1.0	N.D.
Chlorobenzene	2.0	N.D.	1,1,2,2-Tetrachloroethane	1.0	N.D.
Chloroethane	5.0	N.D.	**Tetrachloroethene**	**1.0**	**13**
2-Chloroethylvinyl Ether	5.0	N.D.	Toluene	1.0	N.D.
Chloroform	1.0	N.D.	1,2,3-Trichlorobenzene	1.0	N.D.
Chloromethane	2.0	N.D.	1,2,4-Trichlorobenzene	1.0	N.D.
2-Chlorotoluene	1.0	N.D.	1,1,1-Trichloroethane	1.0	N.D.
4-Chlorotoluene	1.0	N.D.	1,1,2-Trichloroethane	1.0	N.D.
Dibromochloromethane	1.0	N.D.	**Trichloroethene**	**1.0**	**44**
1,2-Dibromo-3-chloropropane	1.0	N.D.	Trichlorofluoromethane	1.0	N.D.
1,2-Dibromoethane	1.0	N.D.	1,2,3-Trichloropropane	1.0	N.D.
Dibromomethane	1.0	N.D.	1,2,4-Trimethylbenzene	1.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.	1,3,5-Trimethylbenzene	1.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.	Vinyl chloride	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.	o-Xylene	1.0	N.D.
Dichlorodifluoromethane	1.0	N.D.	m,p-Xylenes	2.0	N.D.
1,1-Dichloroethane	1.0	N.D.			
1,2-Dichloroethane	1.0	N.D.			
1,1-Dichloroethene	**1.0**	**3.5**			
cis-1,2-Dichloroethene	1.0	N.D.			
trans-1,2-Dichloroethene	1.0	N.D.			
1,2-Dichloropropane	1.0	N.D.			
1,3-Dichloropropane	1.0	N.D.			
2,2-Dichloropropane	1.0	N.D.			
1,1-Dichloropropene	1.0	N.D.			
cis-1,3-Dichloropropene	1.0	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection. Due to matrix effects and/or other factors, the sample required dilution. Detection limits for this sample have been raised by a factor of 2.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	98%
a,a,a-Trifluorotoluene	98%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-8
Lab Number: FK02816

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**4.0**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**8.3**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**1.1**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Method Blank

Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996
Matrix: Water

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	N.D.			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	101%
a,a,a-Trifluorotoluene	100%

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Del Mar Analytical

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16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-184
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-133

MS/MSD DATA REPORT

EPA METHOD: 8021
Matrix: Water

Date: 11/25/96

Sample #: BLANK

Batch #: FK25111W

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	10	9.9	9.9	99%	99%	0.57%	99%
Chloroform	0	10	9.7	8.7	97%	87%	12%	92%
1,1-Dichloroethane	0	10	9.0	9.1	90%	91%	1.2%	91%
1,2-Dichloroethane	0	10	9.6	9.7	96%	97%	1.4%	97%
1,1-Dichloroethene	0	10	8.7	8.9	87%	89%	1.7%	88%
Tetrachloroethene	0	10	9.3	9.2	93%	92%	0.92%	92%
Toluene	0	10	10	10	101%	101%	0.058%	101%
Trichloroethene	0	10	9.2	9.4	92%	94%	1.6%	93%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

TC L...ROI...NTA... ...C.

Chain of Custody

ATC ENVIRONMENTAL INC.

17321 Irvine Blvd.
Tustin, CA 92780
(714) 734-0303 • Fax (714) 734-0510

Project Name: American Electronics
Project Number: 14240.0001
Project Manager: Will Weaver

Laboratory Name:

Method of Shipment: HAND DEL

Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270					
BP-3			11/14		X		X	X						X						
BP-8			11/14		X		X	X						X						

Remarks:
- Please FAX results to Will Weaver at 714-734-0510

INTACT / COOL

Turnaround Time:
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

	Date	Time		Date	Time
Relinquished by sampler: Paul Roberts	11/15/96	8:25	Received by:	11/15	8:25
Relinquished by:	11/15	9:52	Received by:		
Relinquished by:	Date	Time	Received by laboratory:	11/15	9:52

Del Mar Analytical

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-2
Lab Number: FK02812

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**10**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**24**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**3.9**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D			
1,3-Dichloropropane	0.50	N.D			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	100%
a,a,a-Trifluorotoluene	101%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-4
Lab Number: FK02813

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**5.0**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**5.1**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**1.1**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	97%
a,a,a-Trifluorotoluene	99%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-A
Lab Number: FK02814

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.
Bromobenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
n-Butylbenzene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
2-Chlorotoluene	0.50	N.D.
4-Chlorotoluene	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.
Dibromomethane	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
Dichlorodifluoromethane	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	**0.50**	**0.94**
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D
1,3-Dichloropropane	0.50	N.D.
2,2-Dichloropropane	0.50	N.D.
1,1-Dichloropropene	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Ethylbenzene	0.50	N.D.
Hexachlorobutadiene	0.50	N.D.
Isopropylbenzene	0.50	N.D.
p-Isopropyltoluene	0.50	N.D.
Methylene chloride	1.0	N.D.
Naphthalene	0.50	N.D.
n-Propylbenzene	0.50	N.D.
Styrene	0.50	N.D.
1,1,1,2-Tetrachloroethane	0.50	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	**0.50**	**4.7**
Toluene	0.50	N.D.
1,2,3-Trichlorobenzene	0.50	N.D.
1,2,4-Trichlorobenzene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	**0.50**	**4.7**
Trichlorofluoromethane	0.50	N.D.
1,2,3-Trichloropropane	0.50	N.D.
1,2,4-Trimethylbenzene	0.50	N.D.
1,3,5-Trimethylbenzene	0.50	N.D.
Vinyl chloride	0.50	N.D.
o-Xylene	0.50	N.D.
m,p-Xylenes	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Method Blank

Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996
Matrix: Water

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	N.D.			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	101%
a,a,a-Trifluorotoluene	100%

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MS/MSD DATA REPORT

EPA METHOD: 8021
Matrix: Water

Date: 11/25/96

Sample #: BLANK

Batch #: FK25111W

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	10	9.9	9.9	99%	99%	0.57%	99%
Chloroform	0	10	9.7	8.7	97%	87%	12%	92%
1,1-Dichloroethane	0	10	9.0	9.1	90%	91%	1.2%	91%
1,2-Dichloroethane	0	10	9.6	9.7	96%	97%	1.4%	97%
1,1-Dichloroethene	0	10	8.7	8.9	87%	89%	1.7%	88%
Tetrachloroethene	0	10	9.3	9.2	93%	92%	0.92%	92%
Toluene	0	10	10	10	101%	101%	0.058%	101%
Trichloroethene	0	10	9.2	9.4	92%	94%	1.6%	93%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS: ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD: ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference: ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

ATC ENVIRONMENTAL INC.

Chain of Custody

ATC ENVIRONMENTAL INC.
17321 Irvine Blvd.
Tustin, CA 92780
(714) 734-0303 • Fax (714) 734-0510

Project Name: American Electronics
Project Number: 14240.0001
Project Manager: Will Weaver

Laboratory Name: Del Mar Analytical
Method of Shipment: Delivery
Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270
BP-2			11-15		X		X	X						X	
BP-4			↓		↓		↓	↓						↓	
BP-A			↓		↓		↓	↓						↓	
									-2 x 40 mL VOAs				per sample		

Remarks:
- Fax results to Will Weaver at 714-734-0510

intact
cool

Turnaround Time
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

Relinquished by sampler	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory
	11-15-96	3:40	11/15/96 3:40

PROFESSIONAL CIVIL ENGINEER
CALIFORNIA
ARIZONA
NEVADA
NEW MEXICO
UTAH

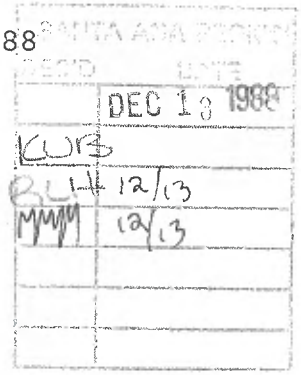
PROFESSIONAL ELECTRICAL ENGINEER
CALIFORNIA

RAY E. LEWIS
CONSULTING ENGINEERING

459 HOLLY STREET
LAGUNA BEACH, CA 92651
(714) 497-1580

DIPLOMAT AAEE
FELLOW ASCE
MEMBER WPCF
AMERICAN ARBITRATION ASSOCIATION

December 13, 1988



California Regional Water
Quality Control Board
6809 Indiana Avenue
Suite 200
Riverside, CA 92506

Attention: Mr. Robert Holub, Chief
Groundwater Investigation Section

Subject: American Electronics, Inc.

Dear Sir:

In reference to your letter of October 26, 1988 to Mr. R. F. Holland, President of American Electronics, located in Fullerton, the undersigned has been retained by the Company to provide the information requested by you to determine the source of the groundwater contamination affecting some of the wells in this geographic area. In the development of the proposed work plan presented herein, this office has contacted representatives of the Company, the Orange County Water District, the City of Fullerton, and the County Sanitation Districts of Orange County. Meeting with these representatives we have learned the following:

American Electronics

A brief inspection of the facilities revealed a very clean and professionally run operation. Copies of the Company's hazardous materials communications program were obtained which include a listing of all hazardous materials used in the operations. Copies are included in Attachment A to this letter report. Copies of recent hazardous waste manifests are also included as Attachment B.

Orange County Water District

The Water District is in their final phase of a soil vapor detection program to assist in the determination of the source of contamination in this geographic area. This final phase is scheduled to be completed by mid-January, 1989 with their report to be completed by the first part of February.

City of Fullerton

Copies of the City's well logs were obtained to determine groundwater depths in the vicinity of American Electronics. Copies of well logs are included herewith as Attachment C.

County Sanitation Districts of Orange County

This facility is under permit to the Sanitation Districts (Permit No. 2-1-140) for industrial discharges to the sanitary sewer system. This facility is in compliance with the District's permit requirements.

Proposed Work Plan

Enclosed, as Attachment D, is a plot plan of the plant facilities. Indicated on this plot plan is the location of three monitoring wells as suggested by you. To meet your requirements it is proposed that the following be implemented:

1. Construct three monitoring wells at the locations shown and in accordance with the attached well construction detail plan.

2. Soil samples be taken and analyzed by Associated Laboratories of Orange, CA. It is recommended that samples be taken at depths of 2', 5', 10', 15', 20', 50', and 100' below final grade at each location during the boring operation for the monitoring well installation. EPA analytical methods 8010 and 8020 will be performed on each sample taken for a total of 21 samples for the three borings.

3. At the conclusion of the well installation, groundwater samples will be taken and also analyzed using EPA method 624.

4. With assistance from your staff, a self monitoring program will be instituted to monitor the quality of the groundwater in the area.

Please review this suggested work plan and, if approved by your office, arrangements will be made to implement this program. If you have any questions, please do not hesitate to call.

Very truly yours,

Ray E. Lewis, P.E.

REL:hjb
cc: R. F. Holland
American Electronics

ATTACHMENT A

AMERICAN ELECTRONICS, INC.

HAZARDOUS MATERIALS COMMUNICATION PROGRAM

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME / CHEMICAL NAME	COMMON NAME / A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
#197 ROSIN FLUX	SOLDER FLUX	ROSIN 37%	ISOPROPAL ALCOHOL 56%		1 PT	5 GA	VAR.	PL	SOLDERING	FL	02/12/87	230
#504 WIRE STRIPPER	LONCO WIRE STRIPPER	METHYLENE CHLORIDE 67%	PHENOL 17%	AMMONIA HYDOXIDE	1 QT	1 GA	A-1	8	WIRE STRIPPER	OR	02/09/87	76
#86 BLACK/WHITE INK(MENKE	#86 BLACK/WHITE INK	NAPHTHENIC ACID,COBALT 3%	NEODECANOIC ACID 1%	METHYL ETHYL KETOXIM <1%	1 QT	1 QT	B-9	11	IDENTIFICATION	CL	02/09/87	110
#9 WHITE STAMP PAD INK	SAME	DIACETONE ALCOHOL 53%	RESINS 20 %	PIGMENTS 27.7%	1 PT	1 QT	B-7	11	IDENTIFICATION	CL	02/12/87	303
1.1,1-TRICHLOROETHANE"SM"	RHO-COTE 7502 &2204	1,1,1TRICHLOROETHANE			5 GA	55 GA	B-22	6	PAINT THINNER	OR	03/24/87	16
1000-02 SYNTHETIC REDUCER	SYNTHETIC REDUCER	TOLUENE 10%	VM&P NAPHTHA 55%	ISOBUTYLE ALCOHOL	5 GA	55 GA	A-22	6	PAINT THINNER	FL	02/09/87	48
1000-22A/C PRIMER REDUCER	ACID ETCH REDUCER	ISOBUTYL ALCOHOL 8.8%	ISOPROPYL ALCOHOL 33%	PHOSPHORIC ACID 5.7%	1 PT	5 GA	J-17	11	PAINT	FL	06/12/87	58
10421 SOLVENT.VARNISH	VARNISH SOLV.HEMETIC	XYLENE 75%	*2-ETHOXYETHANOL 25%		NA	1 GA	B-2	11	POTTING/ENCAPSU	FL	02/09/87	101
1100 SERIES BAKING ENAMEL	1108 BAKE ENAMAL	N-BUTYL ALCOHOL 5%	METHYL AMYL KETONE 9%	TRICHLOROETHANE 15%	5 GA	50 GA	J-17	11	PAINT	FL	06/12/87	59
12-0-12 INSUL.VARNISH	PEDIGREE 12-0-12VARN	AROMATIIC HYDROCARBON 10%	ALIPHATIC HYDROCARBOM 40%		1 GA	2 GA	A,B-2	11	POTTING/ENCAPSL	FL	02/09/87	99
1200 SOLVENT	#2 MERRITONE INK SOL	ETHYLENE GLYCOL ETHER			1 QT	1 QT	B-9	11	IDENTIFICATION	CL	02/09/87	109
1200-08 LACQUER THINNER	1200 LAQUER THINNER	TOLUENE 25%	METHANOL ALCOHOL 25.75%	M.E.K. 30%	5 GA	55 GA	A-22	6	PAINT THINNER	FL	02/09/87	49
1200/1204PRIME COAT-CLEAR	RTV PRIMER 1200/1204	VM&P NAPHTHA 65-85%	ORGANOSILICATE 5%	TOLUENE 19%	4 OZ	1 QT	B-3	8	GLUEING/SEALING	FL	02/12/87	311
12412 PALADIN SATIN BLACK	PALADIN BLACK PAINT	2-BUTOXY ETHANOL 2.3%	2-PROPANOL 46.3%	ETHEL ALCOHOL 5.1%	1 GA	4 GA	J-17	11	PAINTING	FL	02/12/87	315
1262 ACTIVATOR	ORGANIC ACID	NAPHTHALENE CHLORIDE	FORMIC ACID		>1 PT	NA	M-7	PL	POTTING	CO	02/09/87	36
1600-01/02 URETHANE REDUC	1600 POLY.REDUCER	N-BUTYL ACETATE 47%	METHYL AMYL KETONE 9%	M.E.K.24%	1 GA	20 GA	J-17	11	PAINT	FL	06/12/87	60
2000 SERIES LAQUER PAINT	2000 LAQUER PAINT	TOLUENE 15%	ISOBUTYL ACETATE 10%	ISOPROPANOL <5%	1 GA	10	J-17	11	PAINT	FL	02/09/87	50
23%BOWL CLEANER(#2071)	KLEEN WHITE	HYDROCHLORIC ACID 23%	NONIONIC SURFACTANT		1 QT	5 GA	5 GA	PL	JANITORIAL	CO	02/10/87	206
300 SERIES DEVELOPER	SHARP COPIER DEVELOP	BASE METAL IRON POWDER93%	TONER 7%		1 QT	2 GA	VAR	11	PHOTO COPY	CL	02/12/87	244
300 SERIES TONER(SF-70)	SHARP COPIER TONER	VEHICLE ?? 90%	PIGMENTS 10%		1 QT	2 GA	VAR	11	PHOTO COPY	NR	02/11/87	243
3112 RTV SILICONE RUBBER	DOW 3112RTV SILICONE	NONE			1 LB	1 LB	C-6	11	POTTING/ENCAPSL	NR	02/09/87	149
3140 RTV COATING	DC 3140 RTV SILICONE	NONE			NA	5 OZ	H-6	13	SEALANT	NR	03/16/87	307
3145 RTV COATING	DC 3145 RTV SEALANT	NONE									03/16/87	308
340 HEAT SINK COMPOUND	SAME	NONE			2 OZ	1 PT	VAR	11	CIRC.BRD ASSY.	NR	02/12/87	309
4000 SERIES ALKYD ENAMAL	4000 WATER REDUC.ENA	BUTOXY ETHANOL 16%	N-BUTYL ALCOHOL 4%	BUTYL CELLOSOLVE	1 GA	10	J-17	11	PAINT	FL	06/12/87	51
463-3-8.EPOXY FLAT BLACK	EPOXY FLAT BLACK	2-ETHOXETHYL ACETATE	N-BUTYL ACETATE 10%	2-BUTOXY ETHYNOL 12%	1 GA	20 GA	J-17	11	PAINT	FL	06/12/87	63
463-7-26 EPOXY POLYMIDE	EPOXY PRIMER BASE YL	2-ETHOXYETHYL ACETATE5-10	TOLUENE 5-10%	2-BUTOXY ETHYNOL <5%	NA	2 GA	K-17	11	PAINTING	FL	03/03/87	129
4860 ZINC CHROMATE PRIMER	ZINC CHROMATE PRIMER	BUTYL ALCOHOL 23%	ISOPROPYL ALCOHOL 58%	ZINC CHROMATE 8.8%	NA	2 GA	J-17	11	PAINT	FL	06/12/87	57
50-700R CAT-L-INK BLACK	HYSOL BLACK INK	GLYCOL ESTER 80-85%	XYLOL(XYLENE) 10-15%	BIS A EPICHLORO POLYMER	1 QT	1 QT	B-9	11	IDENTIFICATION	NA	02/09/87	95
5008 BAKE GLOSS ENAMAL	SAME	TOLUENE 5%	VM&P NAPHTHA 20%	TITANIUM DIOXIDE 25%	NA	1 GA	J-7	11	PAINT	FL	06/12/87	304
5302 A/B EPOXY RESIN	EPOXYLITE,5302 EPOXY	PHENOLFORMALDEHYDE NOVALC	EPOXY BLEND	NA	NA	4 OZ	B-3	9	POTTING/SEALING	NR	03/02/87	158
6100&6300 POLYURATHANE I	POLYURETHANE PAINT	ACRYLIC/POLYESTERS 38%	TOLUENE 6%	CELLOSOLVE ACETATE 13%	1 GA	10	J-17	11	PAINT	FL	06/12/87	52
61SG POLYURATHANE CATLYST	#61 POLY.PAINT CAT.				1 QT	1 GA	J-17	11	PAINT	OR	06/12/87	53
63SG POLYURATHANE CATLYST	#63 POLY.PAINT CAT.				1 QT	1 GA	J-17	11	PAINT	OR	06/12/87	54
6400HISOLID POLYURATHANE	#64 POLY.PAINT COMP1	POLYESTERE POLYMER 3.5%	BUTYL ACETATE 50%	CELLOSOLVE ACETATE 8%	1 GA	5 GA	J-17	11	PAINT	FL	06/12/87	55
643-18-6 POLY PAINT COMP1	MIL-C-83286B COATING	TOLUENE >5%	METHYL ETHYL KETONE 30%	2-ETHOXYETHYL ACETATE>5%	1 GA	1 GA	J-18	11	PAINTING	FL	03/03/87	285
64SG HI-SLDS.URETHANE CAT	#64SG POLY.CATALYST	TOLUENE DIISOCYANATE	BUTYL ACETATE 25%	CELLOSOLVE ACETATE 10%	1 PT	1 QT	J-17	11	PAINT	FL	06/12/87	56
707A	GE 707A SEALANT.A	VINYLE TOLUENE 40%			NA	5 GA	B-3	11	POTTING/ENCAPSL	CL	02/09/87	151
707B	G.E.707 B.CATALYST	DICUMYLPEROXIDE >98%			NA	.5 PT	B-3	11	POTTING/SEALANT	OP	02/09/87	152
711-F-2106 ELECT.VARNISH	PEDIGREE 711 VARNISH	AROMATIIC HYDROCARBON 10%	ALIPHATIC HYDROCARBON 40%		1 GA	4 GA	A,B-2	11	POTTING/ENCAPSL	FL	02/09/87	100
73 X BLACK	73X BLACK INK	ETHYLENE GLYCOL 15%	ISOPROPYL ALCOHOL 30%	PIGMENTS ??%	1 PT	1 GA	K-10	11	IDENTIFICATION	FL	02/11/87	296
73 X RECONDITIONER	73X INK THINNER	BUYTL CARBITOL	ISOPROPYL ALCOHOL 30%	ANHYDROL 200 ?%	1 PT	1 GA	K-10	11	IDENTIFICATION	FL	02/11/87	298
7526F(ALKYD RESIN)	G.E.BLUE EPOXY PAINT	XYLENE <50%	2-ETHOXY ETHONAL <10%	VM&P NAPTHA <10%	4 OZ	1 GA	B-3	11	POTTING/SEALANT	FL	03/03/87	153
76 DEVEL/REPLEN. PART "A"	76 DEVELOPER.PART	POTASIUM HYDROXIDE 1-5%	POTASSIUM METABORATE	HYDROQUINONE 1-5%	5 GA	15 GA	2J-4	PL	FILM DEVELOPER	NR	02/10/87	219
76 DEVEL/REPLEN. PART "B"	76 REPLENISHER	TRIETHYLENE GLYCOL 95%	ACETIC ACID 2%		5 GA	15 GA	2K-4	PL	FILM DEVELOPER	NR	02/10/87	220
923-35,&50 EPOXY VARNISH	PEDIGREE EPOXY VARN.	XYLENE 20-25%	*2-ETHOXYETHANOL 25-45%		1 GA	1 GA	A,B-1	11	POTTING/IMPREGN	FL	02/09/87	97
9922 EPOXY PRIMER PART A	CHEMGLAZE.EPOXY	XYLENE 10%	ZINC CHROMATE 10%	METHYLISOBUTYL KETONE 15%	NA	1 GA	J-17	11	PAINT	FL	06/12/87	66
9922 EPOXY PRIMER PART B	CHEMGLAZE.EPOXY	XYLENE 40%	PROPYLENE GLYCOL/ACETATE5		NA	5 GA	J-17	11	PAINT	FL	06/12/87	67
9951 THINNER(CHEMGLAZE)	9951 EPOX.PAINT THIN				NA	1 GA	K-17	11	PAINT THINNER	FL	04/13/87	81
997 VARNISH	DOW 997 VARNISH	XYLENE 50%	PHENYLCYCLOSILOXANE<0.01%	PHENYLHEPTAMETHY'SILOXANE	1 QT.	5 GA	B-3	11	POTTING/ENCAPSL	FL	03/03/87	148
ABLEBOND EC 2216/CAB	FROZEN ADHESIVE										00/00/00	306

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME / CHEMICAL NAME	COMMON NAME / A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
?METHYLENE CHLORIDE	DICHLOROMETHANE				1 GA	NA	K-2	11	STRIPPING EPOXY	PB	03/17/87	288
?QUICK JELL	LOCTITE QUICK JEL				???	?	NA	PL	GLUEING	NR	03/17/87	319
?RETAINING COMPOUND 609	LOCTITE RC 609				15 ML	NA	A-11	11	GLUEING	NR	03/17/87	310
?SCOTHCAST 5166 PART A	5166 POTT.COMPND. A										00/00/00	324
?SCOTHCAST 5166 PART B	5166 POTT.COMPND. B										00/00/00	325
?SILI-GEL CATALYST	SILLY JEL CATALYST										05/06	280
?SILI-GEL POTTING COMPOUN	SILLY JEL				NA	1 QT	D-5	11	POTTING	NR	02/11/87	278
?SILI-GEL PROMOTER	SILLY JEL ACCELERATR										05/06	279
?SYLGARD 184 CURING AGENT	SAME				200CC	NA	J-8	11	SEALING/POTTING	NA	07/10/87	294
?SYLGARD 184 RESIN	SAME										07/10/87	293
?TORQUE SEAL	TORQUE SEAL 900				2 OZ	6 OZ	K-7	11	SEALING	CL	04/13/87	295
A-10 ELECTROLYTE	ELECTRO ETCH FLUID-A	NONE			4 OZ	1 PT	VAR	PL	IDENTIFICATION	NR	02/11/87	271
A-12 PART A	A-12 EPOXY PART A	EPICHLOROHYDRIN RESIN			1 OZ	1 LB	B-10	11	POTTING/GLUING	NA	02/09/87	123
A-12 PART B	A-12 EPOXY PART B	POLYMIDE RESIN			1 OZ	1 LB	B-10	11	POTTING/GLUING	NA	02/09/87	124
A-1226-B ADHESIVE	RUBBER GLUE	TOLUENE 40 %	HEXANE 30%	NA	1 GA	NA	K-6	6	GLUEING	FL	06/12/87	292
ABLEBOND 161-3	ABLEBOND,161-3 EPOXY	NA			NA	4 OZ.	B-2	13	GLUEING	NA	02/10/87	107
ABLEBOND 957 SERIES	ABLEBOND 957 EPOXY	ARYLISOCYANATE 70-80%	PLASTICIZER 20-30%	COLOIDAL SILICA 5-15%	NA	4 OZ.	B-2	13	GLUEING	NA	02/10/87	105
ABLEBOND 957-2	ABLEBOND 957-2 EPOXY	ARYLISOCYANATE 70-80%	PLASTICIZER 20-30%		NA	4 OZ.	B-2	13	GLUEING	NA	04/13/87	104
ABLESTICK 167-1	SILVER,167-1 EPOXY	BUTYL GLYCIDYL ETHER<2%	SILVER 80%		NA	4 OZ.	B-2	13	GLUEING	NA	02/10/87	106
ABLESTICK 927-2	927-2.BLK EPOXY BASE	TOLUENE 5%			NA	4 OZ.	B-2	13	POTTING/ENCAPSU	FL	02/09/87	108
ACETONE(RHO-CHEM 1801)	ACETONE	ACETONE 100%			2-5GA	55 GA	B-23	6	CLEANING SOLVNT	FL	06/12/87	10
ACETYLENE.WELD GRADE	SAME	ACETYLENE	ACETONE		3 CYL	2 CYL	I-21	4	CUTTING BRAZING	FG	03/04/87	228
ACID TEST SOL.#2	HYDROCHLORIC ACID				1 PT	2 QT	G-10	8	Q.C.TEST	CO	02/09/87	127
ACTIVATOR 5GA.I(NA9212926	ILFORD ACTIVATOR	SODIUM HYDROXIDE 8%	ETHYLENE DIAMINE 0.1%	SODIUM SULFITE <3%	1 PT	1 GA	2J-7	PL	FILM DEVELOPER	CO	02/27/87	40
ACTIVATOR BA-1	BACON BA-1 ACTIVATOR	PIPERIDINE 100%			NA	2 OZ	B-3	11	POTTING	FL	02/09/87	140
ACTIVATOR BA-2A	BACON BA-2A,CATALYST	CHLORENIC ANHYDRIDE>90%	*CHLORENDIC ACID <1%	MALEIC ANHYDRIDE <1%	NA	2 OZ	B-3	11	POTTING	PB	02/09/87	141
ACTIVATOR BA-42	BACON BA-42 CATALYST	1,8-DIAMINO-P-METHANE 100			2 OZ	2 OZ	B-3	11	POTTING	CO	02/09/87	142
ACTIVATOR BA-45	BACON BA-45 CATALYST	1,8-DIAMINO-P-METHANE 100	3-DIMETHYLAMINOMETHPHENOL	PHENOL <0.01%	2 OZ	NA	B-3	11	POTTING	CO	02/09/87	143
ACTIVATOR BA-5	BACON BA-5 CATALYST	ALIPHATIC POLYMIDE >90%	SILICA <10%	CHROME/COBALT/ALUM.OXIDE	NA	NA	NA	NA	POTTING/GLUEING	OR	02/10/87	144
AD2001(FORMERLY 50-900)	HYSOL BLK INK THINER	DIETHYLENE GLYCOL 15-35%	GLYCOL ETHER ACETATE >15%	DIPROPYLENE METHYL ETHER*	2 OZ	1 GA	J-8	11	IDENTIFICATION	CL	03/02/87	238
ADHESIVE LCA-4	BACON LCA-4 EPOXY	DIGLYCIDYL BISPHENAL A	CALCIUM CARBONATE >50%	SILICA <1%	NA	NA	B-3	11	POTTING/GLUEING	OR	02/10/87	146
ADHESIVE/SEALANT 242	LOCTITE 242 SEALANT	CUMEN HYPERPEROXIDE <2%	POLYGLYCOL DIMETHACRYLATE	SACCHRIN 3-5%	<1 PT	1 PT	B-7	13	GLUE	NA	02/27/87	78
ADHESIVE/SEALANT GRADE HV	LOCTITE.HV SEALANT	POLYGLYCOL DIMETHACRYLATE	POLYGLYCOL DIOCTOATE35-40	CUMEN HYDROPEROXIDE 3%	<1 PT	1 PT	B-7	13	GLUE	NA	02/09/87	79
ALL-BRITE ALUM.CLEANER	ALUMINUM CLEANER	SODIUM HYDROXIDE 15%			NA	5 GA	F-15	PL	COIL CLEANER	CO	02/09/87	38
ALODINE 1200	ALODINE				60 GA	5 #	G-9	11	METAL CHEM.COAT	OX	02/02/87	4
ALUMINUM ETCHANT 34	ETCHANT	SODIUM HYDROXIDE 50%			50 GA	10 GA	G-9	7	METAL CHEM.COAT	CO	02/02/87	6
AMMONIA,ANHYDROUS	AMMONIA GAS	AMMONIA 100%			30 GA	30 GA	H-18	4	PRINT DEVELOPER	NG	02/09/87	132
ANTISTAT FILM CLEANER	FILM CLEANER	1,1.1TRICHLORDETHANE 100%			1 QT	NA	NA	11	FILM CLEANER	OR	02/10/87	226
APC CLEANER FORMULA	APC CLEANER	NONE			2 OZ	1 PT	VAR	PL	IDENTIFICATION	NR	02/11/87	276
AQUA AMMONIA(LIQUID)	NOT USED 3/86	AMMONIA HYDROXIDE			NA	NA	NA	NA	NO LONGER USED	CO	02/09/87	23
AQUASOL	MACHINERY CLEANER	2-BUTOXYETHANOL 1-7%	SODIUM SILICICATE 5-10%		5 GA	25 GA	F-15	PL	GENERAL CLEAN'G	NA	02/09/87	39
AUXILIARY TEST SOLUTION#8	SAME	ACETONE 50-60%	ISOPROPAL ALCOHOL 40-60%		1 OZ	4 OZ	G-10	PL	Q.C.TEST	FL	02/09/87	126
B-142-1(INSULAT. VARNISH)	B-142-1 VARNISH	XYLENE 35%	FORMALDEHYDE <2%	NA	4 OZ	1 GA	B-3	11	INSULAT/SEALANT	FL	03/03/87	155
B-6-264 INSULATING ENAMEL	INSULATING ENAMEL	XYLENE 53%	NA	NA	4 OZ	1 GA	B-3	11	INSULAT/SEALANT	FL	03/03/87	154
B-6-665 INSULATING ENAMEL	INSULATING ENAMEL	XYLENE 43%	NA	NA	3 OZ	1 GA	B-7	11	INSULATION	FL	03/03/87	261
BATTERIES.WET,ACID FILLED	SAME	SULFURIC ACID 10-30%	LEAD/LEAD OXIDE 60%	ARSENIC <1%	2 OZ	2 GA	L-8	12	POWER SUPLY MTL	CO	07/10/87	182
BERYLLIUM METAL	BERYLLIUM	BERYLLIUM 100%			NA	NA	B-10	12	ASSEMBLY	PB	02/10/87	216
BLEACH	BLEACH(CHLOROX)	SODIUM HYPERCHLORATE>5%	SODIUM CHLORIDE 5%		1 GA	10 GA	5 GA	PL	JANITORIAL	NA	02/10/87	204
BLEND 2646 SOLVENT	UNION 2646 SOLVENT	VM&P NAPHTHA	ETHYLBENZENE	N-BUTYL ACETATE	NA	NA	J-18	11	PAINTING	FL	02/09/87	102
BOLT(RESIDUAL BUG KILLER)	BOLT BUG SPRAY	DURSBAN 0.25%	PYRETHRINS 0.08%	PIPERONYL BUTOXIDE 0.40%	NA	5 GA	F-13	11	JANITORIAL	FL	02/10/87	200
BONDERITE 723A	BONDERITE MAKEUP	HYDROFLORIC ACID	NITRIC ACID	CHROMIC ACID	NONE	10 LB	G-9	11	METAL CHEM.COAT	OX	02/02/87	1

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME / CHEMICAL NAME	COMMON NAME / A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
BONDERITE 723B	BONDERITE CATALYST	COMPLEXED CYANIDES			NONE	10 LB	G-9	11	METAL CHEM.COAT	OX	02/02/87	2
BONDERITE 723C	BONDERITE	HYDROFLORIC ACID	NITRIC ACID	CHROMIC ACID	NONE	10 LB	G-9	11	METAL CHEM.COAT	CO	02/02/87	3
BONDMASTER E645 PART 1&2	BONDMASTER E645	METHYL CELLOSOLVE 25-85%	EPOXY ADHESIVE SOLIDS-75%		1 QT	2 GA	E-1	11	POTTING	CL	02/09/87	83
BRAYCO 783(MIL-H-6083 D)	RED HYDRAULIC FLUID	PETROLUIM SOLVENT 50-60%			.5 GA	1 GA	B-12	PL	METAL PREP/COAT	CL	02/09/87	89
BUG OFF(ANT&ROACH KILLER)	BUG SPRAY	METHYLENE CHLORIDE >2%	CELLOSOLVE ACETATE 4.2%	BAYGON 0.42% (PROPOXUR)	NA	5 GA	F-13	11	JANITORIAL	FL	02/10/87	199
CAB-O-SIL(SILICA OXIDE)	EPOXY FILLER	SILICON DIOXIDE 99+%			1 LB	NA	NA	9	POTTING/GLUEING	NR	02/10/87	159
CALCIUM CHLORIDE,ANHYDR'S	CALCIUM CHLORIDE	NONE			NA	10 LB	G-18	10	HAZ.WASTE TREAT	NR	02/10/87	190
CARTER'S 1950 DUP.FLUID	CARTER'S DUPLI.FLUID	METHYL ALCOHOL 95%			1 GA	1 GA	G-2	11	DUIPLICATION	FL	02/10/87	248
CASTALL E-34	E-300 CATALYST	m-PHENYLENE DIAMINE <40%	DIAMINODIPHENYLMETHANE<55		2 OZ	4 OZ	K-9	11	POTTING/SEALING	CO	03/13/87	302
CAT.118 /FLAT BLACK EPOXY	CA-118 CATALYST	M.E.K 25-30%	N-BUTYL ACETATE 10%	2-BUTOXY ETHYNOL 12%	1 TP	1 GA	J-17	11	PAINT	FL	06/12/87	64
CATALYST 11	STYCAST2651 CATALYST	m-PHENYLENE DIAMINE >70%			4 OZ	NA	B-1	8	INSULATION	CL	03/13/87	322
CATALYST 12-6H RED	ECCOFOAM CATAL.	NONE			1 QT	1 QT	L-6	11	POTTING/SEALING	CL	03/04/87	254
CATALYST 17	STYCAST 2762 CATALYS	HEXAHYDROPHALIC ANHYDRIDE	PHTHALIC ANHYDRIDE <5%								03/04/87	332
CATALYST A.20 (HD5020)	INK CATALYST,20/A	BUTYL CELLOSELVE 40-50%	TETRAETHYLENEPENTAMINE>45		.5 PT	NA	B-9	11	IDENTIFICATION	CL	02/09/87	96
CAUSTIC SODA.ANHYDROUS	SODIUM HYDROXIDE	SODIUM HYDROXIDE 100%			NA	20 LB	G-18	10	HAZ.WASTE TREAT	CO	02/10/87	189
CC-16,CC-18 PREMIX	HILORD CC-16,18PRMIX	ISOPAR H 99.56%			NA	NA	NA	NA	COPY MACH.FLUID	CL	02/09/87	163
CEE-BEE CLEANER MX-39G	CEE-BEE 39G	SODIUM CHROMATE <10%			1 OZ	50 LB	B-7	9	METAL CLEANER	NR	02/09/87	165
CELLOSOLVE ACETATE	SAME	2-ETHOXETHYL ACETATE			1 PT	5 GA	L-10	11	CONFORM.COATING	FL	02/09/87	111
CHEVRON 1200	1200 VARNISH THINNER	BUTYL ALCOHOL 30%	PARAFFINS(NAPHTHENES)	XYLENE 6%	NA	55 GA	A-22	6	VARNISH THINNER	FL	08/11/87	20
CHEVRON MULTI-MACH.OIL 46	#46.MACHINE OIL	LUBRICATING OILS 90-95%	DETERGENTS 5-10%	THICKENNERS <1%	NA	20 GA		11	LUBRICATION	CL	02/09/87	176
CO2,LIQUID,SYPHONE TYPE	LIQUID CO2	CORBON DIOXIDE 100%	NA	NA	3 CYL	6 CYL	I-21	4	REFRIGERATION	NA	03/04/87	305
COBEHN SPRAY SOLVENT	COBEHN SPRAY SOLVENT	CHLOROFORM 99.25%			1 QT	1 GA	B-3	8	DEGREASING SOLV	OR	02/02/87	17
COMPLETE	FLOOR WAX	ACRYLIC POLYMERS ??			1 QT	5 GA	5 GA	1L	JANITORIAL	NR	02/10/87	208
COMPOUND 24-C	BACON 24-C EPOXY	DIGLYCIDYL BISPHENAL A	LITH/ALUMINUM SILICATE 70	CAD SULFOSELENIDE <1%	1 QT	1 GA	B-3	11	POTTING/GLUEING	FL	02/13/87	145
CONATHANE CE-1155 PART A	POLYURATHANE BASE	XYLENE 15-20%	TOLUENE DIISOCYANATE <.7%	POLYGLYCOL ETHER ACETATE	1 QT	1 GA	B-7	11	POTTING/ENCAAPS.	FL	03/03/87	85
CONATHANE CE-1155 PART B	POLYURATHANE CATALYS	TOLUENE	POLYGLYCOL ETHER ACETATE		1 QT	1 GA	B-7	11	POTTING/ENCAPSU	FL	03/03/87	250
CONATHANE EN-687 PART A&B	CONAP,POTTING COMPND	TOLUENE DIISOCYANATE	NO OTHERS LISTED ??		1 QT	2 QT	B-7	11	POTTING/ENCAPS.	FL	02/09/87	86
COPPER COATALYTE #314					NA	1 PT	G-10		ELECTROPLATING	PB	05/04/87	299
DEOXIDIZR 7-17	DEOXIDIZER 7				60 GA	5 #	G-9	11	METAL CHEM.COAT	OX	02/02/87	5
DESOLV 292	RAM 292 PASTIC SOLV.	METHYLENE CHLORIDE 99.9%			1 QT	1 GA	B-7	11	PLASTIC SOLVENT	OR	02/09/87	177
DIETHYLENETRIAMINE	DETA ???	DIETHYLENETRIAMINE DTA			NA	NA	NA	NA	NOT USED	CO	02/09/87	173
DK4-03 GREEN	EPOXY RESIN DK4-03	BENZOPHENANE TETRACARBOX-	YLIC DIANHYDRIDE <10%	SILICON DIOXIDE 35-60%	10 LB	25 LB	C-1	9	POTTING/FLUIDIZ	NA	02/09/87	118
DOLPH-SPRAY AC-29 7S	DOLPHS SPRAY SEALER	TOLUENE 9%	XYLENE 9.24%	METHYLENE CHLORIDE 22%	3 CAN	1 GA	B-3	11	SEALER	FL	02/10/87	242
DOW CORNING 200 FLUID10WT	DOW 200 SILICONE OIL	NONE			1 PT	NA	B-7	8	LUBRICATION	NR	02/12/87	312
DUPLICATING FLUID-FEDERAL	MCKESSON DUPLI.FLUID	METHYL ALCOHOL 95%			1 GA	1 GA	G-2	11	DUIPLICATION	FL	02/10/87	247
DYKEM BLUE;DX-100,SP-1000	DYKEM LAYOUT INK	BUTYL ACETATE 33%	DENATURED ALCOHOL 57%	BUTYL ALCOHOL 4%	1 QT	1 GA	G-5	11	LAYOUT INK	FL	02/10/87	222
DYKEM THINNER #138	SAME	DENATURED ALCOHOL 80%	BUTYL ACETATE 20%		NA	1 GA	G-5	11	INK THINNER	FL	02/11/87	274
E-300 PART A	CASTALL 300 EPOXY	BUTYL GLYCIDYL ETHER <2%	EPICHLOROHYDRIN <0.1%		1 QT	NA	K-9	11	POTTING/INSULAT	NR	02/11/87	301
EA 934 PART A.EPOXY	HYSOL EA 934 EPOXY A	ASBESTOS 14%	EPOXYDIZED PHENOLIC RESIN	BIS A EPICHLORO POLYMER	1 OZ	1 LB	B-3	PL	GLUING/BONDING	CL	02/12/87	91
EA 934 PART B.CATALYST	EA 934 EPOXY PART B	DIETHYL ENETRIAMINE 13%	METHYLENE DIANILINE 87%		1 OZ	1 LB	B-3	PL	GLUING/BONDING	CO	03/03/87	92
ECCOFOAM FPH	ECCOFOAM EPOXY	TOLUENE DIISOCYANATE<70 %			1 QT	2 QT	M-6	11	POTTING/SEALING	PL	02/11/87	253
ECCOSTRIP 93	SAME	METHYLENE CHLORIDE 70%	FORMIC ACID 6-10%	PHENOL 5-10%	2 QT	1 GA	C-1	8	EPOXY STRIPPER	CO	03/17/87	164
EE4215(C9-4215)	EPOXY RESIN EE4215	EPICHLOROHYDRIN <10%			1 PT	1 GA	C-2	11	POTTING/ENCAPSL	NA	02/09/87	119
ELECTROLYTE FORMULA 59CL	TITANIUM ELECTROLYTE	NONE			2 OZ	1 PT	VAR	PL	IDENTIFICATION	NR	02/11/87	277
EPC 50 BLUE EPOXY POWDER	BLUE EPOXY POWDER,50	SILICA SAND 30-40%	AMORPHOUS SILICA <0.5%	TITANIUM DIOXIDE <5%	NA	NA	NA	NA	POTTING/ENCAPSL	NR	02/09/87	138
EPC 68-2 BLUE EPOXY POWDR	BLUE FLUIDIZE POWDER	SILICA SAND 30-40%	ANTIMONY TRIOXIDE<2%	TITANIUM DIOXIDE <5%	5 LB	25 LB	C-1	9	POTTING/ENCAPSL	NR	02/09/87	137
EPIBOND 1210 A/B ADHESIVE	1210 FROZEN EPOXY	TRIETHYLAMINES-90% (B)	OLEIC ACIDS -5% (B)	EPOXY RESINS >50% (A)	2 CC	80 CC	B-7	11	GLUING	CO	05/04/87	289
EPK 0151,PART B.CATALYST	0151 RESIN CATALYST	NONE LISTED			1 PT	1 QT	B-7,8	11	POTT/ENCAPSULAT	NA	02/09/87	94
EPK0151 PART A	151 EPOXY RESIN	BUTYL GLYCIDYL ETHER			1 QT	1 QT	B-7,8	11	POTT/ENCAPSULAT	NA	02/09/87	93
EPOCAST 2293 "A"	SAME				100GM	1 QT	B-2	11	GLUEING/BONDING	NR	03/17/87	329
EPOCAST 2293 "B"	SAME	HEXAHYDROPHALIC ANHYDRIDE	PHTHALIC ANHYDRIDE <5%		100GM	1 QT	B-2	11	GLUEING/BONDING	NR	03/17/87	330

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME CHEMICAL NAME	COMMON NAME A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
EPOCAST 2293 "C"		DIMETHYLAMINO METHPHENOL	PHENOL 5%		10 GM	2 OZ	A-2	11	GLUEING/BONDING	NR	03/17/87	331
EPON RESIN 828	EPON 828 EPOXY	EPICHLOHYDRON RESIN			1 PT	1 PT	B-7	13	POTTING/SEALING	FL	02/13/87	179
EPOXYLITE 351 "A"	SAME	DYGLYCIDYL BISPHENOL ETHR	BORON TRIFLOURIDE <5%								04/27/87	297
EPOXYLITE 8117 PARTS"A/B"	8117 EPOXY	BISPHENAL GLICIDYL ETHER	AMINE HARDENER		1 QT	1 QT	J-8	11	POTTING/INSULAT	OR	02/11/87	249
FG DEVELOPER	NACCO DEVELOPER	HYDROQUINONE 1-5%	P-METHYLAMINOPHENOLSULFAT		1 PT	1 GA	2J-4	12	FILM DEVELOPER	NA	02/09/87	28
FLEXIDOL	PHOTO DEVELOPER	LOW TOXIC ORGANICS<0.5%	SEVERAL MOST HAZ.<0.8%	MIXED ADDITIVES<11%	5 GA	5 GA	2J-4	12	FILM DEVELOPER	NA	02/09/87	25
FLOOR CORPS NEUTRALIZER	FLOOR CONDITIONER	CITRIC ACID	SODIUM CARBONATE		2 OZ	1 LB	G-6	10	JANITORIAL	NA	02/10/87	202
FLOOR CORPS.WAX STRIPPER	WAX STRIPPER				NA	1 GA	G-6	11	JANITORIAL	NA	02/10/87	203
GC 250 ACCELERATOR	GC 250 PART	LEAD DIOXIDE 70%									02/27/87	180
GC 250 SEALANT	GC250 SEALANT	POLISULFIDE 70%	TOLUENE 5%	SULFER <3%							02/27/87	43
GENETRON 22	FREON 22 REFRIGERANT	CHLORDIFLOUROMETHANE 100%			NA	NA	F-15	4	REFRIGERATION	OR	02/10/87	196
HD-3469	EE4215 EPOXY CATALYS	DIETHYLENETRIAMINE35-60%	METHYLENE DIANILINE35-60%	NA	1 QT	1 QT	B-7	PL	POTTING/ENCAPSU	CO	03/05/87	255
HEXANE(SPECTRO GRADE)	HEXANE	N-HEXANE 100%			1 QT	1 GA	B-7	8	METAL CLEANING	FL	02/10/87	218
HI-THERM BC-350	HI-THERM 350 VARNISH	XYLENE 52%			1 GA	2 GA	B-1	11	POTTING/INSULAT	FL	02/10/87	251
HIGH EFFIC.THINNER#1516,M	#1516 THINNER,MEDIUM	ISOPROPYL ALCOHOL	ACETONE	N-BUTYL ACETATE	1 GA	5 GA	K-17	11	PAINTING	FL	02/10/87	195
HOT DIP STIP COATING-TYP1	DIPSEAL	MINERAL OIL 65%	BUTYL BENZYLPHTHALATE <5%	PARAFIN WAX <5%	1GA	NA	G-4	11	ENCPSULATION	NR	02/10/87	241
HUMISEAL 1B12.SEALER	ACRYLIC COPOLYMER	TOLUENE 55%	M.E.K.25%	ACRYLIC-VINYLCOPOLYMER	1 QT	1 GA	C3,K7	11	BRUSH SEALER	FL	03/03/87	82
HUMISEAL 1B73 AEROSOL	SPRAY SEALER	TOLUENE 10%	M.E.K.28%	CELLOSOLVE ACETATE 5%	1 PT	2 GA	B-3	11	SEALING/INSULAT	FL	03/03/87	265
HYSOL PC18	PC18 EPOXY	XYLENE 25%	CELLOSOLVE ACETATE 30%	TOLUENE DIISOCYANATE 1%	2 LB	NA	K-11	PL	POTTING/SEALING	FL	02/11/87	252
HYTREL.4056 POLYESTER	POLYESTER RESIN	BUTYLENE POLY PHTHALATE			NA	25 LB	M-16	10	MOLDING RESIN	NR	03/03/87	282
INDICATOR STOP BATH	STOP BATH	ACIDIC ACID 85-90%			NA	4 OZ	2J-4	12	FILM DEVELOPER	CO	02/10/87	33
INSTAPAK COMPONENT A	INSTAPAK PART A	DIPHENYL DIISOCYANTE 50%	HIGH WEIGHT OLIGOMERS 50%		5 GA	10 GA	L-17	7	PACKAGING FOAM	OR	02/09/87	114
INSTAPAK COMPONENT B	INSTAPAK PART B	TRICHLOROMONOFLUOROMETHAN	DIETHANOLAMINE 1.5%		5 GA	10 GA	L-17	7	PACKAGING FOAM	OR	02/11/87	115
INSTAPAK GUN SOLVENT	CARBITOL	DIETHYLENE ETHER 100%			1 PT	1 GA	L-17	11	CLEAN.SOLVENT	CL	02/09/87	116
INSTAPAK PORT CLEANER	LACTONE	GAMMA-BUTYROLACTONE 100%			1 PT	1 GA	L-17	11	CLEAN.SOLVENT	OR	02/09/87	117
ISONEL 472-66	ISONEL VARN.THINNER	XYLENE 25-35%	METHOXY PROPANOL 5-10%	ISOBUTYL ALCOHOL 5-10%	1 GA	2 GA	B-2	11	POTTING/ENCAPSU	FL	02/09/87	103
ISONEL,#31 VARNISH(XV-398	ISONEL #31 VARNISH	XYLENE 25%	MINERAL SPIRITS		200 G	55 GA	A-22	6	ENCAPSOLATION	FL	02/09/87	77
ISOPROPYL ALCOHOL(1104)	ALCOHOL TECH. GRADE	ISOPROPYL ALCOHOL 100%			5 GA	55 GA	B-23	6	CLEANING SOLVNT	FL	06/12/87	9
J-100 STRIPPER	J-100 STRIPPER	METHYLENE CHLORIDE	HYDROCARBON SOLVENT 37%	PHENOLSULFONIC ACID	1 PT	1 GA	M-7	PL	EPOXY STRIPPER	CO	02/09/87	34
JON-COOL 850	COOLANT,SPRAY MIST	ETHYLENE GLYCOL 1-3%	FATTY ACID SOAPS >30%	HYDROCARBON OIL >5%	1 GA	5 GA	B-12	13	CUTTING OIL	OR	02/09/87	44
KE GLASS CLEANER	GLASS CLEANER	ISOPROPYL ALCOHOL 36%	ACETONE 1%	SURFACTANT <1%	2 GA	10 GA	G-6	PL	JANITORIAL	FL	02/10/87	198
KL-101 (207E)	KL-101 CLEANER	SOLVENT 82%	ALKALI SOAPS 6%	SPEC.SURFACTANTS 8.7%	1 QT	10 GA	5 GA	PL	JANITORIAL	NA	02/10/87	205
KLEEN PINE #5	KLEEN LINE #5 ODER	AMMONIUM CHLORIDE 4%	NONIONIC SURFACTANT 4%	PINE OIL 4%	1 QT	5 GA	5 GA	PL	JANITORIAL	NR	02/10/87	207
KODAK DEVELOPER D-76	DEVELOPER D-76	HYDROQUINONE 1-5%	P-METHYLAMINOPHENOLSULFAT		1 PT	20 LB	2J-4	12	FILM DEVELOPER	OR	02/10/87	29
KODAK RAPID FIXER,PART A	KODAK FIXER PART A	AMMONIUM THIOSULFATE	SODIUM ACETATE 5-10%	BORIC ACID <5%	1 GA	10 GA	2J-4	12	FILM DEVELOPER	OR	03/05/87	30
KODAK RAPID FIXER,PART B	KODAK FIXER,PART B	SULFURIC ACID 10-20%	ALUMINUM SULFATE 15%		1 PT	1 GA	2J-4	12	FILM DEVELOPER	CO	02/09/87	31
KRYLON EXT/INT.SPRAYPAINT	KRYLON SPRAYPAINT	ACETONE 37%	PROPANE 17%	M.E.K. 8-17%	1 PT	1 GA	A-14	11	SPRAY PAINTING	FL	02/09/87	135
LOCQUIC PRIMER N764-55,71	LOCQUIC PRIMER	TRICHLOROETHANE 98%+	TRIALKYLAMINE CARBOXYLATE	CARBOXYLIC ACID <1%	2 OZ	1 PT	C-3	8	GLUING	OR	02/09/87	136
LOCQUIC PRIMER T747-47&56	LOCQUIC PRIMER	111TRICHLOROETHANE >85%	ISOPROPAL ALCOHOL 5-10%	MERCAPTOBENZOTHIAZOLE1-3%	2 OZ	.5 GA	J-7	8	BONDING ACCELER	OR	02/10/87	223
LOCTITE AA WELD SEALANT	AA LOCTITE SEALANT	CUMEN HYPERPEROXIDE >3%	POLYGLYCOLDIMETHACRYLATES	SACCHARIN <1%	4 OZ	NA	NA	NA	GLUEING METAL	NR	02/11/87	260
LOCTITE SUPER BONDER 495	495 LOCTITE	POLYGLYCOL DIMETHACRYLATE	ETHYL CYANOACRYLATE>95%	HYDROQUINONE <0.5%	<1 PT	1 PT	ALL	13	GLUE	OR	02/09/87	80
LUBRACOOLANT 4D	COOLANT,GRINDING	NA			2 GA	5 GA	F-9	PL	CUTTING OIL	NA	02/09/87	47
LUBRI-BOND "A" AEROSOL	LUBRIBOND SPRAY LUBE	ACETONE 38%	XYLENE 7%	MOS2+GRAPHITE 4%	1 PT	5 PT	VAR	11	SEALANT/INSULAT	FL	02/11/87	275
LUBRI-CUT.FORM 2,PASTE	TAPPING COMPOUND				.25LB	1 LB	F-5	11	METAL TAPPING	NA	02/09/87	98
M-9-N	M-9-N EPOXY INK	CARBITOL ACETATE>20%	EPICHLOR POLYMER 27%		.5 PT	1QT	B-9	11	IDENTIFICATION	CL	02/09/87	88
M-O-N	M-O-N EPOXY INK	CARBITOL ACETATE>20%	HEXYL CARBITOL 2-4%		.5 PT	1QT	B-9		IDENTIFICATION	CL	02/09/87	87
M-O-N-C BLACK (ME1009)	HYSOL BLK.EPOXY INK	DIETHYLENE GLYCOL 15-35%	COPPER CHROMATE 45-50%	BIS A EPICHLORD POLYMER	.5 PT	1QT	B-9	11	IDENTIFICATION		03/02/87	90
MAGNESIUM METAL SOLIDS	SAME	MAGNESIUM			.5 TN	1 TN	D-7	9	FABRICATE/MT'L	FS	02/09/87	128
MARKEM INK#????/COLOR????	MARKING INK#??/----	ETHYLEN GLYCOL 15%	ISOPROPYL ALCOHOL 30%	PIGMENTS ??%	1 PT	1 QT	B-7	11	IDENTIFCATION	FL	02/09/87	174
METAGRIP 303 ACTIVATOR	SAME	TRADE SECRET			2 OZ	NA	K-9	8	GLUEING	NR	02/12/87	327
METAGRIP 303 BASE	SAME	DYGLYCIDYDYL ETHER BIS A			1 LB	NA	K-9	8	GLUEING	NR	02/12/87	326

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME / CHEMICAL NAME	COMMON NAME / A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
METHYL ETHYL KETONE	M.E.K.	METHYL ETHYL KETONE 100%			2-5GA	55 GA	B-23	6	CLEANING SOLVNT	FL	06/12/87	11
MINETCH IE-01 PRBND CLNER	MINETCH IE-01	HEXAVALENT CHROME 33%	BORIC ACID 30-35%		6 OZ	NA	B-7	8	METAL CLEANER	CO	02/10/87	221
MM HONING OIL	HOUGHTON HONING OIL	MINERAL OIL 49%	PETROLUIM DISTILATE 10-30%	TURPENTINE 10-30%	20	55 GA	A-22	6	CUTTING OIL	CL	02/09/87	45
MOBILE DTE 24	DTE 24 OIL	MINERAL OILS90-95%	DETERGENTS 5-10%	THICKENNERS <1%	10 GA	55 GA	B-22	6	LUBRICATION	CL	03/17/87	317
MOBILE DTE OIL LT.MED.HVY	DTE LUBE OIL	MINERAL OILS90-95%	DETERGENTS 5-10%	THICKENNERS <1%	NA	55 GA	B-22	11	LUBRICATION	CL	02/09/87	178
MOBILE VACTRA OIL #1&2	VACTRA LUBE OIL	MINERAL OILS90-95%	DETERGENTS 5-10%	THICKENNERS <1%	20 GA	125GA	A-22	11	LUBRICATING OIL	CL	04/27/87	181
MOBILE VACUOLINE 1409	VACUOLINE 1409	MINERAL OILS 90-95%	ADDITIVES 5-10%	LARD OIL 5-10%	20 GA	10 GA	G-14	11	VAC.PUMP OIL	CL	02/10/87	184
MOBILE VACUUM PUMP OIL	VACUUM PUMP OIL	MINERAL OILS 100%			20 GA	10 GA	G-14	11	VAC.PUMP OIL	CL	02/10/87	185
MOBILE VELOCITE OIL #6		MINERAL OILS90-95%	DETERGENTS 5-10%	THICKENNERS <1%	2 GA	5 GA	B-22	11	LUBRICANT OIL	CL	04/27/87	183
MOBILGEAR 632	MOBILE 632 GEAR LUBE	MINERAL OILS 95%	ADDITIVES <5%		10 LB	50 LB	G-14	11	LUBE GREASE	NR	02/10/87	186
MOLYKOTE 557 SPRAY LUB.	MOLYCOTE SPRAY LUB.	1,1,1 TRICHLOROETHANE 54%	ACETONE 8%	PROPANE/BUTANE 30%	1 PT	10 PT	VAR	11	LUBRICANT	FG	02/11/87	273
MS-111 STRIPPER	STRIPPER,EPOXY&RESIN	METHYLENE CHLORIDE 83%	FORMIC ACID 6-10%	PHENOL 5-10%	1 PT	1 GA	M-7	PL	EPOXY STRIPPER	CO	03/17/87	35
MS-122 RELEASE AGENT	MS-122 MOLD RELEASE	FREON TF(R-113)	FREON(R-12)	TRICHLOROFLUOROETHANE	1 PT	2 GA	F-8	11	MOLD RELEASE	OR	02/10/87	239
MSC-1 ELECTROLYTE	MSC1 ELECTRO ETCH FL	NONE			4 OZ	1 PT	VAR	PL	IDENTIFICATION	NR	02/11/87	268
MSC-3 ELECTROLYTE	MSC3 ETCHING FLUID	NONE			4 OZ	1 PT	VAR	PL	IDENTIFICATION	NR	02/11/87	269
MSC-4 ELECTROLYTE	MSC-4 ETCH FLUID	NONE			4 OZ	1 PT	VAR	PL	IDENTIFICATION	NR	02/11/87	270
MURIATIC ACID	HYDROCHLORIC ACID	HYDRCHLORIC ACIDE >30%			NA	6 GA	G-18	PL	HAZ.WASTE TREAT	CO	02/10/87	191
N,N-DIMETHYLFORMAMIDE.DMF	FORMAMIDE,N,N DIMETH	DIMETHYLFORMAMIDE 100%			NA	NA	NA	NA	NOT IN USE	CL	02/09/87	75
NICKEL COATALYTE # 3		PHOSPHORIC ACID 5%			4 OZ	.5 GA	G-10	PL	ELCTROPLATING	OR	05/04/87	213
NICKEL COATALYTE #310	ACID ETCH LIQUID	NICKEL CHLORIDE 13%	AMMONIUM CHLORIDE 13%	AMMONIUM CITRATE	I PNT	1 GA	G-10	13	ELECTRO PLATING	OR	02/09/87	24
NICKEL COATALYTE #310 B		NICKEL SULFITE 2%	SULFAMIC ACID 13%	AMMONIUM CITRATE 6%	4 OZ	.5 GA	G-10	PL	ELECTROPLATING	CO	05/04/87	214
NICKEL COATALYTE #312		CADMIUM SULFATE 10%	SULFURIC ACID 3%		4 OZ	.5 GA	G-10	PL	ELECTROPLATING	OR	05/04/87	215
NITOGEN,GASEOUS,HI-PRESS.	GASEOUSE NITROGEN	NA			3	6	I-21	4	CLEANING	NG	03/04/87	147
NITRIC ACID 38'BAUME	NITRIC ACID	NITRIC ACID >56%			NA	15 GA	G-9	11	PLATING	CO	02/09/87	120
NITROGEN.LIQUID	LN2				42 GA	126GA	H-22	5	REFRIGERANT	NG	03/04/87	130
NUT LOCK/GRADE CV	LOCTITE.CV SEALANT	POLYGLYCOL DIMETHACRYLATE	POLYGLYCOL DIOCTOATE15-20	CUMEN HYDROPEROXIDE 3% *							02/05/87	264
OAKITE HD 126	OAKITE 126 CLEANER	SODIUM HYDROXIDE 20%	TETRASODIUMPHOSPHATE 12%		42 GR	50 LB	B-7	6	METAL CLEANING	CO	02/10/87	211
OVEN CLEANER (#2057)	SAME	POTASIUM HYDROXIDE 10.3%	2-BUTOXYETHANOL 4%	MONOETHEMOL AMINE 3%	NA	1 GA	G-6	11	JANITORIAL	CO	02/10/87	209
OXYGEN,WELD GRADE	OXYGEN	OXYGEN			3 CYL	2 CYL	I-21	4	CUT,WELD,BRAZE	OX	03/04/87	229
PACER STANDRD ACCELERATOR	PACER.	DIMETHYL-P-TOLUIDINE<5%	ACETONE <15%		4 OZ	1 GA	2J-6	8	GLUE/BONDING	OR	02/10/87	235
PC FLEX-MASK	LATEX RUBBER COMPOUN	NONE LISTED			2 OZ	NA	K-10	11	CIRC.BOARD ASSY	NR	02/11/87	300
PERCHLOROETHYLENE 2406	VAPOR DEGREASER	PERCHLOROETHYLENE 100%			30 GA	55 GA	B-22	6	DEGREASING SOLV	OR	03/03/87	15
PERMABOND 910FS ADHESIVE	PERMABOND 910 GLUE	METHYL CYANOACRYLATE 95%	HYDROQUINONE (25PPM)	POLY(METHACRYLATE)5%	2 OZ	1 QT	VAR.	9	GLUE/BONDING	CL	03/02/87	234
PHOTO FLOW 200 SOLUTION	PHOTO FLOW 200	OCTYLPHENOL ALCOHOL	PROPYLENE GLYCOL		1 PT	3 PT	2J-4	12	FILM DEVELOPER	NA	02/10/87	32
PL 605-4	PLASTILOC 605-4	M.E.K. 35%	MONOCHLORDBENZENE 15%	ISOPROPAL ALCOHOL 15%	1 OZ	6 OZ	C-3	11	SEALANT	FL	03/03/87	139
PL-604	PLASTILOC 604	M.E.K. 65%	NA	NA	??	??	B-3	11	POTTING/ENCAPSL	FL	03/03/87	287
PLIOBOND 20	RUBBER POTTING COMPD	M.E.K.70-80%	CALCIUM CARBONATE <5%	ALKYLPHENOLIC RESIN 5-10%	1 PT	1 QT					02/11/87	283
PRO-SEAL 890 (BASE)	PRO-SEAL 890 (BASE)	TOLUENE 10%-15%			1 LB	2 LB	C-3	11	POTTING/SEALING	FL	02/09/87	134
PRO-SEAL 890(ACCELERATOR)	PRO-SEAL890 CATALYST	MANGANESE DIOXIDE 60%			2 OZ	6 OZ	C-3	11	POTTING/SEALING	NR	02/09/87	133
PROPANE (LPG)	PROPANE	PROPANE			30 GA	600GA	B-17	5	FORK LIFT FUEL	LP	02/09/87	21
PS-30A ACRYLIC ADHESIVE	PS-30 PART	METHYL METHACRYLATE <5%	HYDROQUINONE <0.5%	TUNUVIN P.	NA	1 PT	B-11	11	BONDING/GLUEING	FL	02/11/87	262
PS-30B ACRYLIC ADHESIVE	PS-30B,CATALYST	DIBUTYLE PHTHALATE	BENZOYL PEROXIDE		NA	2 OZ	B-11	PL	BONDING/GLUEING	NR	02/11/87	263
PT-1002 PAINT REDUCER	PT-1002 THINNER	TOLUENE	N-BUTYL ACETATE	PROPYLENE GLYCOL MONETHER	1 GA	2 GA	J-18	11	PAINTING	FL	03/03/87	233
PT-329 AIR DRY ENAMEL	ALL EXC.YEL,RED.ORNG	MINERAL SPIRITS 34%	LEAD COMPOUNDS(PB) 16.67%	CHROMATES (CR)3.9%	<1 GA	4 GA	J-17	11	PAINT	FL	06/12/87	68
PT-329 AIR DRY ENAMEL	YEL,GRN,OLIVE DRAB	MINERAL SPIRITS 34%			<1 GA	4 GA	J-17	11	PAINT	CL	06/12/87	69
PT-500,EPOXY PAINT PRIMER	EPOXY PRIMER,PART A	M.E.K. 14%	N-BUTYL ALCOHOL 7%	EPICHLORHYDRIN RESIN 35%*	<1 GA	1 GA	J-17	11	PAINT	FL	03/03/87	232
PT-500.PAINT CATALYST	EPOXY PAINT CATALYST	ETHYLE ACETATE 76%	N-BUTYL ALCOHOL 6.6%	N-BUTYL ACETATE	NA	2 GA	K-18	11	PAINTING	FL	03/03/87	231
PT426,EPOXY PAINT COMP I	P/T EPOXY PART A	M.E.K. 82%	N-BUTYL ALCOHOL 6.56%	EPICHLORHYDRIN RESIN 35%*	<1 GA	1 GA	J-17	11	PAINT	FL	03/02/87	70
PT426,EPOXY PAINT COMP.II	P/T EPOXY PART B	ETHYLE ACETATE 76%	N-BUTYL ALCOHOL 6.6%	N-BUTYL ACETATE	<1 GA	1 GA	J-17	11	PAINT	FL	02/12/87	71
QUALITY METAL CLEANER	SAME	OXALIC ACID 2-5%	SILIEN 30-50%	SODIUM CHROMATE 0.3%	1 QT	NA	D-6	11	METAL CLEANER	CO	03/03/87	267
QUICK DRY STAMP PAD INK	STAMP PAD INK	DYETHYLENE GLYCOL 20%	ETHYLENE GLYCOL>20%		1 OZ	1 QT	VAR	11	IDENTIFICATION	CL	02/12/87	314

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME / CHEMICAL NAME	COMMON NAME / A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
R7 KB29(POLANE"L"REDUCER)	POLANE L REDUCER	TOLUENE 10%	M.E.K.60%	CYCLOHEXANONE 5%	NA	1 GA	J-17	11	PAINT THINNER	FL	02/09/87	131
RAPID ACTIVATOR #4		POTASSIUM CYANIDE 2.5%			NA	1 QT.	G-10		ELECTROPLATING	PB	05/04/87	121
REDUCER 81-027	STERLING,REDUC F-173	XYLENE 75%	* 2-ETHOXYETHANOL <30%	DIETHYLENE GLYCOL ETHER	5 GA	5 GA	B-2	11	VARNISH THINNER	FL	02/09/87	112
REDUCTANT 214	ALODINE CR.REDUCER	SODIUM BISULFATE	ZINC SULFATE		NA	20#	C-15	11	ALODINE TREATMN	NA	02/02/87	8
RETAINING COMPOUND 640	LOCTITE RC 640	POLYGLYCOL DIMETHACRYLATE	POLYURETHANE METHACRYLATE	ACRYLIC ACID 5-7%	2 OZ	.5 PT	VAR	PL	GLUEING	NR	03/16/87	313
RHO-SOLV 1202	STODDARD,PD-680	ALIPHATIC HYDROCARBON			5 GA	55 GA	B-23	6	MET.CLEAN.SOLVE	CL	02/05/87	13
RHO-SOLV 1209	KEROSENE	ALIPHATIC HYDROCARBON			1 GA	55 GA	B-23	6	METAL MACHINE	CL	02/04/87	12
RHO-SOLV 7703	WASH THINNER	MIXED HYDROCARBONS 36.8%			5 GA	55 GA	B-22	6	PAINT THINNER	FL	06/12/87	19
RHO-SOLV 778	ENAMEL THINNER	MIXED HYDROCARBONS	KETONE	ESTERS	NA	NA	NA	6	PAINT THINNER	FL	02/02/87	18
RHO-TRON PCA.TF	FREON PCA,TF;R-113	TRICHLORODTRIFLUOROETHANE	NA	NA	2-5GA	55 GA	B-7	6	DEGREASING SOLV	OR	03/03/87	14
RIDOLINE 53	RIDOLINE	TETRASODIUM PYROPHOPHATE	SODIUM METASILICATE		50 GA	100 #	G-9	9	METAL CHEM.COAT	CO	02/09/87	7
ROUGH RIDER EMULS.DEGEASR	BUTCHERS MACH.CLEANR	2-BUTOXY ETHANOL 8%	ISOPROPAL ALCOHOL 1%	MONOETHANOLAMINE<.5%	1 GA	5 GA	G-6	11	JANITORIAL	NR	02/10/87	210
RTV 103 SILICONE SEALANT	SAME	METHYLACETOXYSILANE 0.5%	NA	NA	2 OZ	6 OZ	B-8	11	SEALING	NA	03/03/87	266
RTV 162 SILICONE SEALANT	SAME	POLYDIMETHYLSILOXANE			NA	4 OZ	B-7	11	SEALANT	NR	03/17/87	318
RTV566A	SILICONE SEALANT	ETHYLSILICATE <5%	NA	NA	4 OZ	1 PT	B-3	PL	SEALANT	NA	03/02/87	258
RTV5668	SILICONE SEALANT	ALKYL TIN CARBOXYLATE >80	NA	NA	4 OZ	1 PT	B-3	PL	SEALANT	NA	03/02/87	259
S OR CATALYST"1"	DOW	DIBUTYLTINDYLAURATES 5%			2 OZ	4 OZ	B-3	11	POTTING/ENCAPSL	NR	03/05/87	150
S-300 PREMIX	COPY FLUID,MIX S-300	ISOPAR H 99.56%			NA	NA	NA	11	COPY MACHINE	CL	02/09/87	162
S/G,ALKYD ENAMEL,BAKING	KOPPERS OLIVE DRAB	TOLUENE	ISOPROPYL ALCOHOL 58%	LEAD CHROMATE ?%	NA	1 GA	J-17	11	PAINT	FL	02/09/87	74
SAE 30WT.,DETERGENT,OIL	30WT.MOTOR OIL	LUBRICATING OILS 90-95%	DETERGENTS 5-10%	THICKENNERS <1%	NA	3 GA	B-17	11	MOTOR OIL	CL	03/05/87	175
SAXON 1.2.PPC TONER	SAXON TONER				1 QT	2 GA	VAR	11	PHOTO COPY	NR	02/11/87	245
SAXON 1.2,PPC-1DEVELOPER	SAXON DEVELOPER	UNKOWN	??	??	1 QT	2 GA	VAR	11	PHOTO COPY	NR	02/25/87	246
SC-2L PREMIX	COPY FLUID,TONER	ISOPAR H 99.98%			NA	NA	NA	11	COPY MACHINE	CL	02/09/87	161
SCOTCH-CLAD 776	FUEL RES.COATING 776	METHYL ISOBUTYL KETONE83%	ETHYL ALCOHOL 7%	M.E.K. 6%	1 QT	1 GA	B-7	11	POTTING/ENCAPSL	FL	02/12/87	167
SCOTCH-CLAD 776SR	FUEL RES. COAT 776SR	METHYL ISOBUTYL KETONE83%	BUTADIENE/ACRYLONITRILE-	FORMALDEHYDE RESIN 17%	1 QT	1 GA	B-7	11	POTTING/SEALING	FL	02/09/87	166
SCOTCH-GRIP 4475 ADHESIVE	SCOTCH 4475 GLUE	METHAL ETHAL KETONE	??		10 OZ	5 LB	2K-3	13	GLUEING/BONDING	FL	03/04/87	160
SCOTCH-GRIP 847-L	RUBB&GASKET ADHESIVE	ACRYL/NITRIL RUBBER/RESIN	ACETONE 46%	M.E.K.14%							03/04/87	193
SCOTCH-SEAL 1252 SEALER	TAMPER PROOF SEALANT	INERT 70%	M.E.K. 26%	ANTIMONY TRIOXIDE 4%	2 OZ	6 OZ	B-3	11	SEALANT	FS	03/04/87	290
SCOTCH-WELD 2216-A.EPOXY	3M,2261-A EPOXY,GRAY	ALUMINUM SILICATE 39%	ALIPHATIC AMINE 61%	CARBON BLACK <1%	1 OZ	6 OZ	B-3	9	POTTING/ENCAPSL	NA	02/09/87	171
SCOTCH-WELD 2216-B EPOXY	3M,2261-B,EPOXY,WH'T	BIS A EPICHLOROHYDRIN 72%	ALUMINUM SILICATE 28%		1 OZ	6 OZ	B-3	9	POTTING/ENCAPSL	NA	02/09/87	172
SCOTCH-WELD 3901 PRIMER	3M 3901 PRIMER	METHYL ALCOHOL 95%			2 OZ	.5 PT	B-7	8	POTTING/SEALING	FL	02/09/87	168
SCOTCHCAST RESIN 281"A"	3M,281 EPOXY RESIN A	EPOXY RESIN 55-65%	TALC(NONASBESTOS)35-45%		1 QT	NA	B-2	11	POTTING/ENCAPSL	NA	02/09/87	169
SCOTCHCAST RESIN 281"B"	3M,281 EPOXY RESIN B	ORGANIC ACID 55-65%	TALC(NONASBESTOS)35-45%	2,4,6-TRIS(DMA)PHENOL	8 OZ	NA	B-2	11	POTTING/ENCAPSL	NA	02/09/87	170
SOLDER	SOLDER	LEAD 50-98%	CADMIUM 1-10%	SILVER .1-5.5%	4 LB	20 LB	VAR	9	ELECT.ASSEMBLY	NR	02/10/87	224
SOLDER (CONT'D)	SOLDER	BISMITH 0-5%	TIN 0-40%	ANTIMONY 0.5-1%	4 LB	20 LB	VAR	9	ELECT.ASSEMBLY	NR	02/10/87	225
SOLDER.ROSIN CORE.#282	ROSIN CORE SOLDER	LEAD 50-98%	CADMIUM 1-10%	ROSIN 3%	4 LB	20 LB	VAR	9	WIRE ATTATCHMNT	NR	02/12/87	323
SS4155 PRIMER	SS4155 SILICONE PRIM	PETROLIUM DISTALATE 70%	TRADE SECRETE 30%	TRADE SECRETE 10 %	1 PT	1 QT	L,M-7	8	SILICONE PRIMER	FL	03/17/87	192
STABILIZER 5GA.(NA9213926	ILFORD.STABILIZER	ACETIC ACID <1%	AMMONIUM THIOCYANATE	SODIUM ACETATE <4%	5 GA	20 GA	2J-4	PL	FILM DEVELOPER	OR	02/11/87	256
STAGLOSS,ALKYD ENAMEL	ENAMEL PAINT	LEAD(PB)	ALIPHATIC HYDROCARBON		NA	NA	J-17	11	PAINT	FL	04/13/87	72
STYCAST 2651 EPOXY	SAME	PHENYL GLYCIDYL ETHER*<3%	EPICHLOROHYDRIN <5 PPM **	*MUTAGENIC** SUSP.CARCINO	2 LB	NA	B-1	11	INSULATION	CL	03/17/87	321
STYCAST 2762 BLACK A	STYCAST,2762	N-BUTYL GLYCIDYL ETHER *	EPICHLOROHYDRIN <5 PPM **	*MUTAGENIC** SUSP.CARCINO	2 LB	2 LB	B-1	11	POTTING/ENCAPSL	OR	03/04/87	194
STYCAST 3180M.PART A	STYCAST.3180	N-BUTYL GLYCIDYL ETHER *	EPICHLOROHYDRIN <5 PPM **	*MUTAGENIC** SUSP.CARCINO	NA	2 LB	K-9	11	POTTING/SEALANT	OR	03/17/87	156
STYCAST 3180M.PART B	STYCAST,3180	COAL TAR <50% *	TETRAETHYLENE PENTAMINE10	ENTAMINETERPHENYLS <2%	NA	2 OZ	K-9	11	POTTING/SEALANT	OR	03/04/87	157
SU 2000	SUPER UNLEADED GAS	TOLUENE 0-25%	XYLENE 0-25%	BENZENE 0.5-2.5%	NA	6000	B-16	1	AUTO FUEL	FL	02/09/87	22
SULFURIC ACID(DILUTE <40%	BATTERY ACID	SULFURIC ACID 28-40%			30 GA		M-9	12	TEST BATTERIES	CO	07/10/87	291
SUNDANCE	FLOOR WAX	FORMALDEHYDE 0.1%			2 GA	10 GA	G-6	11	JANITORIAL	NA	02/10/87	201
TELESOLV	MACHINE CLEANER	POTASIUM HYDROXIDE	BUTYL CELLUSOLVE		1 GA	20 GA	G-8	11	JANITORIAL	OR	02/10/87	240
TELLUS OIL 46	SHELL TELLUS OIL	MINERAL OILS 95%	ADDITIVES <5%		200GA	55 GA	A-12	12	HYDRAULIC OIL	CL	02/10/87	187
THERMOPOXY 80-475	EPOXY VARN.U-475 EH	XYLENE 10-30%	* 2-ETHOXYETHANOL <10%	DIETHYLENE GLYCOL ETHER	5 GA	5 GA	B-2	11	VARNISH THINNER	FL	02/09/87	113
TITRATING SOLUTION #19	SAME	SODIUM HYDROXIDE 3-5%			1 PT	1 QT	F-10	PL	Q.C.TEST	CO	02/09/87	122
TITRATING SOLUTION #31	SAME				1 PT	2 QT	G-10	PL	Q.C.TEST	NA	02/09/87	125

AMERICAN ELECTRONICS INC. HAZARDOUS MATERIALS COMMUNICATION PROGRAM

FULLERTON FIRE DEPARTMENT HAZARDOUS DISCLOSURE ORDINANCE DATE:02-28-88

PRODUCT NAME / CHEMICAL NAME	COMMON NAME / A.K.A.	HAZ. COMPONENT-A	HAZ.COMPONENT-B	HAZ.COMPONENT-C	QTY USE	QTY STORAGE	LOCAT. STORAGE	HOW STORED	HOW USED	HAZ. CODE	RECORD DATE	RECORD NUMBER
TL-102REDUCER(MIL-T-81772	SIKKENS REDUCER	N-BUTYL ACETATE 10%	METHYL ETHYL KETONE 30%	2-ETHOXYETHYL ACETATE>5%	1 GA	5 GA	J-17	11	PAINT	FL	06/12/87	61
TL-29/66 EPOXY PAINT THIN	EPOXY PAINT REDUCER	N-BUTYL ACETATE 10%	METHYL ETHYL KETONE 30%	2-BUTOXY ETHYNOL 12%	1 GA	5 GA	J-17	11	PAINT	FL	06/12/87	62
TOLUENE	TOLUENE	TOLUENE 100%			NA	1 GA	B-7	11	METAL CLEANING	FL	05/04/87	227
TRIMSOL	COOLANT,GRINDING	MINERAL OIL	CHLORONATED WAX		NA	55 GA	A-22	6	CUTTING OIL	CL	02/09/87	46
TT-L-32 NITROCELL.LAQUER	LAQUER PAINT	BUTYL ACETATE 12%	2-ETHOXY ETHONAL <10%	VM&P NAPTHA 15%	NA	2 GA	J-17	11	PAINTING	FL	03/04/87	316
UNION TURMACO 68	TURMACO 68	OIL MIST			5 GA	55 GA	A-22	6	LUBE OIL	CL	02/09/87	42
UNOCAL MAROK 150	MORAK 150 OIL	OIL MIST			200 G	55 GA	A-22	6	HYDRAULIC FLUID	CL	02/09/87	41
URASOLVE PLUS	EPOXY STRIPPER	2-ETHOXYETHANOL 60-80%	POTASIUM HYDROXIDE 2-4%		NA	1 QT	A-1	11	EPOXY STRIPPER	CL	02/11/87	257
V-1650 VARNISH	VIKING FUNGUS SEALER	TOLUENE 55%	M.E.K.25%	ACRYLIC-VINYLCOPOLYMER	8 OZ	NA	G-7	11	FUNGUS SEALER	FL	02/10/87	236
V66 V 27 POLANE CATALYST	POLANE CATALYST,V66	1-METHOXY2PROPANOLACETATE	TOL-DIISOCYANATE POLYMER	FREE ISOCYANATE MONOMR<1%	NA	1 GA	J-18	11	PAINTING	CL	02/10/87	212
WELD-ON 711	P.V.C.PLASTIC GLUE	P.V.C.RESIN	TETRAHYDROFURAN	DIMETHYLFOMAMIDE	.5 PT	NA	NA	11	PLATIC PIPE GLU	FL	03/02/87	84
WITHROW 160 CUT/GRIND OIL	WITHROW 160 OIL	MINERAL OILS 75-100%	CHLORONATED PARAFFINS1-5%		10 GA	55 GA	A-22	6	METAL MACHINING	CL	02/10/87	188
WITHROW LARD OIL ADDITIVE	LARD OIL	LARD OIL 100%			1 GA	5 GA	VAR.	11	CUTTING/MACHING	NR	02/10/87	237
X-361 EPOXY PAINT CATALYS	REACTANT FOR 600-18	ETHYL ACETATE 15-35%	2-ETHOXYETHYL ACETATE>10%	HEXAMETHYLENE DIISCYANATE							03/03/87	286
X-369 EPOXY PAINT CATALYS	CATALYST-463-7-26	ISOBUTYL ALCOHOL 8.8%	ISOPROPYL ALCOHOL 33%	LAQUER DILUENT 35-40%	1 GA	1 GA	J-18	11	PAINTING	FL	03/03/87	284
Z212 SURFACE PLT.CLEANER	SUFACE PLATE CLEANER	FATTY ACIDS 5%	BUTYL CELLOSOLVE <5%	MONOETHANOLAMINE <5%	1 LB	NA	D-6	11	STONE CLEANER	NR	02/11/87	272
Z306 POLY.FLT.BLK.PAINT	Z306 POLY.FLAT BLACK	XYLENE 30%	TOLUENE 15%	CELLOSOLVE ACETATE 20%	NA	1 GA	J-17	11	PAINT	FL	06/12/87	65
ZEP FORMULA 9862	55% NAO4,STRIPPER	SODIUM HYDROXIDE 55%			1 GA	NA	M-7	PL	EPOXY STRIPPER	CO	02/09/87	37
ZEP SUPER FLASH	ZEP FLOOR CLEANER	SODIUM METASILICATE 40-60	ETHYLEN GLYCOLMBUTYLETHER		2 LB	50 LB	G-6	9	FLOOR CLEANING	OR	02/10/87	197
ZINC CHROMATE PRIMER	KOPPERS ZINC CHROMAT	BUTYL ALCOHOL 23%	ISOPROPYL ALCOHOL 58%	ZINC CHROMATE 8.8%	1 GA	1 GA	J-17	11	PAINT	FL	02/09/87	73
ZINC COATALYTE #313		ZINC SULFATE 10%	SULFURIC ACID 3%	ZINC CHLORIDE 5%							05/04/87	217
ZIP AEORSOL D-5010	ZIP SPRAY LUB	DICHLORODIFLOROMETHANE 50	PETROLIUM SOLVENT 35%	MINERAL OIL/WAX 15%	3 PT	1 GA	VAR	11	LUBRICATION	CL	02/11/87	281
ZIP-FIX (CONC.PART-1)		LOW TOXIC ORGANICS <60%	ORGANIC ACID <10%		1 GA	9 GA	2J-4	12	FILM DEVELOPER	NA	02/10/87	26
ZIP-FIX HARDENER(PART-2)					1 PT	1 GA	2J-4	12	FILM DEVELOPER	NA	02/09/87	27

ATTACHMENT B

AMERICAN ELECTRONICS, INC.

UNIFORM HAZARDOUS WASTE MANIFEST

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30
Please print or type. (Form designed for use on e 12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.:
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
AMERICAN ELECTRONICS INC.
1600 E. VALENCIA DR FULLERTON CA 92631
4. Generator's Phone (714) 871-3020

A. State Manifest Document Number: 81828502
B. State Generator's ID: HAH936-012114
C. State Transporter's ID: 810189
D. Transporter's Phone: 213-776-6233
E. State Transporter's ID:
F. Transporter's Phone:

5. Transporter 1 Company Name: RHO-Chem Corp.
6. US EPA ID Number: CAD008364432
7. Transporter 2 Company Name:
8. US EPA ID Number:

9. Designated Facility Name and Site Address
RHO-Chem Corp.
425 ISIS Ave
Inglewood CA 90301
10. US EPA ID Number: CAD008364432

G. State Facility's ID: CAD008364432
H. Facility's Phone: 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. (D001) UN1993 WASTE FLAMMABLE LIQUID, NOS	2	DM	108	G	State 212 / EPA/Other D001
b. Waste Combustible (D001) LIQUID UN1993 ~~WASTE FLAMMABLE LIQUID, NOS~~ NOS	3	DM	162	G	State 213 / EPA/Other D001
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
A- alcohol, acetone, MEK, wash thinner 90%
B. oil, Kerosene, staddard 100% - 10% oil

K. Handling Codes for Wastes Listed Above
a. 01
b. 01
c.
d.

15. Special Handling Instructions and Additional Information
Goggles & Gloves -

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: DONALD WALL
Signature: Donald Wall
Month Day Year: 08 24 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: MICHAEL FULLER # 48804 (S)
Signature: Michael Fuller
Month Day Year: 08 24 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Cosme Cerritos
Signature: [signature]
Month Day Year: 08 24 88

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

INSTRUCTIONS ON THE BACK

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-88)
Please print or type. (Form designed for use on elite (12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD981390909 | Manifest Document No. | 2. Page 1 of | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
AMERICAN ELECTRONICS INC
1600 E VALENCIA DR FULLERTON 92631
4. Generator's Phone (714) 871-3020 CA

A. State Manifest Document Number 87328503
B. State Generator's ID HAH0316-912114

5. Transporter 1 Company Name: Rho-Chem CORP
6. US EPA ID Number: CAD098364432
C. State Transporter's ID 810186
D. Transporter's Phone 213-776-6233

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
Rho-Chem CORP
425 ISIS Ave
INGLEWOOD CA 90301
10. US EPA ID Number: CAD098364432
G. State Facility's ID CAD098364432
H. Facility's Phone 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. (D001) UN1993 WASTE FLAMMABLE LIQUID, NOS (F001)	1	DM	54	G	State 212 / EPA/Other F001 D001
b. (D001) UN1993 WASTE COMBUSTIBLE LIQUID, NOS	1	DM	54	G	State 213 / EPA/Other D001
c. (F002) NA 1693 (RQ) WASTE ORMA LIQUID, NOS	1	DM	54	G	State 211 / EPA/Other F002
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
A. ALCOHOL 30%, ACETONE 20%, MEK 20%, THINNER 30%
B. KEROSENE 30%, STODDARD 70%
C. PERCHLOROETHYLENE 98% OIL 2%

K. Handling Codes for Wastes Listed Above
a. 01 b. 01 c. 01 d.

15. Special Handling Instructions and Additional Information
FACE SHIELD & GLOVES

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
DONALD WALL	Donald Wall	9	23	88

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Richard R Baker Shipping 5410	(3)	09	23	88

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
Cosme Cerritos		09	23	88

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

INSTRUCTIONS ON THE BACK

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-[illegible])
Please print or type. *(Form designed for use on e[illegible] 12-pitch typewriter).*

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.:

2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
AMERICAN ELECTRONICS INC
1600 E VALENCIA DR FULLERTON CA 92631

4. Generator's Phone (714) 871-3020

A. State Manifest Document Number: 87828505

B. State Generator's ID: HAM036-012114

5. Transporter 1 Company Name: RHO-Chem Corp

6. US EPA ID Number: CAD008364432

C. State Transporter's ID: 805364

D. Transporter's Phone: 213-776-6233

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address
RHO-Chem Corp
425 ISIS Ave
INGLEWOOD CA 90301

10. US EPA ID Number: CAD008364432

G. State Facility's ID: CAD008364432

H. Facility's Phone: 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. ~~WASTE ORMA LIQUID, NOS NA1693 (F002) NA1693 NOS~~	~~1~~	~~DM~~	~~54~~	~~G~~	State ~~211~~ DU; EPA/Other ~~F002~~ DU
b. WASTE FLAMMABLE LIQUID, NOS (D001) UN1993 (F001)	2	DM	108	G	State 212; EPA/Other D001
c. WASTE COMBUSTIBLE LIQUID, NOS (D001) UN1993	1	DM	54	G	State 213; EPA/Other D001
d. WASTE COMBUSTIBLE LIQUID, NOS (D001) UN1993	1	DM	54	G	State 221; EPA/Other D001

J. Additional Descriptions for Materials Listed Above
~~(A) Perchloroethylene 98% oil 2%~~
(B) Alcohol, acetone, mek - 98% oil 2%
(C) Stoddard, Kerosene 98%, oil 2%
(D) WASTE OIL & MIXED OIL 100%

K. Handling Codes for Wastes Listed Above
a. b. 01
c. 01 d. 01

15. Special Handling Instructions and Additional Information
FACE shield & Gloves

16.
GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: DON WALL
Signature: Don Wall
Month Day Year: 11 16 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAY GUERRA (4)
Signature: Jay Guerra 52667
Month Day Year: 11 16 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: JERRY L. SADLER
Signature: Jerry L. Sadler
Month Day Year: 11 16 88

GENERATOR / TRANSPORTER / FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

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INSTRUCTIONS ON THE BACK

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-3[illegible])
Please print or type. *(Form designed for use on [illegible] 12-pitch typewriter).*

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.: 002
2. Page 1 of 1
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
AMERILAN ELECT
1600 E. VALENCIA CA 92631 FULLERTON

4. Generator's Phone (714) 871-3020

A. State Manifest Document Number: 87828532
B. State Generator's ID: HAHQ36-0121V4

5. Transporter 1 Company Name: RHO-Chem
6. US EPA ID Number: CAD008364432
C. State Transporter's ID: [redacted] 810186
D. Transporter's Phone: 213-776-6233

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
RHO-Chem Corp
425 ISIS Ave
INGLEWOOD CA 90301
10. US EPA ID Number: CAD008364432
G. State Facility's ID: CAD008364432
H. Facility's Phone: 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE ORM-A LIQUID N.O.S. NA1693	1	DM	55	gal	State 211 / EPA/Other F002
b. WASTE FAMMABLE LIQUID ORM-A, N.O.S. UN1993	1	DM	55	gal	State 211 / EPA/Other F001
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
(A) PERCHLORETHYLENE 80% OIL 20%
(B) PAINT THINNER 60% ACETONE 10% MEK 30%

K. Handling Codes for Wastes Listed Above
a. 01 ~~01~~
b. ~~07~~ 01
c.
d.

15. Special Handling Instructions and Additional Information

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Printed/Typed Name: DONALD WALL
Signature: [signature] Wall
Month Day Year: 06 15 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: KENNETH E. ATKINSON
Signature: [signature] E Atkinson
Month Day Year: 06 15 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Cosme Cerritos
Signature: [signature]
Month Day Year: 06 15 88

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

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INSTRUCTIONS ON THE BACK

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-88)
Please print or type. (Form designed for use on [illegible] 12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.:
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: AMERICAN ELECTRONICS INC 1600 E VALENCIA DR. Fullerton CA 92631
4. Generator's Phone (714) 871-3020

A. State Manifest Document Number: 87828534
B. State Generator's ID: HAHQ36-012114
C. State Transporter's ID: [redacted] 810186
D. Transporter's Phone: 213-776-6233
E. State Transporter's ID:
F. Transporter's Phone:
G. State Facility's ID: CAD008364432
H. Facility's Phone: 213-776-6233

5. Transporter 1 Company Name: RHO-CHEM CORP
6. US EPA ID Number: CAD008364432
7. Transporter 2 Company Name:
8. US EPA ID Number:
9. Designated Facility Name and Site Address: RHO-CHEM CORP 425 ISIS AVE INGLEWOOD CA 90301
10. US EPA ID Number: CAD008364432

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE FLAMMABLE LIQUID NOS N-1993	002	DIM	1100	G	State 214 EPA/Other D001
b. WASTE COMBUSTIBLE LIQUID NOS NA 1993	003	DIM	1150	G	State 213 EPA/Other D001
c. ~~WASTE ORM-H LIQUID NOS NA 1693~~	~~001~~	~~DIM~~	~~1150~~	~~G~~	~~State 214 EPA/Other F002~~
d. WASTE FLAMABLE LIQUID NOS UN 1993	004	DIM	1200	G	State 214 EPA/Other D001

J. Additional Descriptions for Materials Listed Above
A - ALCOHOL 10% MEK. 20% Acetone 20% thinner 50%
B - STODDARD 25% USED OIL 75%
~~C - Perchlorethylene 75% [illegible]~~
D - ISOHALL 31 VARNISH 3% 1200 thinner

K. Handling Codes for Wastes Listed Above
a. 01
b. 01
c.
d. 01

15. Special Handling Instructions and Additional Information

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Printed/Typed Name: DON WALL
Signature: Don Wall
Month Day Year: 06 03 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Richard R. Buker Shipper # 47504
Signature: Richard Buker (9)
Month Day Year: 06 03 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year: 06 03 88

19. Discrepancy Indication Space: Generator's Signature on wrong place.—

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Cosme Cerritos
Signature: [signature]
Month Day Year: 06 03 88

GENERATOR
TRANSPORTER
FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

INSTRUCTIONS ON THE BACK

State of California—Heal and Welfare Agency
Form Approved OMB No 050—0039 (Expires 9-3
Please print or type. (F designed for use on 12-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.:

2. Page 1 of

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: AMERICAN ELECTRONICS INC 1600 E VALENCIA DR. FULLERTON CA 92631

4. Generator's Phone (714) 871-3020

A. State Manifest Document Number: 87828537

B. State Generator's ID: NAA036-012114

5. Transporter 1 Company Name: RHO-CHEM CORP

6. US EPA ID Number: CAD008364432

C. State Transporter's ID: STATE

D. Transporter's Phone: 213-776-6233

7. Transporter 2 Company Name:

8. US EPA ID Number:

E. State Transporter's ID:

F. Transporter's Phone:

9. Designated Facility Name and Site Address: RHO-CHEM CORP 425 1515 AVE INGLEWOOD CA 90301

10. US EPA ID Number: CAD008364432

G. State Facility's ID: CAD008364432

H. Facility's Phone: 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. COMBUSTIBLE WASTE ~~FLAMMABLE~~ LIQUID N.O.S. NA-1993	004	DM	2112	G	State 214 EPA/Other D001
b. WASTE FLAMMABLE LIQUID NOS NA 1993	004	DM	2112	G	State 213 EPA/Other
c.					State D001 EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
A- KEROSENE 10%-STODDARD 60%-OIL 30%
B- ALCOHOL 20%- ACETONE 30%- MEK 30% SOLVENT 20%

K. Handling Codes for Wastes Listed Above
a. b. c. d.

15. Special Handling Instructions and Additional Information

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Printed/Typed Name: [illegible] Signature: [illegible] Month Day Year: 03 11 88

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: JAY GUERM (8) Signature: Jay Guerm 48017 Month Day Year: 03 21 88

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name: Signature: Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Signature: Month Day Year:

GENERATOR

TRANSPORTER

FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

YELLOW: GENERATOR RETAINS

INSTRUCTIONS ON THE BACK

State of California—Health and Welfare Agency
Form Approved OMB No. 2050—0039 (Expires 9-30-
Please print or type. (Form designed for use on e 2-pitch typewriter).

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.:
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
AMERICAN ELECTRONICS, INC.
1600 E. VALENCIA DR. FULLERTON, CA. 92631

A. State Manifest Document Number: 87411601

4. Generator's Phone (714) 871-3020

B. State Generator's ID: HAH0316-0121114

5. Transporter 1 Company Name: RHO-CHEM CORP
6. US EPA ID Number: CAD009836443
C. State Transporter's ID: 709983
D. Transporter's Phone: 213-776-6233

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address
RHO-CHEM CORP
425 ISIS AVE.
INGLEWOOD, CA. 90301
10. US EPA ID Number: CAD009836443
G. State Facility's ID: CAD009836443
H. Facility's Phone: 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE ORM-A LIQUID, N.O.S. NA-1693	002	DM	00108	G	State 211 / EPA/Other F002
b. WASTE ORM-A LIQUID, N.O.S. NA-1693	002	DM	00108	G	State 211 / EPA/Other F002
c. WASTE ORM-A LIQUID, N.O.S. NA-1693	001	DM	00054	G	State 211 / EPA/Other F002
d.	21				State / EPA/Other

J. Additional Descriptions for Materials Listed Above
a. PERCHLOROETHYLENE - 80% OIL - 20%
b. TRICHLOROTRIFLUOROETHANE - 80% OIL - 20%
c. 1-1-1 TRICHLOROETHANE - 80% OIL - 20%

K. Handling Codes for Wastes Listed Above
a. 01
b. 01
c. 01
d.

15. Special Handling Instructions and Additional Information

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GENERATOR

Printed/Typed Name: THOMAS R CASSELBERRY
Signature: Thomas R Casselberry
Month Day Year: 11 12 87

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Richard R Baker Shipper # 39351
Signature: Richard R Baker
Month Day Year: 11 12 87

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Month Day Year:

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Chief Earley
Signature: Chief Earley
Month Day Year: 11 10 87

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
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INSTRUCTIONS ON THE BACK

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Form Approved OMB No. 2050—0039 (Expires 9-3[illegible])
Please print or type. *(Form designed for use on e[illegible] 12-pitch typewriter).*

Department of Health Services
Toxic Substances Control Division
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: CAD981390909
Manifest Document No.:
2. Page 1 of
Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address: AMERICAN ELECTRONICS, INC. 1600 E. VALENCIA DR. FULLERTON, CA. 92631
4. Generator's Phone (714) 871-3020
A. State Manifest Document Number: 87411602
B. State Generator's ID: HA4836-012114
5. Transporter 1 Company Name: RHO-CHEM CORP
6. US EPA ID Number: CAD008364432
C. State Transporter's ID: 709923
D. Transporter's Phone: 213-776-6233
7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:
9. Designated Facility Name and Site Address: RHO-CHEM CORP. 425 ISIS AVE INGLEWOOD, CA. 90301
10. US EPA ID Number: CAD008364432
G. State Facility's ID: CAD008364432
H. Facility's Phone: 213-776-6233

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. WASTE FLAMMABLE LIQUID, N.O.S. UN-1993	008	DM	00432	G	State 214 / EPA/Other D001
b. WASTE COMBUSTIBLE LIQUID, N.O.S. NA-1993	007	DM	00378	G	State 213 / EPA/Other D001
c.	21				State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
a. PAINT THINNER - 60% ACETONE - 10% PAINT - 30%
b. KEROSENE - 50% STODDARD SOLVENT - 20% OIL - 30%

K. Handling Codes for Wastes Listed Above
a. 07 b. 07
c. d.

15. Special Handling Instructions and Additional Information

87411602

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

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Printed/Typed Name: THOMAS R CASSELBERRY
Signature: Thomas R Casselberry
Month Day Year: 11 12 87

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Richard R Buker Shipper # 39351
Signature: Richard R Buker (15)
Month Day Year: 11 02 87

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year:

19. Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Chet Earley
Signature: Chet Earley
Month Day Year: 11 02 87

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA CALL 1-800-852-7550

DHS 8022 A (1/87)
EPA 8700—22
(Rev. 9-86) Previous editions are obsolete.

Yellow: TSDF SENDS THIS COPY TO GENERATOR WITHIN 30 DAYS

INSTRUCTIONS ON THE BACK

ATTACHMENT C

CITY OF FULLERTON

WELL LOGS

RJS

AGENCY CITY OF FULLERTON PARER LARRY SEARS 11/5/87

WATER LEVEL MEASUREMENTS

Measurement Date	WELL DESIGNATION			Reference Point Elev. w/Respect MSL (Feet)	MEASUREMENTS		CALCULATIONS	
	Agency No.	OCWD MPFN	State Well No.		Dist. to Static Water Surface (feet)	Distance to Pumping Water Surface (feet)	Static Water Level After Non-Pumping Elev. w/Respect to MSL	Pumping Water Level During Pumping Elev. w/Respect to MSL
11/4/87	1	73-11-6-A	35-10W-35N1	161.2	CANNOT SOUND			
	2	73-12-13-A	35-10W-35R1	182.9	140	145	42.9	37.7
	3	34-01-12-B	45-10W-4R1	144.7	CANNOT SOUND		—	—
	4	34-01-12-C	45-10W-4R3	145.5	173	180	-27.5	-34.5
	5	34-01-12-E	45-10W-4R5	142.2	147	155	-4.8	-12.8
	6	34-01-12-F	45-10W-4R7	141.9	148	155	-6.1	-14.1
	7	34-01-12-G	45-10W-4R7	142.0	150	159	-8.0	-17.0
	8	34-01-12-H	45-10W-4R9	141.9	168	174	-26.1	-32.1
	9	30-01-45-A	5-11W-36A5	86.9	102	136	-15.1	-47.1
	12	28-03-1-A	35-10W-3181	270.8	OUT OF SERVICE		—	—
	13	33-270-14A	35-10W 35K1	180.0	135	165	45.0	15.0
	14	28-01-5-B	35-10W-17R2	327.0	OUT OF SERVICE		—	—

OCWD E-4b
2/87

Fwd

City of Fullerton — AGENCY

November 7, 1985 — DATE

col. 1	col. 2	col. 3	col. 4	col. 5	col. 6	col. 5 – col. 6	col. 5 – dist. to pumping
MEASUREMENT DATE	AGENCY WELL NO.	OCWD WPF NO.	STATE WELL NO.	REF PT ELEV (ELEV W/RESPECT TO MSL)	DIST TO WATER SURF. (FEET)	*STATIC WATER LEVEL AFTER NON-PUMPING (ELEV W/RESPECT TO MSL)	*PUMPING WATER LEVEL DURING PUMPING (ELEV W/RESPECT TO MSL)
	KIMBERLY #1	73-11-6-A	3S-10W-35NI	161.2	CANNOT SOUND		
	KIMBERLY #2	73-12-13-A	3S-10W-35RI	182.9	122	60.9 ✓	
	MAIN PLANT #3	34-01-12-B	4S-10W-4RI	144.7	CANNOT SOUND		
	MAIN PLANT #4	34-01-12-C	4S-10W-4R3	145.5	162	16.5 ✓	
	MAIN PLANT #5	34-01-12-E	4S-10W-4R5	142.2	138	4.2 ✓	
	MAIN PLANT #6	34-01-12-F	4S-10W-4R4	141.9	136	5.9 ✓	
	MAIN PLANT #7	34-01-12-G	4S-10W-4R7	142.0			
	MAIN PLANT #8	34-01-12-H	4/10-4R8	141.9	145	- 3.1 ✓	
	COYOTE #12	28-03-1-A	3S-10W-30B1	270.8	219	51.8 ✓	
	FIRE STA. #13	33-270-14A	3S-10W-35E1	180.0	122	58.0 ✓	
	PIONEER #14	28-01-5-B	3S-10W-19R2	327.2	220 - 151 = 69	176.2 ✓	

1984 STATIC

113
114 ✓
117
155 ✓
129 ✓
130 ✓
139
124
216 ✓
120 ✓
165 +1

* PLEASE ENTER AMOUNT OF TIME PUMP HAD BEEN OFF OR RUNNING PRIOR TO MEASUREMENT

OCWD Form E-6
FOR OCWD ENGINEERS REPORT

O.C.W.D. NOV 13 1985

AGENCY CITY OF FULLERTON PREPARER LARRY SEARS 11/12/86

WATER LEVEL MEASUREMENTS

Measurement Date	WELL DESIGNATION: Agency No.	OCWD MPFN	State Well No.	Reference Point Elev. w/Respect MSL (Feet) *	USGS DATUM	MEASUREMENTS: Dist. to Static Water Surface (feet)	Distance to Pumping Water Surface (feet)	CALCULATIONS: Static Water Level After Non-Pumping Elev. w/Respect to MSL *	Pumping Water Level During Pumping Elev. w/Respect to MSL *	1985 STAT DIST TO H2O	- YR
11/4/86	1	73-11-6-A	3S-10W-35NI	161.2	167.0	CANNOT	SOUND	(USGS) (FULLERTON)	---	—	
	2	73-12-13-A	3S-10W-35RI	182.9	188.7	129	137	+59.7 53.9 ✓	45.9	122	-7 ✓
	3	34-01-12-B	4S-10W-4RI	144.7	150.5	CANNOT	SOUND	---	---	—	
	4	34-01-12-C	4S-10W-4R3	145.5	151.3	161	166	-9.7 ✓ -15.5 ✓	-20.5	162	+1 ✓
	5	34-01-12-E	4S-10W-4R5	142.2	148.0	140	145	+8.0 ✓ 2.2 ✓	- 2.8	138	-2 ✓
	6	34-01-12-F	4S-10W-4R4	141.9	147.7	140	146	+7.7 ✓ 1.9 ✓	- 4.1	136	-4 ✓
	7	34-01-12-G	4S-10W-4R7	142.0	147.8	137	150	+10.8 ✓ 5.0 ✓	- 8.0	—	—
	8	34-01-12-H	4/10-4R8	141.9	147.7	155	168	-7.3 ✓ -13.1 ✓	-26.1	145	-10 ✓
	9	72-02-5-A	4/10-5E1	86.9	92.7	98	136	-5.3 ✓ -11.1 ✓	-49.1	—	
	12	28-03-1-A	3S-10W-30B1	270.8	276.6	221	226	+55.6 ✓ 49.8 ✓	44.8	219	-2 ✓
	13	330270-14A	3S-10W-35M1	180.0	185.8	133	162	+52.8 47.0 ✓	18.0	122	-11 ✓
	14	28-01-5-B	3S-10W-19R2	327.2	333.0	150	169	+183.0 177.2 ✓	158.2	151	+1 ✓

(5.8')

*City of Fullerton datum-add approximately ~~six~~ feet to convert to USGS datum.

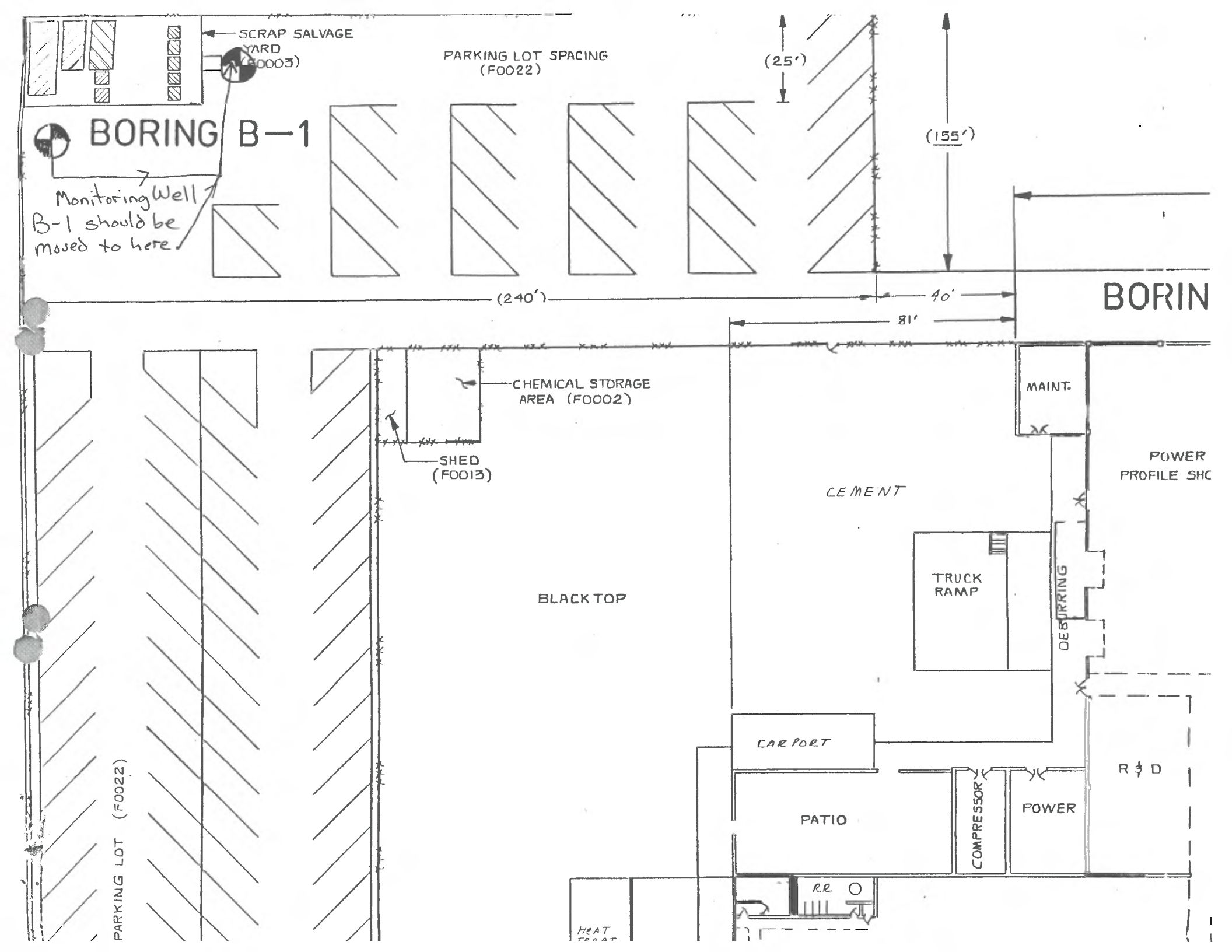
ATTACHMENT D

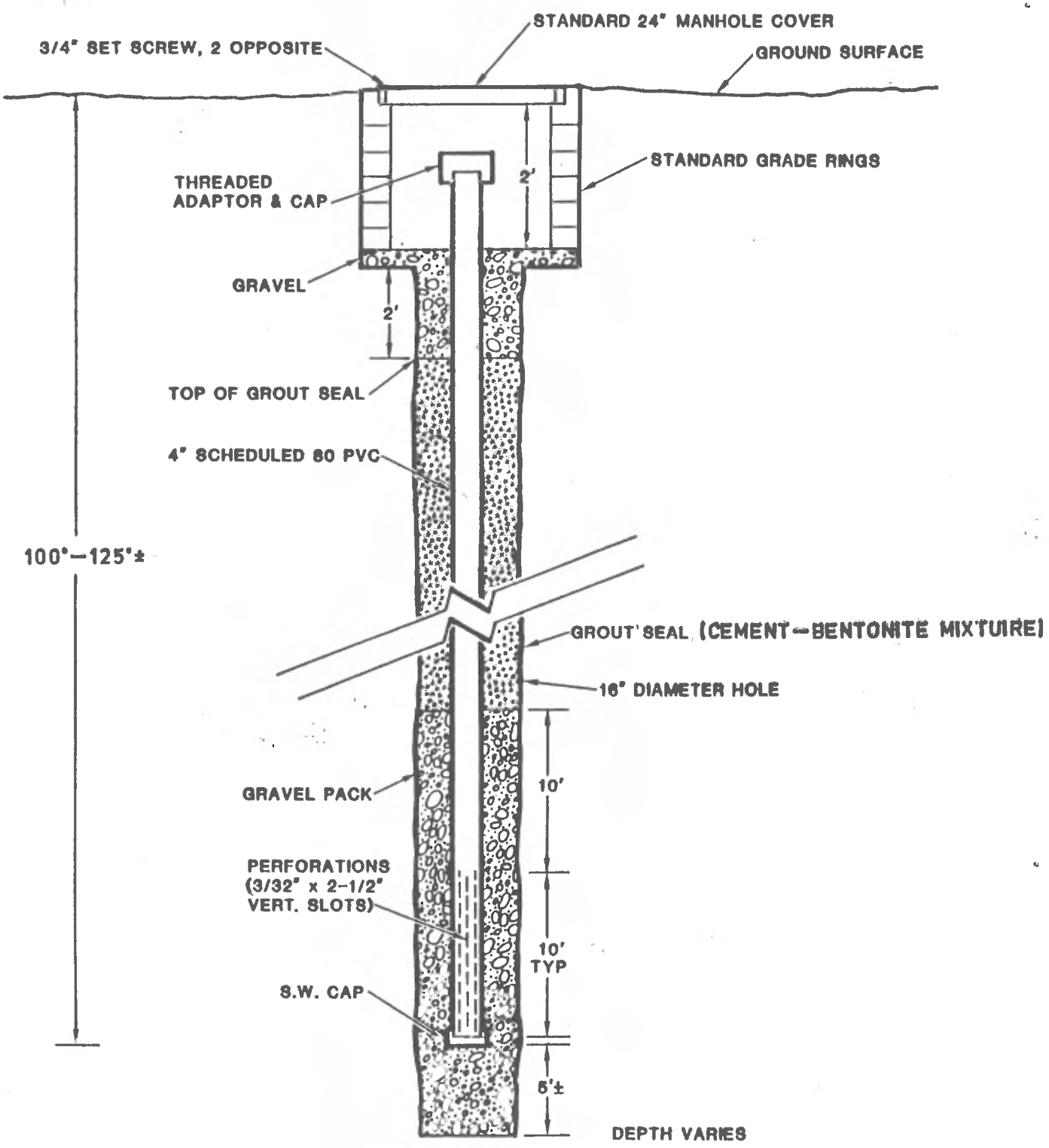
AMERICAN ELECTRONICS, INC.

PLOT PLAN

AND

MONITORING WELL CONSTRUCTION DETAILS


SCRAP SALVAGE YARD (F0003)
PARKING LOT SPACING (F0022)
(25')
(155')
BORING B-1
Monitoring Well B-1 should be moved to here
(240')
40'
81'
BORIN
CHEMICAL STORAGE AREA (F0002)
SHED (F0013)
MAINT.
POWER
PROFILE SHC
CEMENT
TRUCK RAMP
DEBURRING
BLACK TOP
CAR PORT
R & D
PATIO
COMPRESSOR
POWER
R.R.
HEAT
PARKING LOT (F0022)



NOT TO SCALE

Well Construction Details

ATC ASSOCIATES INC.
ENVIRONMENTAL, GEOTECHNICAL AND MATERIALS PROFESSIONALS

JAN 1998
Received
CRWQCB
Santa Ana Region 8

8 January 1998
14240.0003

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Attention: Mr. Augustine Anijielo

SUBJECT: DECEMBER 1997 GROUNDWATER MONITORING REPORT FOR THE AMERICAN ELECTRONICS, INC. FACILITY, LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report summarizes the activities and results of the December 1997 round of groundwater monitoring conducted on 4 December 1997 at the American Electronics, Inc. (AEI) facility (site) located at 1600 East Valencia Drive, Fullerton, California (Figure 1). This round of groundwater monitoring was conducted at the request of the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) and this letter report is presented to you at the request and authorization of Mr. William E. Holland of AEI.

The locations of the four wells that were sampled at the site, designated BP-2, BP-3, BP-4 and BP-8 are shown in Figure 2. Monitoring wells BP-1, BP-5, BP-6, and BP-7 were abandoned in 1996 in accordance with the conditions stated in the RWQCB review letter dated 20 June 1996 (RWQCB, 1996). The well abandonment procedures were documented in a letter to the RWQCB dated 6 December 1996 (ATC Environmental Inc., 1996). Fifteen rounds of groundwater monitoring samples have been collected from monitoring wells BP-2 and BP-3 since their installation in March 1989; thirteen rounds of groundwater monitoring samples have been collected from monitoring well BP-4 since its installation in December 1990; and seven rounds of groundwater monitoring samples have been collected from off-site monitoring well BP-8 since its installation in July 1993.

OBJECTIVE

The objective of the work summarized in this report was to monitor the spatial and temporal changes in the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

APPLIED GEOSCIENCES INC.
Environmental Consultants

29B Technology Drive
Suite 100
Irvine, CA 92718
TEL: 714/453-8545
FAX: 714/453-0510

6 July 1992
A901978D
AED-4

California Regional Water Quality Control Board
Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, California 92507-2409

Attention: Mr. Dennis L. Merklin

SUBJECT: SECOND ROUND OF QUARTERLY GROUNDWATER MONITORING FOR THE AMERICAN ELECTRONICS INC. FACILITY LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Merklin:

This letter report presents the results of the second round of quarterly groundwater monitoring conducted at the American Electronics, Inc. facility (site), located at 1600 East Valencia Drive, Fullerton, California (Figure 1). The work was conducted by Applied Geosciences Inc. in general accordance with Amendment 1 to Attachment 4 to the existing contract between Applied Geosciences Inc. and American Electronics. The results of a subsurface investigation and the first round of quarterly groundwater monitoring at the site were summarized in a letter report to the Regional Water Quality Control Board dated 18 March 1992.

OBJECTIVE

The objective of the work summarized in this report was to monitor the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

SCOPE OF WORK

The scope of work developed to meet the objectives included the following.

- Task 1: Groundwater Monitoring

  This task included measurement of groundwater elevations, purging wells of standing water, and collection of groundwater samples for chemical analysis from

five of the six groundwater monitoring wells located at the site. Groundwater monitoring well BP-1 was not included in the monitoring program because of the lack of groundwater in that well in previous rounds of groundwater monitoring.

- Task 2: Laboratory Analyses

  Groundwater samples from each of the five wells were analyzed for VOCs and turbidity in general accordance with U.S. Environmental Protection Agency (EPA) Method Nos. 601/602 and 180.1, respectively.

- Task 3: Data Evaluation, Reporting, and Project Management

  This task consisted of management of the field activities and preparation of this report.

GROUNDWATER MONITORING

Groundwater Sampling

Groundwater level measurements were conducted on 14 May 1992 in accordance with the groundwater sampling procedures presented in Appendix A (Section A1.0). The results are listed in Table 1. Groundwater samples were collected on 14 and 15 May 1992 in accordance with the groundwater sampling procedures presented in Appendix A (Section A1.0). Well BP-1 was not sampled because it had contained only approximately 2 feet of measurable groundwater in December 1990, approximately 0.5 foot in June 1991, approximately 1 foot in December 1991, and it was judged that this well would not provide a representative groundwater sample. As mentioned in our previous report, well BP-5 was installed to replace well BP-1 for this reason (Applied Geosciences Inc., 1991). Groundwater samples collected from the wells were submitted for chemical analyses as discussed below to Orange Coast Analytical, Inc. of Tustin, California, a State-certified laboratory. Groundwater collection logs are presented in Appendix A.

ANALYTICAL RESULTS

Groundwater Samples

Groundwater samples were analyzed for VOCs in general accordance with EPA Method No. 601/602. A companion sample of each was analyzed for turbidity in general accordance with EPA Method No. 180.1. Results of the VOC laboratory analyses are summarized in Table 2, and the laboratory reports are presented in Appendix B. Table 2 also presents the analytical results for the groundwater samples collected during previous investigations by Applied Geosciences Inc. and others; and the maximum contaminant levels (MCLs) as published in the California Code of Regulations (CCR), Title 22, for the given chemical constituents.

Two VOCs, trichloroethene (TCE) and tetrachloroethene (PCE), were detected in the groundwater samples collected during this phase of the investigation. The highest reported concentration of TCE was 300 ppb in the sample collected from well BP-6, and the lowest concentration of TCE reported was 21 ppb in the sample collected from well BP-2.

The highest reported concentration of PCE encountered during this phase of the investigation was 30 ppb in the sample collected from well BP-6 and the lowest concentration of PCE reported was 1.5 ppb in the sample collected from well BP-4.

DISCUSSION

Groundwater Monitoring

The groundwater gradient is interpreted to be relatively flat with a general flow direction to the west and northwest (Figure 2). The relatively flat groundwater gradient makes accurate assessments of the groundwater flow direction difficult, and fluctuations have been observed between groundwater monitoring dates. Groundwater elevations were observed to have risen approximately 6.5 feet in each of the six wells at the site between the last elevation measurement in December 1991 and this round of monitoring (Table 1).

VOCs detected in groundwater samples collected during this round of monitoring were TCE and PCE; no other VOCs were detected above their respective detection limits.

Should you have any questions regarding the information contained in this letter report, please feel free to contact either of us at your convenience.

Very truly yours,
APPLIED GEOSCIENCES INC.

Mark S. Cousineau, R.E.A.
Associate

Craig A. Metheny, R.E.A.
Project Manager

Elliot Leventhal
Staff Scientist

ATTACHMENTS

Table 1: Groundwater Elevation Measurements
Table 2: Laboratory Analytical Results of Groundwater Samples Collected to Date
Figure 1: Site Vicinity Map
Figure 2: Groundwater Elevations Measured 14 May 1992
Appendix A: Summary of Field Procedures
Appendix B: Laboratory Analytical Reports

cc: John Allen, Esq., Graham & James
Mr. Richard F. Holland, American Electronics
David T. Peterson, Esq., Hill, Wynne, Troop and Meisinger
Mr. Fred B. Warburton, Yokohama Tire Center

REFERENCES

Applied Geosciences Inc., 1991, Phase II subsurface investigation for the American Electronics Inc. facility located at 1600 East Valencia Drive in the city of Fullerton, California: Dated 30 August 1991.

Applied Geosciences Inc., 1992, Additional subsurface investigation and first quarterly round of groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California: Dated 18 March 1992.

TABLE 1

GROUNDWATER ELEVATION MEASUREMENTS

GROUNDWATER SURFACE MEASUREMENTS												
Well Number	BP-1		BP-2		BP-3		BP-4		BP-5		BP-6	
Elevation of the Top of the Well Casing	178.14		183.13		180.61		179.89		177.69		177.31	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
1/10/91	136.68	41.46	141.81	41.32	139.34	41.27	138.50	41.39	136.80	40.89	NM	NM
1/17/91	136.74	41.40	141.90	41.23	139.34	41.27	138.49	41.40	136.80	40.89	NM	NM
1/30/91	137.13	41.01	142.30	40.83	139.79	40.82	138.95	40.94	137.31	40.38	NM	NM
6/21/91	NM	NM	143.19	39.94	140.66	39.95	139.76	40.13	138.09	39.60	137.50	39.81
7/15/91	138.39	39.75	143.55	39.58	141.05	39.56	140.15	39.74	138.50	39.19	137.93	39.38
12/19/91	138.05	40.09	143.05	40.08	140.40	40.21	139.34	40.55	137.75	39.94	137.35	39.96
5/14/92	131.71	46.43	136.50	46.63	134.13	46.48	132.77	47.12	131.34	46.35	130.90	46.41

Notes:

Elevation data are given in feet above mean sea level.
Depth = depth-to-groundwater measured in feet below top of well casing.
NM = no groundwater measurements were made.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Turbidity	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									
			Benzene	Toluene	Xylenes	Ethyl Benzene	PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	DCE	Meth. Chloride	Chloro-form	Chloro-benzene
BB	1/11/91	NA	(0.2)	(0.1)	(0.8)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.8)
	1/30/91	NA	(0.2)	(0.1)	(0.8)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	0.6	21	(0.3)	1.6
Trip Bl.	12/19/91	NA	0.2	(0.2)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	14 B	(0.3)	(0.2)
Lab Bl.	1/30/91	NA	(0.2)	0.5	0.6	(0.2)	(0.3)	(0.3)	(0.3)	0.3	(0.4)	(0.4)	(0.6)	5.6	(0.3)	1.6
	6/28/91	NA	0.5	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	0.8	(0.3)	(0.2)
	7/16/91	NA	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.2)	(0.2)	(0.6)	1.4	(0.3)	(0.2)
	12/19/91	NA	(0.2)	(0.2)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	1.6	(0.3)	(0.2)
	12/19/91	NA	(0.2)	0.5	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	0.4	(0.3)	(0.2)
BP-1	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	290	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	1500	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
	7/02/90	NA	NA	NA	NA	NA	(25)	230	(25)	(25)	(25)	(25)	(25)	(25)	89	(25)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	520	(2)	(2)	(2)	(2)	(2)	(5)	(2)	(2)
BP-2	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	40	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	110	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	6	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	1/10/91	82	(0.2)	(0.7)	(0.8)	(0.2)	50	36	1	(0.3)	(0.4)	(0.4)	(0.6)	(0.3)	(0.3)	(0.8)
	1/30/91	15	(0.2)	(0.2)	(0.2)	(0.2)	54	40	2.6	(0.3)	(0.4)	(0.4)	6.8	21	0.4	1.7
	7/16/91	70	(0.4)	0.4	0.3	(0.2)	68	43	1.1	(0.3)	(0.4)	(0.4)	(0.6)	1.1	(0.3)	(0.2)
	12/23/91	15	(0.2)	0.6	0.6	(0.3)	29	19	0.6	(0.3)	(0.4)	(0.4)	1.2	1.4 B	(0.3)	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	19	21	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)

TABLE 2 (Continued)
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Turbidity	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									
			Benzene	Toluene	Xylenes	Ethyl Benzene	PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	DCE	Meth. Chloride	Chloro-form	Chloro-benzene
BP-3	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	40	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	40	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	30	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	1/10/91	32	(0.2)	(0.7)	3.1	0.7	7.7	6.5	0.3	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.3)
	1/30/91	25	(0.2)	(0.2)	(0.2)	(0.2)	75	41	2	(0.3)	(0.4)	(0.4)	6.8	19	0.4	1.6
	7/16/91	7.8	(0.2)	0.5	(0.2)	(0.2)	32	19	0.4	(0.3)	(0.4)	(0.4)	(0.6)	1.1	(0.3)	(0.2)
	12/23/91	7	0.2	0.6	0.6	(0.3)	26	31	0.6	(0.3)	(0.4)	(0.4)	1.2	1.6 B	(0.3)	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	5.4	42	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
BP-4	1/11/91	120	(0.2)	(0.7)	(0.8)	(0.2)	2	4	0.4	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.3)
	1/30/91	85	(0.2)	(0.2)	(0.2)	(0.2)	2.1	3.9	(0.3)	(0.3)	(0.4)	(0.4)	2.1	20	(0.3)	1.7
	7/16/91	17	(0.2)	(0.2)	(0.2)	(0.2)	9	7	0.3	(0.3)	(0.4)	(0.4)	(0.6)	1	(0.3)	(0.3)
	12/26/91	10	0.2	1.4 B	0.4	(0.3)	4.2	15	0.6	(0.3)	(0.4)	(0.4)	1.2	17 B	0.6	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	15	24	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
BP-5	1/11/91	125	(0.2)	(0.7)	(0.8)	(0.2)	35	68	1.3	(0.3)	(0.4)	(0.4)	(0.6)	(5)	0.8	(0.3)
	1/30/91	NA	(0.2)	(0.2)	(0.2)	(0.2)	40	85	2.8	(0.3)	(0.4)	(0.4)	3.5	19	1.7	1.3
	7/16/91	7.7	0.2	0.3	(0.2)	(0.2)	53	65	1.1	(0.3)	0.5	(0.4)	(0.6)	1.1	0.7	(0.2)
	12/23/91	18	0.6	1.2	0.6	(0.3)	170	260	7.8	(0.3)	3.6	3.6	(0.6)	11 B	5.4	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	22	190	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
BP-6	6/28/91	86	1.2	0.2	1	0.9	7.5	71	(0.3)	(0.3)	(0.4)	0.5	(0.6)	0.6	0.3	(0.2)
	7/18/91	23	(0.2)	(0.2)	(0.2)	(0.2)	6	48	(0.3)	(0.3)	(0.4)	0.4	(0.6)	1	(0.3)	(0.2)
	12/24/91	7	0.4	0.4	0.6	(0.3)	11	17	0.4	(0.3)	(0.4)	(0.4)	(0.6)	25 B	(0.3)	(0.2)
BP-6	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	3.0	300	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
MCL			1	100*	1750	680	5	5	200	32	5	0.5	6	40*	N/A	30

TABLE 2 (Continued)
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Groundwater samples were analyzed in general accordance with EPA Methods No. 8010/8020 or 601/602. Only compounds reported to have been detected in concentrations greater than the detection limits are included in the table.

Concentrations are reported in micrograms per liter (μg/L) (1 μg/L is equivalent to 1 part per billion [ppb]). Values in parentheses denote nondetection at the enclosed detection limit.

Samples collected on 4/05/89, 9/02/89, and 8/20/90 were collected by Ray .E. Lewis Consulting Engineers, Inc. (REL).

PCE = tetrachloroethylene

TCE = trichloroethylene

1,1,1-TCA = 1,1,1-trichloroethane

1,1,2-TCA = 1,1,2-trichloroethane

1,1-DCA = 1,1-dichloroethane

1,2-DCA = 1,2-dichloroethane

DCE = dichloroethene

Meth. Chloride = methylene chloride

BB = Blank samples were prepared by pouring deionized water directly into the volatile organic analysis vials.

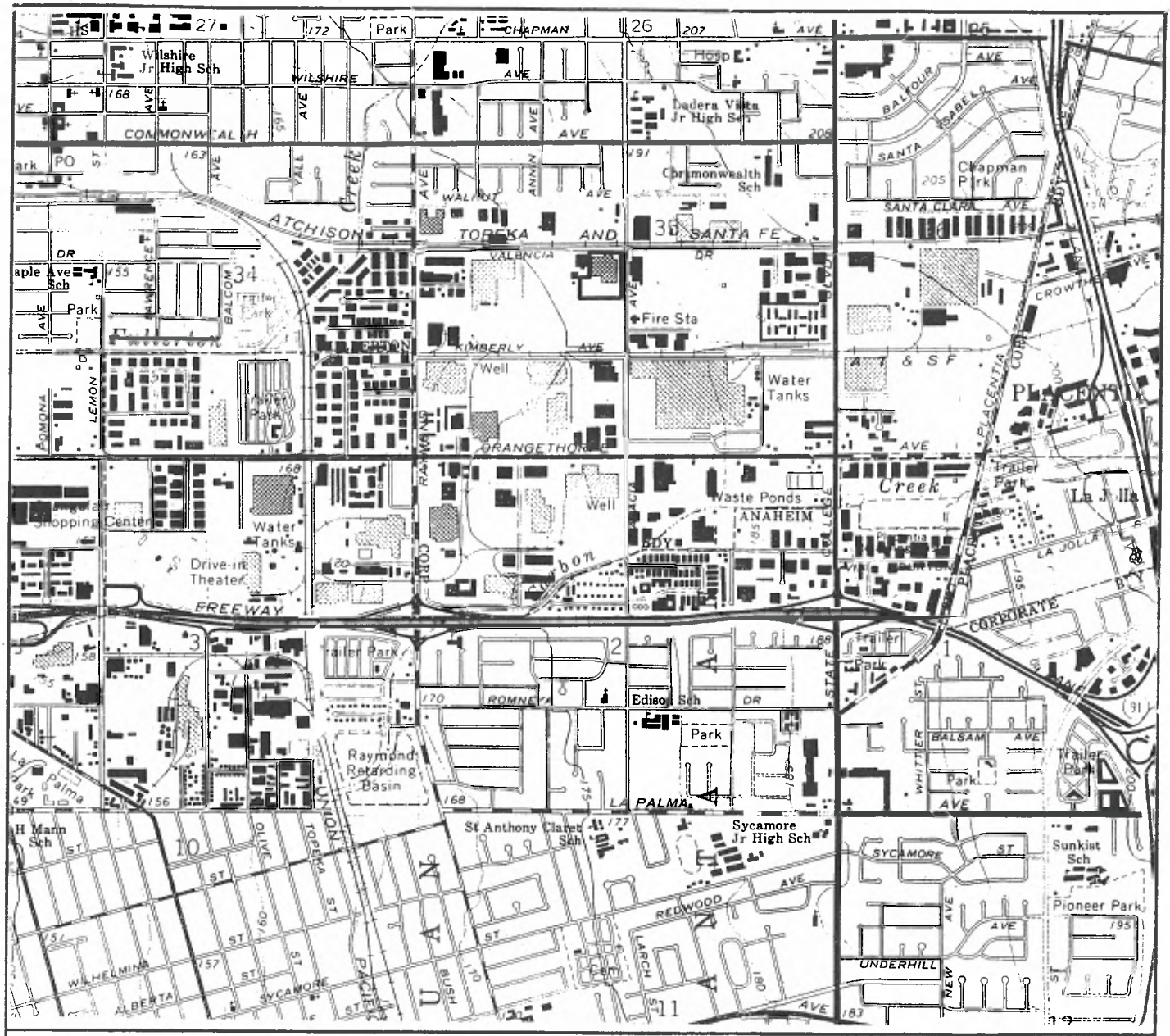
NA = not analyzed

Trip Bl. = Trip blank.

Lab Bl. = Laboratory-prepared blank analyzed as part of West Coast Analytical Service, Inc.'s internal quality control.

Values accompanied by a "B" denote that the substance was also detected in the blank sample.

MCL = maximum contaminant level published in the California Code of Regulations, Title 22. California action levels are listed for methylene chloride and toluene, as MCLs are not available for these chemicals.



NOTE

BASE MAP TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA-ORANGE CO., 7.5-MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

EXPLANATION

SITE

NORTH

0 ½ 1

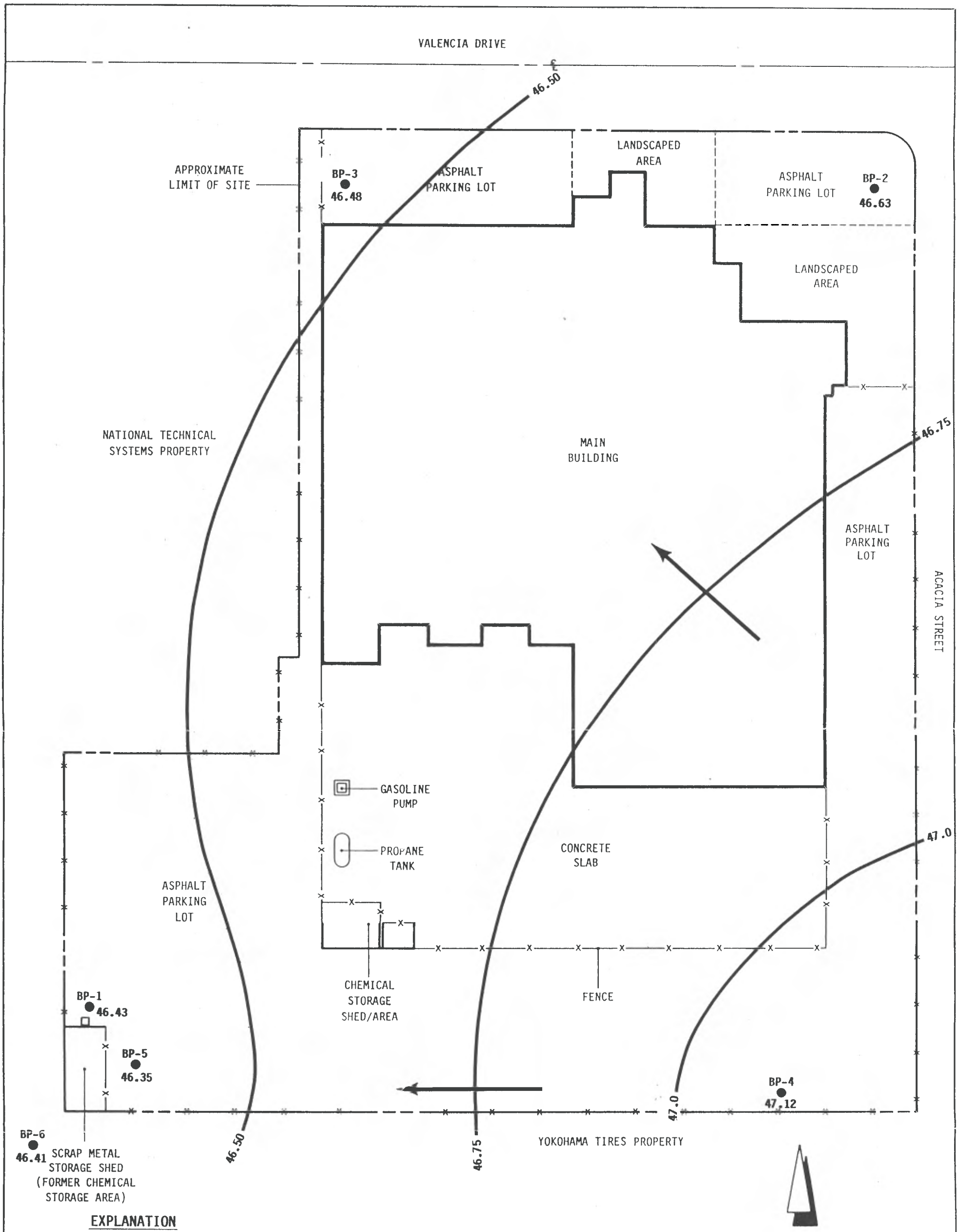
SCALE, MILES

APPLIED GEOSCIENCES INC.

Engineering Geology and Hazardous Materials Consultants

SITE VICINITY MAP

PROJECT NUMBER A901978D | FIGURE 1



EXPLANATION

BP-1 ● 46.43 — MONITORING WELL LOCATION AND DESIGNATION WITH GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL

← APPROXIMATE DIRECTION OF GROUNDWATER FLOW

46.50 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL = 0.25 FEET)

□ CONCRETE-LINED SUMP

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN - PLUMBING", BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960
3) GEOSTATISTICAL METHOD OF "KRIGING" USED TO INTERPRET GROUNDWATER CONTOURS

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

GROUNDWATER ELEVATIONS
MEASURED 14 MAY 1992

PROJECT NUMBER A901978D | FIGURE 2

APPENDIX A

SUMMARY OF FIELD PROCEDURES AND GROUNDWATER COLLECTION LOGS

APPENDIX A

SUMMARY OF FIELD PROCEDURES

A1.0 WATER-SAMPLE COLLECTION PROCEDURES

1. Field activities and equipment utilization were recorded on a field report form.

2. The water level and depth to the bottom of each well was measured using a conductance probe; the measurements were recorded to the nearest 0.01 foot. Prior to use, the probe was rinsed in a solution of TSP, followed by two deionized-water rinses.

3. A water sample was collected following purging of three well volumes of water and stabilization of pH, temperature, and electrical conductivity readings to within 5 percent of each other for three consecutive measurements. Measurements of pH, temperature and electrical conductivity were recorded on groundwater collection logs enclosed herein. Well volumes were estimated using the following equation:

$$\text{well volume} = (\text{pi})\ (\text{h})\ [0.3(r_2^2 - r_1^2) + r_1^2)]$$

4. A 55-gallon drum was used to measure the volumes of water removed.

5. Stainless-steel bailers were used for sampling the wells. The bailers were triple rinsed with deionized water prior to their use.

6. Water samples were collected by lowering the bailer approximately 3 to 5 feet below the static water level, and raising the bailer slowly in order to minimize agitation of the water sample in the bailer.

7. Water was discharged from the bailer through a bottom discharge valve. Discharge to the sample container was at a rate slow enough to minimize bubbling or significant agitation of the liquid. The sample container was filled to the top (from the bottom up) and overfilled with the intention of having no remaining headspace.

8. Samples were collected in laboratory-approved 40-millimeter (ml) glass vials with Teflon septum lids.

9. Following collection. all samples were placed in an ice chest cooled with ice to a temperature of approximately 40 to 50 degrees Fahrenheit.

10. Samples were delivered to the laboratory within approximately 24 hours of collection. Sample handling, transport, and delivery to the laboratory was documented using chain-of-custody procedures, including the use of chain-of-custody forms.

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP2
WELL NO.: BP2
PAGE: 1 OF 1
DATE: 5/15/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
8:20	30	6.75	1190	19.7	Slightly turbid
8:25	40	6.92	1190	19.7	
8:30	60	7.08	1190	19.7	Becomes clear
8:34	70	7.11	1180	19.5	
8:38	80	7.20	1180	19.7	
8:43	90	7.22	1190	19.8	
8:45	100	7.24	1190	19.7	
8:48	105	7.23	1190	19.7	Finished purging

TOTAL NUMBER OF SAMPLES COLLECTED	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP3
WELL NO.: BP3
PAGE: 1 OF 1
DATE: 5/15/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
10:50	30	6.55	1150	20.2	Slightly turbid
11:00	50	6.83	1100	19.8	
11:03	55	7.01	1100	19.8	
11:06	60	7.12	1190	19.8	Becomes clear
11:08	65	7.20	1000	19.8	
11:10	70	7.23	1000	19.8	
11:12	75	7.28	1050	19.8	
11:13	80	7.30	1200	19.8	
11:15	85	7.33	1100	19.8	
11:17	90	7.34	1190	19.8	
11:20	100	7.36	1190	19.8	
11:24	110	7.35	1190	19.8	
	110				Total purged

TOTAL NUMBER OF SAMPLES COLLECTED	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP4
WELL NO.: BP4
PAGE: 1 OF 1
DATE: 5/14/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
1:20	35	6.78	1200	21.2	Clear
1:25	70	6.95	1300	20.2	
1:31	90	7.04	1300	20.8	
1:38	120	7.07	1250	20.2	
1:41	130	7.08	1300	20.0	
1:43	150	7.10	1300	20.1	Crystal clear
1:46	160	7.13	1260	20.0	
1:47	165				Total purged

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP5
WELL NO.: BP5
PAGE: 1 OF 1
DATE: 5/14/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
1:20	35	6.78	1200	21.2	Clear
1:25	70	6.95	1300	20.2	
1:31	90	7.04	1300	20.8	
1:38	120	7.07	1250	20.2	
1:41	130	7.08	1300	20.0	
1:43	150	7.10	1300	20.1	Crystal clear
1:46	160	7.13	1260	20.0	
1:47	165				Total purged

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP6
WELL NO.: BP6
PAGE: 1 OF 1
DATE: 5/15/92

PURGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
1:00	0				Slightly turbid
1:26	45	7.09	1300	21.1	Becomes clear
1:30	60	7.08	1290	20.7	Becomes clear
1:36	80	7.08	1300	20.9	Becomes clear
1:42	95	7.26	1225	20.6	Becomes clear
1:46	110	7.35	1290	20.6	Becomes clear
1:55	130	7.21	1290	20.6	Becomes clear
	135	7.33	1280	20.2	Becomes clear
	160	7.37	1290	20.6	Becomes clear
2:04	165	7.38	1280	20.1	Stopped purging

TOTAL NUMBER OF SAMPLES COLLECTED	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE:

APPENDIX B

LABORATORY ANALYTICAL REPORTS

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

RECEIVED
MAY 26 1992
APPLIED GEOSCIENCES IN

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-2
Laboratory Sample #: 9205404
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	**19** <----
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	**21** <----
Trichloroflouromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	*97*
2-Bromo-1-chloropropane	*103*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-3
Laboratory Sample #: 9205405
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	**5.4** <----
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	**42** <----
Trichloroflouromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	92
2-Bromo-1-chloropropane	99

ORANGE COAST ANALYTICAL

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Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-4
Laboratory Sample #: 9205406
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	**1.5** <----
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	**24** <----
Trichloroflouromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	91
2-Bromo-1-chloropropane	99

Mark Noorani
Mark Noorani
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Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
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Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-5
Laboratory Sample #: 9205407
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	5.0	N.D.
Bromodichloromethane	5.0	N.D.
Bromoform	10	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	10	N.D.
Chlorobenzene	10	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	50	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	10	N.D.
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Ethylbenzene	5.0	N.D.
Methylene chloride	20	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	5.0	**22** <----
Toluene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	10	N.D.
Trichloroethene	5.0	**190** <----
Trichloroflouromethane	20	N.D.
Vinyl chloride	10	N.D.
Total Xylenes	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	*102*
2-Bromo-1-chloropropane	*96*

ORANGE COAST ANALYTICAL

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Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-6
Laboratory Sample #: 9205408
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	5.0	N.D.
Bromodichloromethane	5.0	N.D.
Bromoform	10	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	10	N.D.
Chlorobenzene	10	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	50	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	10	N.D.
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Ethylbenzene	5.0	N.D.
Methylene chloride	20	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	5.0	**30** <----
Toluene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	10	N.D.
Trichloroethene	5.0	**300** <----
Trichloroflouromethane	20	N.D.
Vinyl chloride	10	N.D.
Total Xylenes	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	104
2-Bromo-1-chloropropane	99

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water

Laboratory Reference #: HAI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-15-92
Reported: 05-20-92

TURBIDITY (EPA 180.1)

Laboratory Sample Number	*Client Sample Number*	*Sample Result NTU*
9205404	BP-2	N.D.
9205405	BP-3	N.D.
9205406	BP-4	N.D.
9205407	BP-5	N.D.
9205408	BP-6	N.D.
Detection Limit:		10

Analyte reported as N.D. was not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Q C D A T A R E P O R T

Analysis: VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

Date of Analysis: 05/18/92

Laboratory Sample No.: 9205442

Laboratory Reference No.: AGI 1890

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0	20.0	18.8	19.3	94	97	3
1,1-Dichloroethene	0	20.0	19.3	20.9	97	105	8
Trichloroethene	0	20.0	19.7	20.9	99	105	6
Toluene	0	20.0	20.4	19.8	102	99	3
Tetrachloroethene	0	20.0	19	19.7	95	99	4

Definition of Terms:

R1 Results of First Analysis
SP Spike Concentration Added to Sample
MS Matrix Spike Results
MSD Matrix Spike Duplicate Results
PR1 Percent Recovery of MS: (MS - R1) / SP X 100
PR2 Percent Recovery of MSD: (MSD - R1) / SP X 100
RPD Relative Percent Difference: {(MSD - MS)/(MSD + MS)} X 100 X 2

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

APPLIED GEOSCIENCES INC.

SHIPMENT NO. _____

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: AEI

DATE 5/15/92

PROJECT NO. A9019780

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required*
BP2		Water	Stainless Steel bailer	40mL VOA vials	Chill	Ice	601/602
BP2							180.1
BP3							601/602
BP3							180.1
BP4							601/602
BP4							180.1
BP5							601/602
BP5							180.1
BP6							601/602
BP6							180.1
							FTU
							NO

Total Number of Samples Shipped: 10 | Sampler's Signature: Elliot Leventhal

Relinquished By: Signature: Elliot Leventhal; Printed Name: Elliot Leventhal; Company: Applied Geosciences; Reason: To Lab	Received By: Signature: Michele Florence; Printed Name: Michele Florence; Company: O.CA	Date: 5/15/92	Time: 16:00
Relinquished By: Signature: ; Printed Name: ; Company: ; Reason:	Received By: Signature: ; Printed Name: ; Company:	Date: / /	Time:
Relinquished By: Signature: ; Printed Name: ; Company: ; Reason:	Received By: Signature: ; Printed Name: ; Company:	Date: / /	Time:
Relinquished By: Signature: ; Printed Name: ; Company: ; Reason:	Received By: Signature: ; Printed Name: ; Company:	Date: / /	Time:

Special Shipment / Handling / Storage Requirements:

Normal Turn-around

Send Results to Craig Metheny

* Note – This does not constitute authorization to proceed with analysis

FIRE DEPARTMENT
FIRE PREVENTION BUREAU

312 EAST COMMONWEALTH AVENUE • FULLERTON, CA 92632 • (714) 738-6500 FAX (714) 738-5355

MARC MARTIN, FIRE CHIEF

CRWQCB-REGION 8
KRW
LVA
95 JAN 25 AM 11:05
PAH for LUSTIS entry

January 20, 1995

Mr. Val Konovalov
American Electronics Inc.
1600 E. Valencia Dr.
Fullerton, CA. 92631

Subject: Site closure for American Electronics Inc.
1600 E. Valencia Dr. Fullerton, CA. 92631

Dear Mr. Konovalov:

This letter confirms the completion of the removal of the 6,000 gallon gasoline underground storage tank and related soil investigation activities at American Electronics Inc. 1600 E. Valencia Dr. Fullerton, CA. With the provision that the information provided to this department was accurate and representative of existing conditions, it is the position of this office that no further action is required at this time.

The contents of all reports and findings have been reviewed. Based on the information submitted and current requirements, this department acknowledges to the Santa Ana Regional Water Quality Control Board that no further action be required at this time.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present or future operations at the site. Nor does it relieve you of the responsibility to clean up existing, additional or previously unidentified conditions at the site which cause or threaten to cause pollution or nuisance or otherwise pose a threat to water quality or public health.

Additionally, be advised that changes in the present or proposed use of the site may require further site characterization and mitigation activity. It is the property owner's responsibility to notify this Department of any changes in report content, further contamination findings or site usage.

If you have any questions regarding this matter, please contact me at (714) 738-6500.

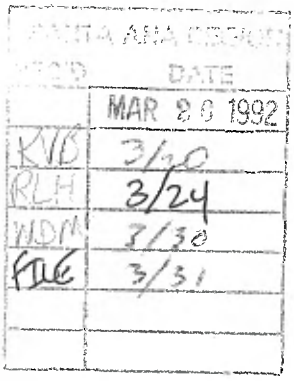
Sincerely,

Steve Long
Underground Tank Specialist

enclosure:
cc: SARWQCB, Ken Williams
Amwest Environmental Engineering, Charlie Loha
Remediation 95/Site Closure

APPLIED GEOSCIENCES INC.
Environmental Consultants

29B Technology Drive
Suite 100
Irvine, CA 92718
TEL: 714/453-8545
FAX: 714/453-0510



18 March 1992
A901978C
AMC-12

California Regional Water Quality Control Board
Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, California 92507-2409

Attention: Mr. Dennis L. Merklin

SUBJECT: ADDITIONAL SUBSURFACE INVESTIGATION AND FIRST QUARTERLY ROUND OF GROUNDWATER MONITORING FOR THE AMERICAN ELECTRONICS INC. FACILITY LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Merkin:

This letter report presents the results of the additional subsurface investigation and first quarterly round of groundwater monitoring conducted at the American Electronics, Inc. facility (site), located at 1600 East Valencia Drive, Fullerton, California (Figure 1). The work summarized in this report was conducted by Applied Geosciences Inc. pursuant to our meeting of 11 December 1991 during which the additional scope of work was discussed (RWQCB, 1991d). The work was conducted in general accordance with Amendment 3 to Attachment 1, and Attachment 3 to the general contract between Applied Geosciences Inc. and American Electronics, Inc. dated 6 December 1990. It is our understanding that the Regional Water Quality Control Board - Santa Ana Region (RWQCB) is concerned with the nature and extent of the volatile organic compounds (VOCs) in the shallow soil and groundwater beneath the site and the southeastern portion of the adjacent property to the west, National Technical Systems (NTS).

BACKGROUND

A preliminary subsurface investigation was conducted at the site by Ray E. Lewis Consulting Engineers, Inc. (REL) during 1989 in order to assess the presence of VOCs in the soil and groundwater beneath the site. The investigation involved the drilling, installing, and sampling of three groundwater monitoring wells. Results of the investigation indicated the presence of VOCs, primarily tetrachloroethylene (PCE) and trichloroethylene (TCE), in the soil and groundwater beneath the southwestern portion of the site. REL reported concentrations of PCE and TCE in the soil up to 1,100 micrograms per kilogram (ug/kg) (1 ug/kg is numerically

equivalent to 1 part per billion [ppb]) and 70 ppb, respectively; and concentrations of TCE in the groundwater of up to 1,500 micrograms per liter (ug/L)(1 ug/L is an approximate numerical equivalent of 1 ppb).

A subsurface investigation was conducted at the site by Applied Geosciences Inc. in 1991 in order to assess the lateral and vertical extent of VOCs in the southwestern portion of the site that had been reported by REL during their preliminary investigation. The investigation involved drilling and sampling of three soil borings, and the drilling, installing, and sampling of three groundwater monitoring wells. Results of this investigation indicated the presence of VOCs, primarily PCE and TCE, in the shallow soil beneath the southwestern portion of the site and to the immediate southwest of the site. Concentrations of PCE and TCE in soil samples collected during the investigation were reported to be as high as 1,100 ppb and 140 ppb, respectively. The highest concentrations of PCE and TCE reported from groundwater samples collected during the investigation were 85 and 53 ppb, respectively.

The RWQCB, in a response letter to Richard F. Holland, President of American Electronics, Inc. dated October 25, 1991, expressed the following concerns: the lateral and vertical extent of soil impacted by VOCs had not yet been fully assessed; the impacted soil could be a source of TCE and PCE in the groundwater; the nature and extent of impacted groundwater should be more accurately assessed with additional groundwater data; and that groundwater level measurements, and calculated gradients and flow directions, had displayed inconsistent results (RWQCB, 1991a).

To assess the issue of impacted soil it was proposed that a soil gas survey be conducted to identify the areas of highest concentrations of volatile organic compounds (VOCs), and that soil borings be drilled in those locations to collect soil samples for laboratory analysis. It is our understanding that an assessment regarding the necessity for soil remediation should then be made based upon the findings as they relate to the existing hydrogeologic conditions.

It was suggested by Applied Geosciences Inc. that total VOC concentrations in the soil of less than 1,000 ppb would generally not warrant remediation (Applied Geosciences, 1991). The RWQCB suggested in their letter dated 26 December 1991 that concentrations of total VOCs "significantly" higher than the levels previously encountered in the shallow soil at the site (i.e., approximately 1,000 ppb) may indicate the necessity for soil remediation (RWQCB, 1991c).

To assess the issue of impacted groundwater it was proposed that the existing monitoring wells be re-surveyed in order to more accurately estimate the groundwater gradient and flow direction; and to conduct quarterly groundwater monitoring to increase the database of groundwater information.

The scope of the additional work was approved by the RWQCB in a letter dated 20 December 1991 from the RWQCB to Mr. Richard F. Holland, President of American Electronics, Inc. (RWQCB, 1991b).

OBJECTIVES

The objectives of the work summarized in this report were to:

- Further assess the lateral and vertical extent of shallow soil impacted by VOCs at the southwestern portion of the site and the southeastern portion of the adjacent NTS property to the west;
- Assess whether concentrations of VOCs encountered in the shallow soil are "significantly" higher than those previously encountered (i.e., approximately 1,000 ppb);
- Collect and analyze the first round of quarterly groundwater monitoring; and
- Estimate the groundwater gradient and flow direction.

SCOPE OF WORK

The scope of work developed to meet the objectives included the following.

- Conduct of a soil-gas survey at the southwestern portion of the site, including the southeastern portion of the adjacent property to the west;
- Drilling and sampling of four soil borings to a depth of approximately 20 feet below the ground surface (BGS);
- Purging and sampling of five groundwater monitoring wells;
- Re-survey the existing groundwater monitoring well elevations;
- Laboratory analyses of soil samples for VOCs and groundwater samples for VOCs and turbidity; and
- Data evaluation and preparation of this report.

SUBSURFACE INVESTIGATION

Soil-Gas Survey

A soil-gas survey was conducted at the southwestern portion of the site and the southeastern portion of the NTS property to the west, on 19 and 20 December 1991 (Figure 2). The soil-gas survey was conducted by Optimal Technology Inc. under subcontract to Applied Geosciences Inc. (Figure 2). The soil-gas survey consisted of advancing 29 sample probes to depths of approximately 8 to 10 feet BGS and collecting and analyzing one gas sample from each location (Figure 3). Sample location SG-21 also included collecting a gas sample from a depth of approximately 20 feet BGS.

The procedures for conducting the soil-gas survey and the results of the survey are presented in the Optimal Technology Inc. report dated 29 December 1991 (Appendix A).

Soil Borings

Four soil borings (designated SB-4, SB-5, SB-6, and SB-7) were drilled at the site in the approximate locations shown in Figure 2. The soil boring locations were selected based upon the locations of the highest total volatile hydrocarbon (TVH) concentrations observed during the soil-gas survey. The purpose of these borings was to assess the lateral and vertical extent of VOCs in the shallow soil at the southwestern portion of the site that was encountered during the previous subsurface investigations conducted by REL (1989) and Applied Geosciences Inc. (1991).

The soil borings were drilled on 23 December 1991 using a mobile drill rig equipped with 8-inch outer-diameter (OD) hollow-stem augers. All four borings were drilled to a depth of approximately 20 feet BGS. Soil samples were collected during drilling operations at approximate 2.5-foot-depth intervals for the first 10 feet and at approximate 5-foot-depth intervals thereafter. Soil samples were used for lithologic logging, and a selected number were used for chemical analyses, as discussed in Subsection 5.2. The procedures used for drilling and soil sampling are presented in Appendix B (Section B1.0). Upon completion of each boring, the borings were backfilled with a Volclay (bentonite) grout to the approximate ground surface and capped at the ground surface with a concrete patch.

Lithologies encountered during drilling were recorded on a log for each boring (Appendix C). The general lithologies encountered consisted of alternating clayey silts and silty sands to a depth of approximately 18 feet BGS, and fine sands from approximately 18 to 20 feet BGS, which are consistent with the findings of the previous subsurface investigations.

Headspace measurements were taken for soil samples collected during drilling operations using an Hnu organic vapor meter (OVM). The procedures for conducting headspace measurements are presented in Appendix B (Section B1.0). Headspace measurements were taken for each depth interval sampled and were recorded on the boring logs, which are presented in Appendix C.

The highest overall headspace readings were recorded in samples taken from SB-6, which ranged from approximately 3 parts per million (ppm) to approximately 70 ppm. The highest reading of 70 ppm was detected at approximately 2.5 feet BGS in a clayey silt, and the lowest reading of 3 ppm was detected at approximately 20 feet BGS in a fine sand.

The lowest overall headspace readings were recorded in samples taken from SB-4, which ranged from approximately 4 ppm to 13 ppm. Headspace readings were generally lowest in samples taken from the 20-foot-depth interval in all of the borings.

GROUNDWATER MONITORING

Monitoring Well Survey

Prior to conducting the groundwater sampling, it was agreed upon that the monitoring wells should be re-surveyed in order to more accurately assess the groundwater gradient and flow direction. The survey was conducted by Norris-Repke, Inc. on 19 December 1991 and the results are presented in Appendix D.

Groundwater Sampling

The groundwater level measurements were conducted on 19 December 1991 in accordance with the groundwater sampling procedures presented in Appendix B (Section B2.0). The results are listed in Table 1. Groundwater samples were collected on 19 and 20 December 1991 in accordance with the groundwater sampling procedures presented in Appendix B (Section B2.0). Well BP-1 was not sampled because it had contained only approximately 2 feet of measurable groundwater in December 1990, approximately 0.5 foot in June 1991, and approximately 1 foot in December 1991, and it was judged that this well would not provide a representative groundwater sample. As mentioned in our previous report, well BP-5 was installed to replace well BP-1 for this reason (Applied Geosciences Inc., 1991). Groundwater samples collected from the wells were submitted for chemical analyses as discussed below to West Coast Analytical Service, Inc. of Santa Fe Springs, California, a State-certified laboratory.

ANALYTICAL RESULTS

Soil-Gas Samples

The soil gas samples were analyzed for PCE, TCE, 1,1,1-tetrachloroethane (1,1,1-TCA), and total volatile petroleum hydrocarbons (TVPH). Of the 30 samples collected in the survey, all 30 had detectable concentrations of 111-TCA, TCE, PCE and an unknown compound that is reported as 1,1-dichloroethylene (11-DCE). Although most of the concentrations were relatively low, the presence of relatively high concentrations of TVH (greater than 1,000 ppb) in the area adjacent to the former chemical storage area in the vicinity of soil gas sample locations SG-9 and SG-21; on the NTS property in sample location SG-23; and approximately 60 feet to the northeast of the former chemical storage area in sample location SG-15. The sample locations and interpreted TVH contours are shown in Figure 3. The results, tables, and figures of the soil-gas survey are presented in Appendix A.

Soil Samples

Five soil samples from each soil boring (borings SB4 through SB7) were selected for analyses. The soil samples were generally selected on the basis of lithology, OVM readings, and visual sample quality. Soil samples collected during this phase of the investigation were analyzed for VOCs in general accordance with Environmental Protection Agency (EPA) Method No. 8021. Soil samples collected during the previous investigations were analyzed for VOCs in general accordance with EPA Method Nos. 8010/8020. Results are summarized in Table 2 (which also includes information from the previous investigations), and the laboratory reports are presented in Appendix E (Section E1.0). One sample from each of the soil borings was analyzed by a RWQCB-selected laboratory for VOCs in general accordance with EPA Method No. 8010. The results of these analyses are also summarized in Table 2, and the laboratory reports are presented in Appendix E (Section E2.0).

The primary chlorinated hydrocarbons reported by the laboratory to be present in the soil samples were PCE and TCE. The maximum concentration of PCE reported was 3,500 ppb in a sample collected from soil boring SB-6 at a depth of approximately 7.5 feet BGS. PCE concentrations in samples collected at depths of 2.5 feet BGS and 10 feet BGS from this boring were reported to be 1,800 ppb and 1,200 ppb, respectively. PCE was not detected in the sample collected from this boring at a depth of 20 feet BGS. The PCE concentration in a sample collected from soil boring SB-4 at a depth of 12.5 feet BGS was reported to be 1,490 ppb. PCE was not detected in the sample collected from this boring at a depth of 20 feet BGS. PCE concentrations above 1,000 ppb were not reported in any locations and depths other than those listed above.

The maximum reported concentration of TCE was 380 ppb in a sample collected from soil boring SB-7 at a depth of 7.5 feet BGS. TCE was not detected in the sample collected from this boring at a depth of 20 feet BGS.

Aromatic hydrocarbons (benzene, toluene, xylenes, and ethylbenzene [BTXE]) were also detected in most of the soil samples analyzed. However, many of the constituents that were detected were also present in the laboratory blank samples. The concentrations of these detected compounds that were not also detected in the blank samples were generally relatively low (less than 10 ppb), with only a few exceptions. The maximum concentrations of benzene, toluene, xylenes, and ethylbenzene that were reported, which were not also detected in the laboratory blanks, were 2, 46, 7, and 2, respectively.

A summary of the total VOCs that were detected in the soil samples analyzed is shown in Table 2. Laboratory analytical results reported that total VOC concentrations exceeded 1,000 ppb in samples collected from soil boring SB-4 at a depth of 12.5 feet BGS; from soil boring SB-6 at depths of 2.5, 7.5, and 10 feet BGS; and from SB-7 at a depth of 7.5 feet BGS.

Groundwater Samples

Groundwater samples were analyzed for VOCs in general accordance with EPA Method No. 601/602. A companion sample of each was analyzed for turbidity in general accordance with EPA Method No. 180.1. Results of the VOC laboratory analyses are summarized in Table 3, and the laboratory reports are presented in Appendix E (Section E3.0). Table 3 also presents the analytical results for the groundwater samples collected during previous investigations by Applied Geosciences Inc. and others; and the maximum contaminant levels (MCLs) as published in the CCR, Title 22, for the given chemical constituents (REL, 1989; Applied Geosciences Inc., 1991).

The primary VOCs detected in the groundwater sample collected during this phase of the investigation were TCE and PCE. The maximum reported concentration of TCE was 260 ppb in a sample collected from well BP-5, and the lowest concentration of TCE reported was 15 ppb in a sample collected from well BP-4. The highest concentrations of TCE reported during the previous investigations were 1,500 ppb in a sample collected from well BP-1 (REL, 1989), and 85 ppb in a sample collected from well BP-5 (Applied Geosciences Inc., 1991).

The highest reported concentration of PCE encountered during this phase of the investigation was 170 ppb in a sample collected from well BP-5 and the lowest concentration of PCE reported was 4.2 ppb in a sample collected from well BP-4. The highest concentration of PCE reported during the previous investigations was 68 ppb in a sample collected from well BP-2 (Applied Geosciences Inc., 1991). PCE was not detected above the laboratory detection limit of 10 ppb during the REL investigation (REL, 1989).

Other VOCs were not detected in amounts exceeding the State and Federal drinking water standards.

DISCUSSION

Subsurface Investigation

The results of the soil-gas survey and soil sampling indicated that the area of impacted soil seems to be limited to the southwestern portion of the site and the southeastern portion of the adjacent NTS property to the west.

The area of shallow soil impacted by VOCs in concentrations exceeding 1,000 ppb appears to be limited in areal and vertical extent to a relatively small area adjacent to the northeast corner of the former chemical storage area in the vicinity of boring SB-6. Total VOC concentrations exceeding 1,000 ppb were only consistently reported in samples collected from boring SB-6 at depths of from 2.5 to 12.5 feet BGS. Total VOC concentrations of 1,530 ppb and 1,060 ppb were reported in isolated samples from boring SB-4 at 12.5 feet BGS, and boring SB-7 at 7.5 feet BGS, respectively; no other samples analyzed during the investigation contained total VOC concentrations exceeding 1,000 ppb.

The existing geologic conditions consist predominantly of interbedded fined-grained silty sands and clayey silts. The water table was measured at a depth of approximately 140 feet BGS. Given the relatively small areal and vertical extent of the impacted soil, and considering the existing hydrogeologic conditions, it is our professional judgement that the concentrations of total VOCs detected in samples collected during this investigation do not pose a "significant" threat to the groundwater beneath the site. It is, therefore, our professional judgement that no further action regarding the impacted shallow soil at the site or the adjacent NTS property appears to be necessary.

Groundwater Monitoring

The results of the monitoring well elevation survey yielded well casing elevations of within 0.002 feet of the initial survey of the wells at the time they were installed.

The groundwater gradient is relatively flat with a general flow direction to the west (Figure 4). The relatively flat groundwater gradient makes accurate assessments of the groundwater flow direction difficult, and fluctuations have been observed between groundwater monitoring dates. It is our professional judgement that the quarterly groundwater monitoring should be continued in order to more accurately assess the groundwater gradient and flow direction.

The primary VOCs detected in groundwater collected during the investigation were TCE and PCE; other VOCs were not detected in amounts exceeding the State and Federal drinking water standards.

The concentrations of TCE and PCE detected in the groundwater sample collected from well BP-5 were greater than in the previous round of groundwater monitoring that was conducted in July 1991, but lower than in the initial groundwater samples collected from well BP-1 in 1989. Concentrations of TCE and PCE detected in samples collected from other wells were essentially the same as in the previous round of sampling that was conducted in July 1991. It is therefore our professional judgement that quarterly groundwater monitoring should be continued in order to more accurately assess the nature and extent of the impacted groundwater beneath the site.

CONCLUSIONS

Based on the results of the investigation, current regulatory guidelines, and the professional judgement of Applied Geosciences Inc., the following conclusions have been drawn:

- The soil beneath the southwestern portion of the site and the southeastern portion of the adjacent NTS property to the west has been impacted by VOCs. The primary VOCs detected in the soil samples collected during the investigation were PCE and TCE;

- The area of impacted soil containing total VOC concentrations exceeding 1,000 ppb appears to be limited to the area adjacent to the northeastern corner of the former chemical storage area in the vicinity of boring SB-6;

- The concentrations of total VOCs detected in soil samples collected during this investigation do not appear to pose a significant threat to the groundwater beneath the site; and

- The groundwater level measurements collected to date indicate a relatively flat groundwater gradient and fluctuating flow direction.

RECOMMENDATIONS

Based on the conclusions presented in this report, current regulatory guidelines, and the professional judgement of Applied Geosciences Inc., the following recommendations are presented for your consideration:

- No further action regarding the impacted soil at the site or the adjacent NTS property to the west appears to be necessary; and

- Quarterly monitoring of key wells at the site should be continued in order to further assess spatial and temporal changes in VOC concentrations and distributions, and to further assess the groundwater gradient and flow direction beneath the site.

Should you have any questions regarding the information contained in this letter report, please feel free to contact either of us at your convenience.

Very truly yours,
APPLIED GEOSCIENCES INC.

Mark S. Cousineau, R.E.A.
Associate

Craig Metheny, R.E.A.
Project Manager

Will Weaver
Staff Geologist

Attachments

cc: Mr. Richard F. Holland, American Electronics
David T. Peterson, Esq., Hill, Wynne, Troop and Meisinger
Mr. Fred B. Warburton, Yokohama Tire Center

REFERENCES

Ray E. Lewis Consulting Engineers, Inc. (REL), 1989, subsurface investigation to determine the extent of contaminant migration: Unpublished report dated 30 June 1989, 10 p.

Applied Geosciences Inc., 1991, Phase II subsurface investigation for the American Electronics Inc. facility located at 1600 East Valencia Drive in the city of Fullerton, California: Dated 30 August 1991.

Region Water Quality Control Board - Santa Ana Region (RWQCB), 1991a, Letter to Richard F. Holland, President of American Electronics, Inc.: Dated 25 October 1991.

_____, 1991b, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 20 December 1991.

_____, 1991c, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 26 December 1991.

_____, 1991d, meeting with Mr. Robert Holub, California Regional Water Quality Control Board: 11 December 1991.

TABLE 1

GROUNDWATER ELEVATION MEASUREMENTS

GROUNDWATER SURFACE MEASUREMENTS												
Well Number	BP-1		BP-2		BP-3		BP-4		BP-5		BP-6	
Elevation of the Top of the Well Casing	178.14		183.13		180.61		179.89		177.69		177.31	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
1/10/91	136.68	41.46	141.81	41.32	139.34	41.27	138.50	41.39	136.80	40.89	NM	NM
1/17/91	136.74	41.40	141.90	41.23	139.34	41.27	138.49	41.40	136.80	40.89	NM	NM
1/30/91	137.13	41.01	142.30	40.83	139.79	40.82	138.95	40.94	137.31	40.38	NM	NM
6/21/91	NM	NM	143.19	39.94	140.66	39.95	139.76	40.13	138.09	39.60	137.50	39.81
7/15/91	138.39	39.75	143.55	39.58	141.05	39.56	140.15	39.74	138.50	39.19	137.93	39.38
12/19/91	138.05	40.09	143.05	40.08	140.40	40.21	139.34	40.55	137.75	39.94	137.35	39.96

Notes:

Elevation data are given in feet above mean sea level.
Depth = depth-to-groundwater measured in feet below top of well casing.
NM = no groundwater measurements were made.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED TO DATE

Boring Number	Depth (feet)	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									Total VOCs
		Benzene	Toluene	Xylenes	Eth-ben	PCE	TCE	1,1,1-TCA	1,1-DCA	1,2-DCA	Methylene Chloride	Chloro-form	Chloro-benzene	Carbon-tetra	
BP-4	15	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(3)	(2)	ND
	40	(1)	(1)	(1)	(1)	(2)	10	(2)	(2)	(2)	(30)	(2)	(3)	(2)	10
	55	(1)	(1)	(1)	(1)	(2)	28	(2)	(2)	(2)	(30)	(2)	(3)	(2)	28
	80	(1)	(1)	(1)	(1)	(2)	25	(2)	(2)	(2)	(30)	(2)	(3)	(2)	25
	95	(1)	(1)	2	(1)	(2)	6	(2)	(2)	(2)	(30)	(2)	(3)	(2)	8
	130	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(3)	(2)	ND
BP-5	5	(40)	62	(40)	(40)	1100	140	(60)	(80)	(80)	(1000)	(60)	(40)	(60)	1302
	30	(1)	(1)	2	7	220	250	5	(2)	9	(30)	(2)	(4)	3	496
	45	(10)	120	(10)	(10)	(20)	340	(20)	(20)	(20)	(300)	(20)	(30)	(20)	460
	80	(1)	(1)	38	23	(2)	16	(2)	(2)	(2)	(30)	(2)	(4)	(2)	77
	100	(1)	(1)	(1)	5	(2)	9	(2)	(2)	(2)	(30)	(2)	(4)	(2)	14
	130	(1)	(1)	3	6	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(4)	(2)	9
BP-6	40	(1)	2	4	(1)	37	130	7	(2)	(2)	33 B	(2)	(1)	(2)	213
	55	(1)	1	1	(1)	(2)	10	(2)	(2)	(2)	25 B	(2)	(1)	(2)	37
	70	(1)	2	(1)	(1)	4	140	3	(2)	(2)	29 B	(2)	(1)	(2)	178
	90	(10)	(10)	(10)	(10)	(20)	250	(20)	(20)	(20)	(10)	(20)	(10)	(20)	250
	100	(1)	(1)	(1)	(1)	(2)	30	(2)	(2)	(2)	35 B	(2)	(1)	(2)	65
	130	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	48 B	(2)	(1)	(2)	48
SB-1	10	3	3	(1)	(1)	85	180	(2)	(2)	(2)	(30)	(2)	(3)	(2)	271
	35	1	(1)	7.7	3	(2)	15	(2)	(2)	(2)	(30)	(2)	(3)	(2)	26.7
	55	(1)	(1)	(1)	2	(2)	14	(2)	(2)	(2)	(30)	(2)	(3)	(2)	16
	75	(1)	6	(1)	(1)	(2)	14	(2)	(2)	(2)	(30)	(2)	(3)	(2)	20
	100	3.2	3	24	(1)	(2)	99	(2)	(2)	(2)	(30)	(2)	(3)	(2)	129.2
	115	2	1	2	(1)	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(3)	(2)	5
SB-2	10	(1)	2	(1)	(1)	(2)	10	(2)	(2)	(2)	(30)	(2)	(1)	(2)	12
	35	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(1)	(2)	ND
	55	(1)	1	1	(1)	(2)	8	(2)	(2)	(2)	(30)	(2)	(1)	(2)	[illegible]
	75	(1)	(1)	(1)	(1)	(2)	3	(2)	(2)	(2)	(30)	(2)	(1)	(2)	3
	100	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(1)	(2)	ND
	120	(1)	(1)	(1)	(1)	(2)	(2)	(2)	(2)	(2)	(30)	(2)	(1)	(2)	ND

TABLE 2 (Continued)
LABORATORY ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED TO DATE

Boring Number	Depth (feet)	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									Total VOCs
		Benzene	Toluene	Xylenes	Eth-ben	PCE	TCE	1,1,1-TCA	1,1-DCA	1,2-DCA	Methylene Chloride	Chloro-form	Chloro-benzene	Carbon-Tetra	
SB-3	10	(1)	4	(1)	(1)	54	98	(2)	(2)	(2)	(3)	(2)	(1)	(2)	156
	30	(1)	2	(1)	(1)	54	360	(2)	(2)	(2)	(3)	(2)	(1)	(2)	416
	45	1	2	5.7	(1)	2	78	(2)	(2)	(2)	(3)	(2)	(1)	(2)	88.7
	75	3	2	(1)	(1)	5	220	(2)	(2)	(2)	(3)	(2)	(1)	(2)	230
	90	(1)	(1)	(1)	(1)	(2)	22	(2)	(2)	(2)	(3)	(2)	(1)	(2)	22
	105	(1)	(1)	(1)	(1)	(2)	10	(2)	(2)	(2)	(3)	(2)	(1)	(2)	10
SB-4	2.5	1	52 B	3	(2)	60	39	(2)	(2)	(2)	132 B	(2)	(1)	(2)	287
	5	(1)	16	2 B	(2)	29	18	(2)	(2)	(2)	22 B	(2)	(1)	(2)	87
	10	(1)	31	(2)	(2)	70	44	(2)	(2)	(2)	20 B	(2)	(1)	(2)	165
	12.5*	(10)	(10)	(10)	(10)	1490	40	(10)	(10)	(10)	(10)	(10)	(10)	(10)	1530
	20	(1)	3	(2)	(2)	(2)	(2)	(2)	(2)	(2)	5 B	(2)	(1)	(2)	8
SB-5	2.5	(1)	36	(2)	(2)	59	18	(2)	(2)	(2)	7 B	(2)	(1)	(2)	120
	7.5	1	46	4	(2)	440	243	4 B	(2)	(2)	121 B	2	(1)	(2)	861
	10	(1)	66 B	5	2	333	120	(2)	(2)	(2)	86 B	(2)	(1)	(2)	612
	12.5*	(10)	(10)	(10)	(10)	870	40	(10)	(10)	(10)	(10)	(10)	(10)	(10)	910
	20	(1)	46 B	2	(2)	29	14	(2)	(2)	(2)	40 B	(2)	(1)	(2)	131
SB-6	2.5	1 B	6 B	3 B	(2)	1800	272	6	3	(2)	28 B	3	1	(2)	2123
	7.5*	(10)	(10)	(10)	(10)	3500	150	(10)	(10)	(10)	(10)	(10)	(10)	(10)	3650
	10	1 B	8 B	3 B	(2)	1200	234	6	2	(2)	35 B	3	1	(2)	1493
	15	1 B	16 B	3 B	(2)	28	7	(2)	(2)	(2)	17 B	(2)	(1)	(2)	72
	20	(1)	3	4 B	(2)	(2)	(2)	(2)	(2)	(2)	12 B	(2)	(1)	(2)	19
SB-7	2.5	1 B	86 B	3 B	(2)	152	70	(2)	(2)	(2)	14 B	(2)	(1)	(2)	326
	7.5*	(10)	(10)	(10)	(10)	710	350	(10)	(10)	(10)	(10)	(10)	(10)	(10)	1060
	10	2 B	17 B	7 B	2	380	287	6	(2)	3	15 B	(2)	(1)	(2)	719
	15	2 B	15 B	5 B	(2)	9	10	2	(2)	(2)	35 B	(2)	(1)	(1)	78
	20	2	8	7	2	(2)	(2)	(2)	(2)	(2)	22	(2)	(1)	(1)	41

TABLE 2 (Continued)
LABORATORY ANALYTICAL RESULTS FOR SOIL SAMPLES COLLECTED TO DATE

Soil samples collected during this phase of the investigation were analyzed in general accordance with EPA Method No. 8021. Soil samples collected during the previous investigations were analyzed in general accordance with EPA Method Numbers 8010/8020. Sample depths denoted with an asterisk were analyzed by a RWQCB-selected laboratory in general accordance with EPA Method No. 8021. Only compounds reported to have been detected in concentrations greater that the detection limit are included in the table.

Concentrations are reported in micrograms per kilogram (ug/kg)(1 ug/kg is numerically equivalent to 1 part per billion [ppb]).

Feet = feet below the ground surface.

Eth-ben = ethylbenzene

PCE = tetrachloroethylene

TCE = trichloroethylene

1,1,1-TCA = 1,1,1-trichloroethane

1,1-DCA = 1,1-dicholorethane

1,2-DCA = 1,2-dichloroethane

Carbon-tetra = carbon tetrachloride

Values accompanied by a "B" denote that the substance was also detected in the blank sample.

Values in parentheses denote nondetection at the enclosed detection limit.

TABLE 3
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Turbidity	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									
			Benzene	Toluene	Xylenes	Ethyl Benzene	PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	DCE	Meth. Chloride	Chloro-form	Chloro-benzene
BB	1/11/91	NA	(0.2)	(0.1)	(0.8)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.8)
	1/30/91	NA	(0.2)	(0.1)	(0.8)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	0.6	21	(0.3)	1.6
Trip Bl.	12/19/91	NA	0.2	(0.2)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	14 B	(0.3)	(0.2)
Lab Bl.	1/30/91	NA	(0.2)	0.5	0.6	(0.2)	(0.3)	(0.3)	(0.3)	0.3		(0.4)	(0.6)	5.6	(0.3)	1.6
	6/28/91	NA	0.5	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	0.8	(0.3)	(0.2)
	7/16/91	NA	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.2)	(0.2)	(0.6)	1.4	(0.3)	(0.2)
	12/19/91	NA	(0.2)	(0.2)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	1.6	(0.3)	(0.2)
	12/19/91	NA	(0.2)	0.5	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	0.4	(0.3)	(0.2)
BP-1	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	290	(10)	(10)		(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	1500	(20)	(20)		(20)	(20)	(20)	(20)	(20)
	7/02/90	NA	NA	NA	NA	NA	(25)	230	(25)	(25)	(25)	(25)	(25)	(25)	89	(25)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	520	(2)	(2)	(2)	(2)	(2)	(5)	(2)	(2)
BP-2	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	40	(10)	(10)		(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	110	(20)	(20)		(20)	(20)	(20)	(20)	(20)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	6	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	1/10/91	82	(0.2)	(0.7)	(0.8)	(0.2)	50	36	1	(0.3)	(0.4)	(0.4)	(0.6)	(0.3)	(0.3)	(0.8)
	1/30/91	15	(0.2)	(0.2)	(0.2)	(0.2)	54	40	2.6	(0.3)	(0.4)	(0.4)	6.8	21	0.4	1.7
	7/16/91	70	(0.4)	0.4	0.3	(0.2)	68	43	1.1		(0.4)	(0.4)	(0.6)	1.1	(0.3)	(0.2)
	12/23/91	15	(0.2)	0.6	0.6	(0.3)	29	19	0.6	(0.3)	(0.4)	(0.4)	1.2	1.4 B	(0.3)	(0.2)

TABLE 3 (Continued)
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Turbidity	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									
			Benzene	Toluene	Xylenes	Ethyl Benzene	PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	DCE	Meth. Chloride	Chloro-form	Chloro-benzene
BP-3	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	40	(10)	(10)		(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	40	(20)	(20)		(20)	(20)	(20)	(20)	(20)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	30	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	1/10/91	32	(0.2)	(0.7)	3.1	0.7	7.7	6.5	0.3	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.3)
	1/30/91	25	(0.2)	(0.2)	(0.2)	(0.2)	75	41	2	(0.3)	(0.4)	(0.4)	6.8	19	0.4	1.6
	7/16/91	7.8	(0.2)	0.5	(0.2)	(0.2)	32	19	0.4	(0.3)	(0.4)	(0.4)	(0.6)	1.1	(0.3)	(0.2)
	12/23/91	7	0.2	0.6	0.6	(0.3)	26	31	0.6	(0.3)	(0.4)	(0.4)	1.2	1.6 B	(0.3)	(0.2)
BP-4	'91	120	(0.2)	(0.7)	(0.8)	(0.2)	2	4	0.4	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.3)
		85	(0.2)	(0.2)	(0.2)	(0.2)	2.1	3.9	(0.3)	(0.3)	(0.4)	(0.4)	2.1	20	(0.3)	1.7
			(0.2)	(0.2)	(0.2)	(0.2)	9	7	0.3	(0.3)	(0.4)	(0.4)	(0.6)	1	(0.3)	(0.3)
		0.2	1.4 B	0.4	(0.3)	4.2	15	0.6	(0.3)	(0.4)	(0.4)	(0.4)	1.2	17 B	0.6	(0.2)
			(0.7)	(0.8)	(0.2)	35	68	1.3	(0.3)	(0.4)	(0.4)	(0.6)	(5)	0.8	(0.3)	
		'1	(0.2)	(0.2)	(0.2)	40	85	2.8	(0.3)	(0.4)	(0.4)	3.5	19	1.7	1.3	
		(0.2)	(0.2)	(0.2)	(0.2)	53	65	1.1	(0.3)	0.5	(0.4)	(0.6)	1.1	0.7	(0.2)	
			(0.3)	170	260	7.8	(0.3)	3.6	3.6	(0.6)	11 B	5.4	(0.2)			
		0.9	7.5	71	(0.3)		(0.4)	0.5	(0.6)	0.6	0.3	(0.2)				
			6	48	(0.3)		(0.4)	0.4	(0.6)	1	(0.3)	(0.2)				
		'1	17	0.4	(0.3)	(0.4)	(0.4)	(0.6)	25 B	(0.3)	(0.2)					
			5	200	32	5	0.5	6	40*	N/A	30					

[redacted]

TABLE 3 (Continued)
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Groundwater samples were analyzed in general accordance with EPA Methods No. 8010/8020 or 601/602.
Only compounds reported to have been detected in concentrations greater than the detection limits are included in the table.
Concentrations are reported in micrograms per liter (ug/L) (1 ug/L is equivalent to 1 part per billion [ppb]).
Values in parentheses denote nondetection at the enclosed detection limit.
Samples collected on 4/05/89, 9/02/89, and 8/20/90 were collected by Ray .E. Lewis Consulting Engineers, Inc. (REL).

PCE = tetrachloroethylene

TCE = trichloroethylene

1,1,1-TCA = 1,1,1-trichloroethane

1,1,2-TCA = 1,1,2-trichloroethane

1,1-DCA = 1,1-dichloroethane

1,2-DCA = 1,2-dichloroethane

DCE = dichloroethene

Meth. Chloride = methylene chloride

BB = Blank samples were prepared by pouring deionized water directly into the volatile organic analysis vials.

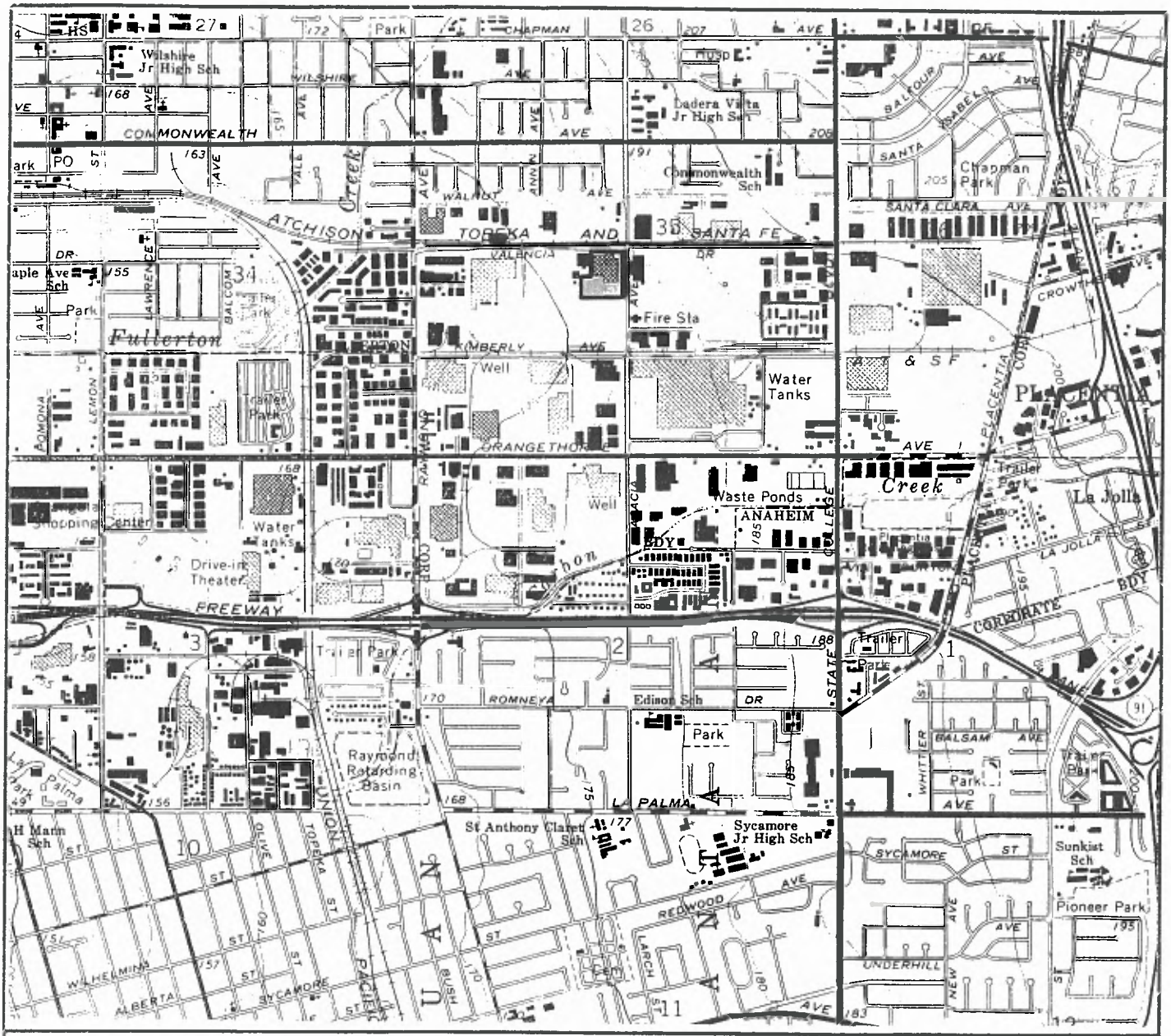
NA = not analyzed

Trip Bl. = Trip blank.

Lab Bl. = Laboratory-prepared blank analyzed as part of West Coast Analytical Service, Inc.'s internal quality control.

Values accompanied by a "B" denote that the substance was also detected in the blank sample.

MCL = maximum contaminant level published in the California Code of Regulations, Title 22. California action levels are listed for methylene chloride and toluene, as MCLs are not available for these chemicals.



EXPLANATION

SITE

NORTH

0 ½ 1

SCALE, MILES

APPLIED GEOSCIENCES INC.

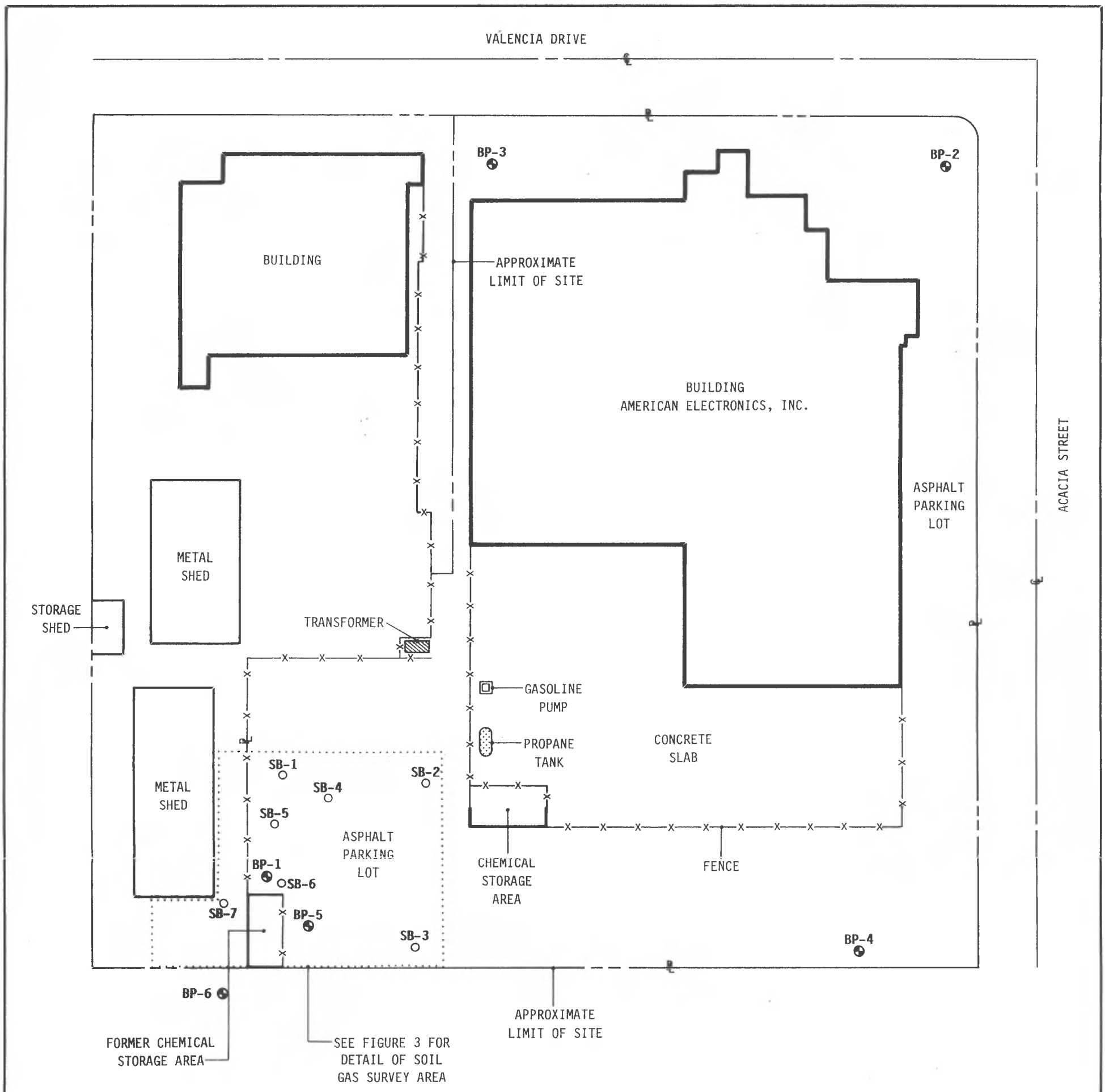
Engineering Geology and Hazardous Materials Consultants

SITE VICINITY MAP

PROJECT NUMBER A901978C | FIGURE 1

NOTE

BASE MAP TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA-ORANGE CO., 7.5-MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981



EXPLANATION

BP-1 ⊕ MONITORING WELL LOCATION AND DESIGNATION

SB7 ○ SOIL BORING LOCATION AND DESIGNATION

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN - PLUMBING", BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960

NORTH

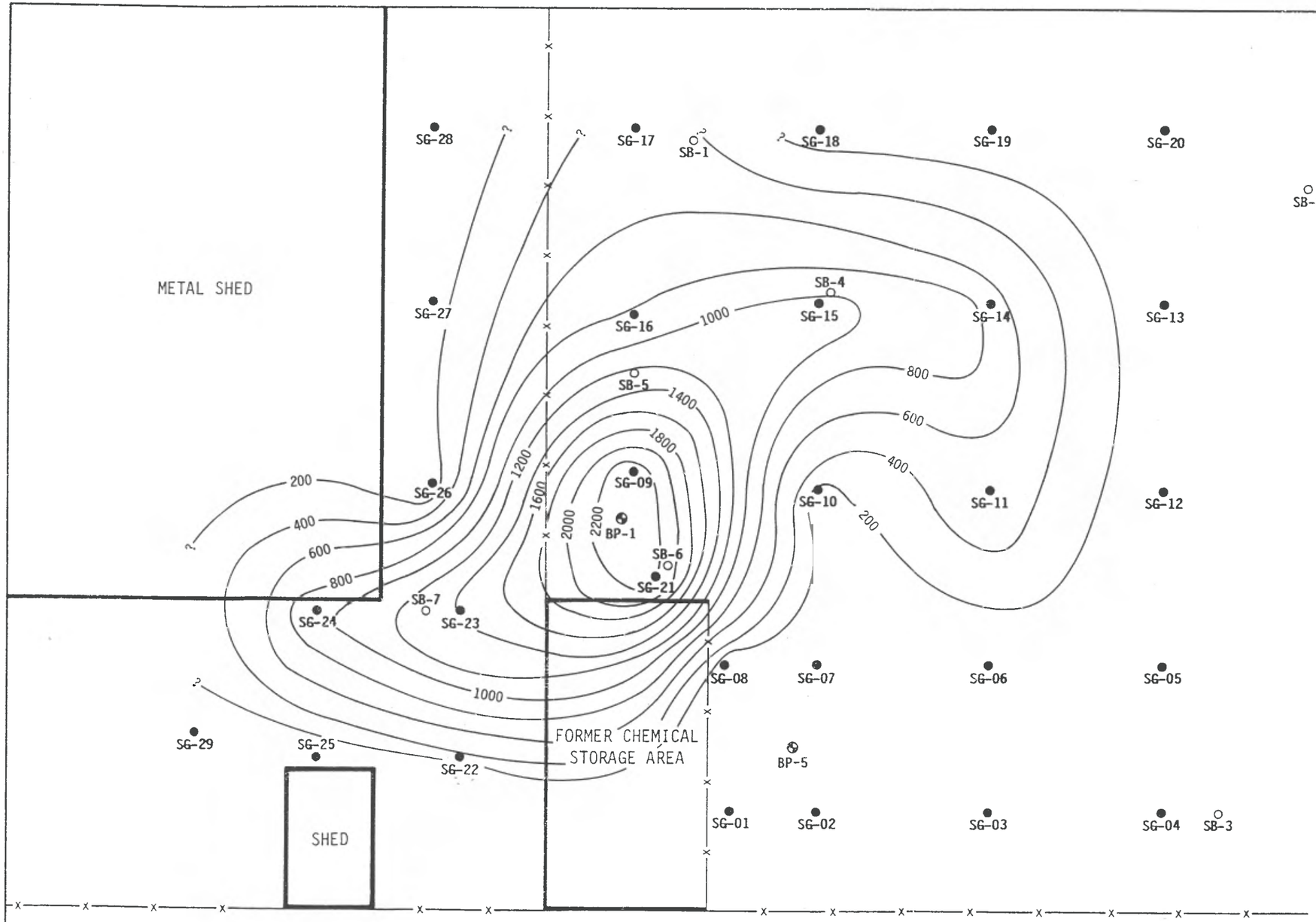
0 80 160

SCALE, FEET

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

SITE PLAN FOR
AMERICAN ELECTRONICS, INC.
FULLERTON, CALIFORNIA

PROJECT NUMBER A901978C | FIGURE 2



EXPLANATION

SG-01 SOIL GAS PROBE LOCATION AND DESIGNATION

SB-1 BORING LOCATION AND DESIGNATION

BP-1 MONITORING WELL LOCATION AND DESIGNATION

200 TOTAL VOLATILE ORGANIC COMPOUNDS (VOCs) CONCENTRATION CONTOURS OBSERVED DURING SOIL GAS SURVEY. CONTOUR INTERVAL = 200 PARTS PER BILLION (PPB)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP DEVELOPED FROM A SITE RECONNAISSANCE

NORTH

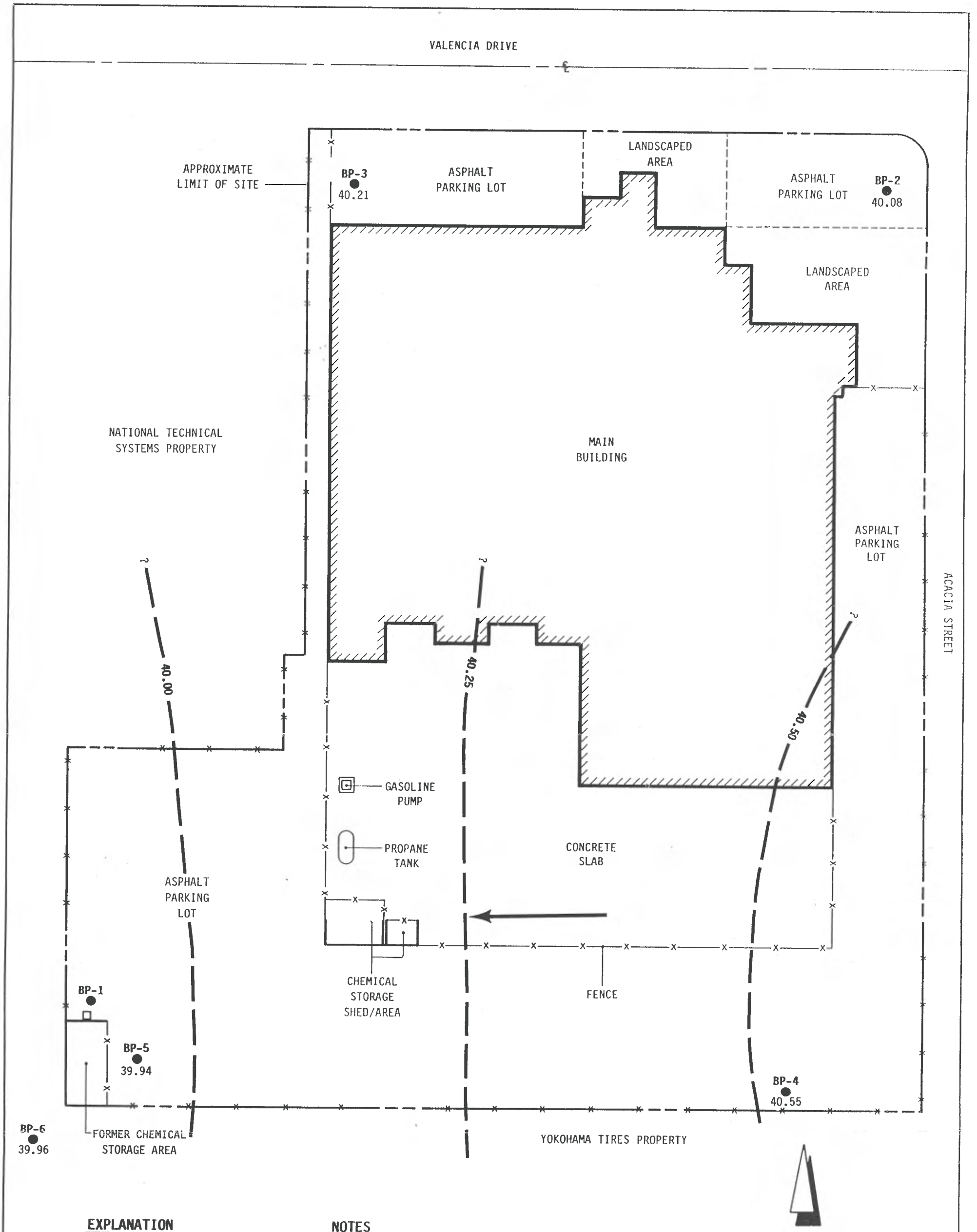
0 20 40

SCALE, FEET

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

SOIL GAS SURVEY MAP

PROJECT NUMBER A901978C | FIGURE 3



EXPLANATION

- BP-1 — MONITORING WELL LOCATION AND DESIGNATION
- CONCRETE-LINED SUMP
- APPROXIMATE DIRECTION OF GROUNDWATER FLOW
- 40.25 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL = 0.25 FEET)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN - PLUMBING", BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960
3) THE NUMBER ADJACENT TO MONITORING WELL DENOTES GROUNDWATER ELEVATION RELATIVE TO MEAN SEA LEVEL (MEASURED ON 19 DECEMBER 1991)

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

GROUNDWATER ELEVATION CONTOUR MAP

PROJECT NUMBER A901978C | FIGURE 4

APPENDIX A

OPTIMAL TECHNOLOGY INC. REPORT

SOIL VAPOR STUDY RESULTS

American Electronics
Fullerton, California

Project #: OTI-121991

Submitted By:

Optimal Technology Inc.

December 29, 1991

OPTIMAL TECHNOLOGY INC.
Specializing in Environmental Field Services

RECEIVED
DEC 3 1 1991
APPLIED GEOSCIENCES INC.

December 29, 1991
OTI-121991

Mr. Paul Roberts
Applied Geosciences Inc.
17321 Irvine Blvd.
Tustin, CA 92680

Dear Mr. Roberts:

This letter presents the results of the soil gas investigation conducted by Optimal Technology Inc. (OTI) for Applied Geosciences Inc. at the American Electronics, Inc. facility located in the city of Fullerton, CA. This study was conducted on December 19 & 20, 1991.

OTI was contracted to perform a soil gas survey at this location to screen for possible chlorinated solvent contamination (111-TCA, TCE, & PCE) and petroleum hydrocarbons in the subsurface. The primary function of this soil vapor survey was to see the horizontal migration patterns of the chlorinated solvents.

Sampling Method

Sampling was performed by hydraulically pushing 1/2" galvanized steel soil gas probes to depths of 10 feet below ground surface. An electric rotary hammer drill was used to drill a 1.25 inch hole through the overlying concrete/asphalt to allow probe placement. The same electric hammer drill was used to push probes if resistence was encountered to there desired sampling depths.

At each sampling depth an electric vacuum pump capable of drawing 25" of mercury was then attached to the probe and flow rate was set at 5 L/minute and then purged for 1 minute prior to sample collection. Samples were obtained in Hamilton, 1 milliliter gas-tight syringes by puncturing silicone tubing connecting the sampling probe and the vacuum pump. New silicone tubing was used at each sampling point to prevent cross contamination. Samples were immediately injected into the gas chromatograph after collection. The sampling system was blanked before each sampling location and depth by collecting a sample through the probe before emplacement. If contamination was detected, corrective actions were taken to try to eliminate the source and blanks were re-analyzed. If attempts to eliminate the source of contamination were unsuccessful, the quantities were evaluated as to their affects on the actual results.

All analyses were performed on a laboratory grade Hewlett Packard model 5890 Series II gas chromatograph equipped with both a Flame Ionization Detector (FID) and a Electron Capture Detector (ECD). Restec wide bore capillary columns using nitrogen as the carrier gases was

used to perform all analysis. All results were collected on a 80386 based personal computer utilizing Hewlett Packard's PC based chromatographic data collection and handling system.

Quality Assurance

Calibrations

The gas chromatograph was calibrated at the beginning of the work day. A three point calibration consisting of 20, 50 and 100 ul injections of prepared standards was performed at the beginning of each work day. A calibration factor based on a best fit line forced through the origin was calculated using the HP data system. If the r^2 factor generated from this line was not greater than 0.980, an additional three point calibration was performed. Detection limits were calculated to be 0.1 ug/L for TVPH and 0.01 ug/L for 11-DCE, 111-TCA, TCE, and PCE.

Continuing Calibrations

A 1-point continuing calibration was run after the 10th sample analyzed and compared to that days 3-point calibration. This assured that the instrument response was consistent throughout the day. These continuing calibrations must agree within 20% of that days 3-point calibration or an additional 3-point calibration would be performed and the new calibration factor used for subsequent samples. A continuing calibration was not run on December 29th because 10 or less samples were collected.

Sample Duplicates

One duplicate analysis was run after the 10th sample to evaluate the reproducibility of both the sampling system and the instrument. If the difference between samples collected varied more than 20%, the entire system was evaluated and the cause of the inconsistency was determined and corrected, if possible. A sample duplicate was not collected on September 19th because 10 or less samples were collected.

Equipment Blanks

Blanks were run on each new probe prior to installation. The blanks were collected by hooking up the entire sampling system above ground and collecting an air sample. These blanks checked the probes, fittings, septum, syringe, GC column, GC detector and the ambient air. If contamination was found to exist, the procedure was repeated until the source was determined and corrected, if possible. The quantities of any contaminants found in the blanks were reported on the Soil Gas Quality Assurance table and were not subtracted from the results given in the Soil Gas Results table.

Subsurface Conditions

During probe emplacement and removal, observed soil types were predominantly silty sands which offered moderate (2.5 to 3.5 L/m) to good sampling flows indicating a medium to high porosity soils. Depth to groundwater is greater than 100 ft.

Scope of Work

A total of 30 soil gas samples were collected and analyzed from 29 sampling locations (SG-21 was sampled at both 10 and 20 ft.). All other samples were collected from depths of 10 feet. All vapor samples collected were analyzed for on-site for Total Volatile Petroleum Hydrocarbons (TVPH) with a Flame Ionization Detector and chlorinated solvents with a Electron Capture Detector. All holes were backfilled with bentonite and patched with asphalt or concrete. Figure 1 shows the approximate location of all the sampling locations.

Sample identification, sampling depths and injection amounts are presented on the daily field log attached. The file names presented in the daily logs identify the correlating chromatograms.

Results

Of the 30 samples collected, all 30 had detectable levels of 111-TCA, TCE, PCE and an unknown that is listed as 11-DCE. No TVPH's were detected at this site. At soil gas sample 21 A & B, three (3) additional unidentifiable peaks were also seen in small concentration levels.

See Soil Gas Results section for all analytical results.

Conclusions

Based on the analytical results of the soil vapor survey conducted, detectable levels of 11-DCE, 111-TCA, TCE, & PCE vapors are present in the shallow subsurface soil. PCE and TCE concentration levels are highest (1670 ug/L for PCE & 750 ug/L for TCE) just north of the chemical storage facililty on the American Electronics property and decrease significantly as you move south. 111-TCA levels are highest (67.7 ug/L) in the area northwest of the American Electronics chemical storage facility right across the property boundary. The 11-DCE concentration levels are highest (91.2 ug/L) on the northern side of the soil gas study and decrease as you move south.

Disclaimer

All conclusions and recommendations presented in this letter are based solely on the information collected by the soil gas survey conducted by OTI. Soil gas testing is only a

subsurface screening tool and does not represent actual contaminant concentrations in either the soil and/or groundwater.

We enjoyed working with you on this project and look forward to future projects. If you have any questions please contact me at (805) 684-6226.

Sincerely
Optimal Technology Inc.

Tony J. Theisen

Tony J. Theisen
Project Manager

Optimal Technology Inc.

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SOIL GAS RUN TABLE

DATE: Dec/19/1991

SAMPLE ID	FILE NAME	DEPTH (Ft.)	VOLUME (ul)	COMMENTS
Field Blank	E/FAGI-01	NA	500/1000	OK
20 ul Calibration	E/FAGI-02	NA	20/20	Calibration
50 ul Calibration	E/FAGI-03	NA	50/50	Calibration
100 ul Calibration	E/FAGI-04	NA	100/100	Calibration
EB-01	E/FAGI-05	NA	200/1000	Equipment Blank
SG-01	E/FAGI-06	10	200/1000	Moderate Flow
EB-02	E/FAGI-07	NA	200/1000	Equipment Blank
SG-02	E/FAGI-08	10	200/1000	Moderate Flow
EB-03	E/FAGI-09	NA	200/1000	Equipment Blank
SG-03	E/FAGI-10	10	200/1000	Moderate Flow
EB-04	E/FAGI-11	NA	200/1000	Equipment Blank
SG-04	E/FAGI-12	10	200/1000	Moderate Flow
EB-05	E/FAGI-13	NA	200/1000	Equipment Blank
SG-05	E/FAGI-14	10	200/1000	Moderate Flow
EB-06	E/FAGI-15	NA	200/1000	Equipment Blank
SG-06	E/FAGI-16	10	200/1000	Good flow - Unknown peaks
EB-07	E/FAGI-17	NA	200/1000	Equipment Blank
SG-07	E/FAGI-19	10	200/1000	Moderate Flow
EB-08	E/FAGI-20	NA	200/1000	Equipment Blank
SG-08	E/FAGI-21	10	200/1000	Moderate Flow
EB-09	E/FAGI-22	NA	200/1000	Equipment Blank
SG-09	E/FAGI-23	10	200/1000	Good Flow
EB-10	E/FAGI-24	NA	200/1000	Equipment Blank
SG-10	E/FAGI-25	10	200/1000	Moderate Flow
SG-10-DUP	E/FAGI-26	10	200/1000	Sample Duplicate
Cont. Cal.	E/FAGI-27	NA	50/50	Mid-Point Calibration
EB-11	E/FAGI-28	NA	200/1000	Equipment Blank
SG-11	E/FAGI-29	10	200/1000	Good Flow
EB-12	E/FAGI-30	NA	100/1000	Equipment Blank
SG-12	E/FAGI-31	10	100/1000	Moderate Flow
EB-13	E/FAGI-32	NA	100/1000	Equipment Blank
SG-13	E/FAGI-33	10	100/1000	Moderate Flow
EB-14	E/FAGI-34	NA	100/1000	Equipment Blank
SG-14	E/FAGI-35	10	100/1000	Good Flow
EB-15	E/FAGI-36	NA	100/1000	Equipment Blank
SG-15	E/FAGI-37	10	20/1000	Good Flow
EB-16	E/FAGI-38	NA	20/1000	Equipment Blank
SG-16	E/FAGI-39	10	20/1000	Good Flow
EB-17	E/FAGI-40	NA	20/1000	Equipment Blank
SG-17	E/FAGI-41	10	20/1000	Good Flow

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SOIL GAS RUN TABLE

DATE: Dec/19/1991

SAMPLE ID	FILE NAME	DEPTH (Ft.)	VOLUME (ul)	COMMENTS
EB-18	E/FAGI-42	NA	20/1000	Equipment Blank
SG-18	E/FAGI-43	10	20/1000	Moderate Flow
EB-19	E/FAGI-44	NA	20/1000	Equipment Blank
SG-19	E/FAGI-45	10	20/1000	Moderate Flow
EB-20	E/FAGI-46	NA	20/1000	Equipment Flow
SG-20	E/FAGI-47	10	20/1000	Good Flow

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SOIL GAS RUN TABLE

DATE: Dec/20/1991

SAMPLE ID	FILE NAME	DEPTH (Ft.)	VOLUME (ul)	COMMENTS
Field Blank	E/FAGI-48	NA	500/1000	OK
20 ul Calibration	E/FAGI-	NA	20/20	Calibration
50 ul Calibration	E/FAGI-	NA	50/50	Calibration
100 ul Calibration	E/FAGI-	NA	100/100	Calibration
EB-21-A	E/FAGI-	NA	20/1000	Equipment Blank
SG-21-A	E/FAGI-	10	20/1000	Good Flow
EB-21-B	E/FAGI-	NA	20/1000	Equipment Blank
SG-21-B	E/FAGI-	20	20/1000	Good Flow
EB-22	E/FAGI-	NA	20/1000	Equipment Blank
SG-22	E/FAGI-	10	20/1000	Moderate Flow
EB-23	E/FAGI-	NA	20/1000	Equipment Blank
SG-23	E/FAGI-	10	20/1000	Good Flow
EB-24	E/FAGI-	NA	20/1000	Equipment Blank
SG-24	E/FAGI-	10	20/1000	Good Flow
EB-25	E/FAGI-	NA	20/1000	Equipment Blank
SG-25	E/FAGI-	10	20/1000	Moderate Flow
EB-26	E/FAGI-	NA	20/1000	Equipment Blank
SG-26	E/FAGI-	10	20/1000	Moderate Flow
EB-27	E/FAGI-	NA	20/1000	Equipment Blank
SG-27	E/FAGI-	10	20/1000	Moderate Flow
EB-28	E/FAGI-	NA	20/1000	Equipment Blank
SG-28	E/FAGI-	10	20/1000	Moderate Flow
EB-29	E/FAGI-	NA	20/1000	Equipment Blank
SG-29	E/FAGI-	10	20/1000	Moderate Flow

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SOIL GAS RESULTS

COMPANY: Applied Geosciences, Inc.
CONTACT: Mr. Paul Roberts
ADDRESS: 17321 Irvine Blvd.
Tustin, CA 92680

PROJECT NAME: American Electronics
PROJECT NUMBER: OTI-121991
SAMPLE DATES: December 19 &20, 1991
MATRIX TYPE: Air (Soil Vapor)

SAMPLE ID	TVPH (ug/L)	11-DCE (ug/L)	111-TCA (ug/L)	*TCE (ug/L)	*PCE (ug/L)
SG-01	ND	0.21	3.09	0.65	0.35
SG-02	ND	0.09	4.82	0.63	0.26
SG-03	ND	0.07	1.29	0.25	0.14
SG-04	ND	0.07	1.55	0.30	0.17
SG-05	ND	0.14	9.74	1.08	0.43
SG-06	ND	0.10	3.44	0.53	0.22
SG-07	ND	1.65	1.94	55.9	47.2
SG-08	ND	0.17	0.21	0.63	0.97
SG-09	ND	30.0	20.0	750	1650
SG-10	ND	3.57	5.14	60.0	110
SG-11	ND	17.6	5.28	260	220
SG-12	ND	0.40	8.58	23.8	32.0
SG-13	ND	0.33	6.13	10.6	14.4
SG-14	ND	31.7	2.58	400	310
SG-15	ND	60.2	6.41	480	475
SG-16	ND	57.7	9.07	360	390
SG-17	ND	91.2	2.19	350	75.0
SG-18	ND	24.9	4.63	59.0	24.3
SG-19	ND	5.90	0.96	17.3	19.0
SG-20	ND	40.2	0.36	15.3	42.0
SG-21-A	ND	27.0	42.7	580	1670
SG-21-B	ND	58.1	84.7	885	1880
SG-22	ND	0.39	28.4	81.8	115
SG-23	ND	43.4	67.7	670	920
SG-24	ND	31.7	38.5	585	310
SG-25	ND	1.80	6.14	21.3	19.7
SG-26	ND	1.48	0.14	3.74	6.17
SG-27	ND	28.8	12.3	64.2	30.0
SG-28	ND	0.51	1.45	7.48	8.32
SG-29	ND	0.61	5.92	8.95	12.2

* Used FID for concentration levels above 10 ug/L because levels were above electronic scale of the ECD

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SOIL GAS QA RESULTS

COMPANY: Applied Geosciences, Inc.
CONTACT: Mr. Paul Roberts
ADDRESS: 17321 Irvine Blvd.
Tustin, CA 92680

PROJECT NAME: American Electronics
PROJECT NUMBER: OTI-121991
SAMPLE DATES: December 19 & 20, 1991
MATRIX TYPE: Air (Soil Vapor)

BLANKS

SAMPLE ID	TVPH (ug/L)	11-DCE (ug/L)	111-TCA (ug/L)	TCE (ug/L)	PCE (ug/L)
EB-01	ND	0.01	0.02	0.02	ND
EB-02	ND	ND	0.01	ND	ND
EB-03	ND	ND	0.01	0.03	<0.01
EB-04	ND	0.02	0.02	0.03	<0.01
EB-05	ND	0.01	0.02	0.02	<0.01
EB-06	ND	0.01	0.02	0.02	<0.01
EB-07	ND	0.01	0.03	0.02	<0.01
EB-08	ND	ND	ND	ND	ND
EB-09	ND	ND	0.01	ND	ND
EB-10	ND	0.10	0.09	ND	ND
EB-11	ND	0.09	0.02	ND	ND
EB-12	ND	ND	ND	ND	ND
EB-13	ND	0.10	0.01	ND	ND
EB-14	ND	0.14	0.05	ND	ND
EB-15	ND	0.08	0.03	ND	ND
EB-16	ND	0.07	0.02	ND	ND
EB-17	ND	0.32	0.04	ND	ND
EB-18	ND	0.05	ND	ND	ND
EB-19	ND	0.10	0.01	ND	ND
EB-20	ND	0.03	ND	ND	ND

CONTINUING CALIBRATIONS

FILE NAME	INJ. AMT.	11-DCE (ng)	% DIFF	111-TCA (ng)	% DIFF	TCE (ng)	% DIFF	PCE (ng)	% DIFF
E/FAGI-27	6.25	6.02	3.8	6.75	8.0	6.04	3.7	6.00	4.0

DUPLICATES

SAMPLE ID	TVPH (ug/L)	% DIFF	11-DCE (ug/L)	% DIFF	111-TCA (ug/L)	% DIFF	TCE (ug/L)	% DIFF	PCE (ug/L)	% DIFF
SG-10-DUP	ND		3.82	6.5	8.24	38.0	63.7	5.9	110	0.0

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SOIL GAS QA RESULTS

COMPANY: Applied Geosciences, Inc.
CONTACT: Mr. Paul Roberts
ADDRESS: 17321 Irvine Blvd.
Tustin, CA 92680

PROJECT NAME: American Electronics
PROJECT NUMBER: OTI-121991
SAMPLE DATES: December 19 & 20, 1991
MATRIX TYPE: Air (Soil Vapor)

BLANKS

SAMPLE ID	TVPH (ug/L)	11-DCE (ug/L)	111-TCA (ug/L)	TCE (ug/L)	PCE (ug/L)
EB-21-A	ND	0.14	0.03	ND	ND
EB-21-B	ND	0.12	0.03	ND	ND
EB-22	ND	0.10	0.01	ND	ND
EB-23	ND	ND	0.04	ND	ND
EB-24	ND	0.08	0.02	ND	ND
EB-25	ND	ND	0.01	ND	ND
EB-26	ND	ND	ND	ND	ND
EB-27	ND	ND	ND	ND	ND
EB-28	ND	0.02	0.02	ND	ND
EB-29	ND	0.01	0.04	ND	ND
					ND

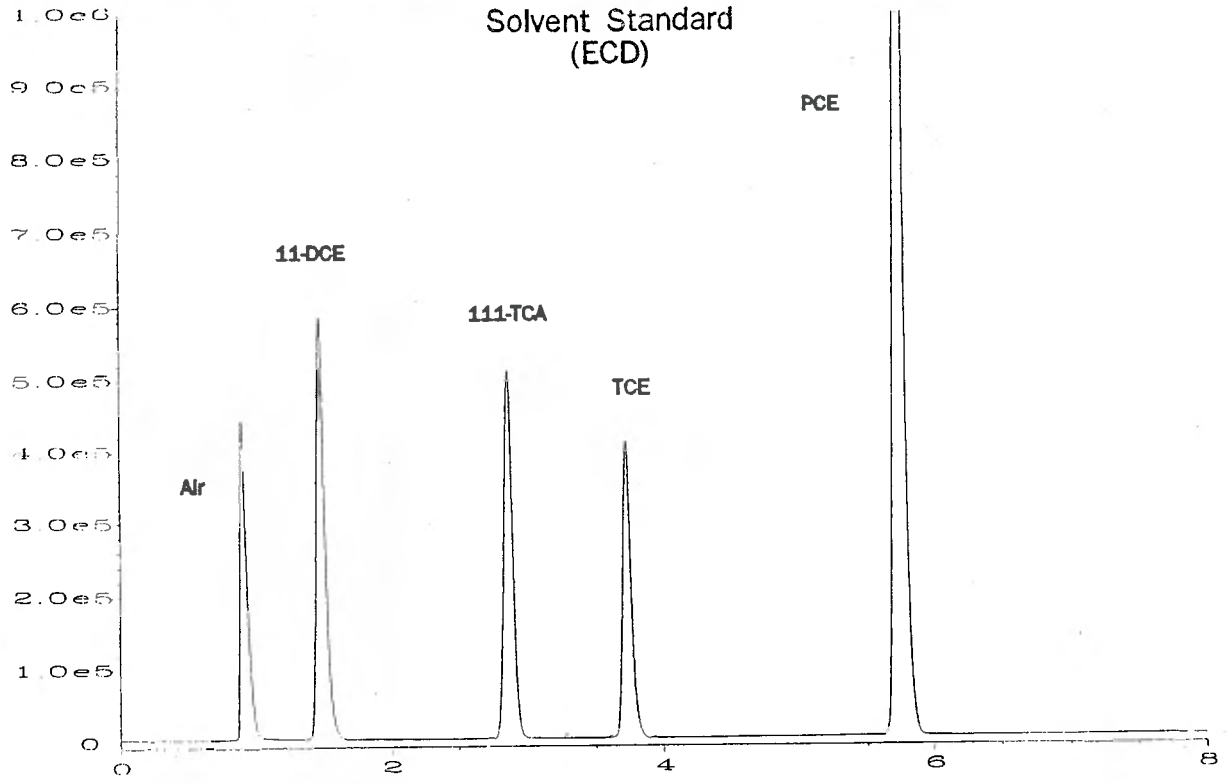
CONTINUING CALIBRATIONS

FILE NAME	INJ. AMT.	11-DCE (ng)	% DIFF	111-TCA (ng)	% DIFF	TCE (ng)	% DIFF	PCE (ng)	% DIFF

DUPLICATES

SAMPLE ID	TVPH (ug/L)	% DIFF	11-DCE (ug/L)	% DIFF	111-TCA (ug/L)	% DIFF	TCE (ug/L)	% DIFF	PCE (ug/L)	% DIFF

CHROMATOGRAMS



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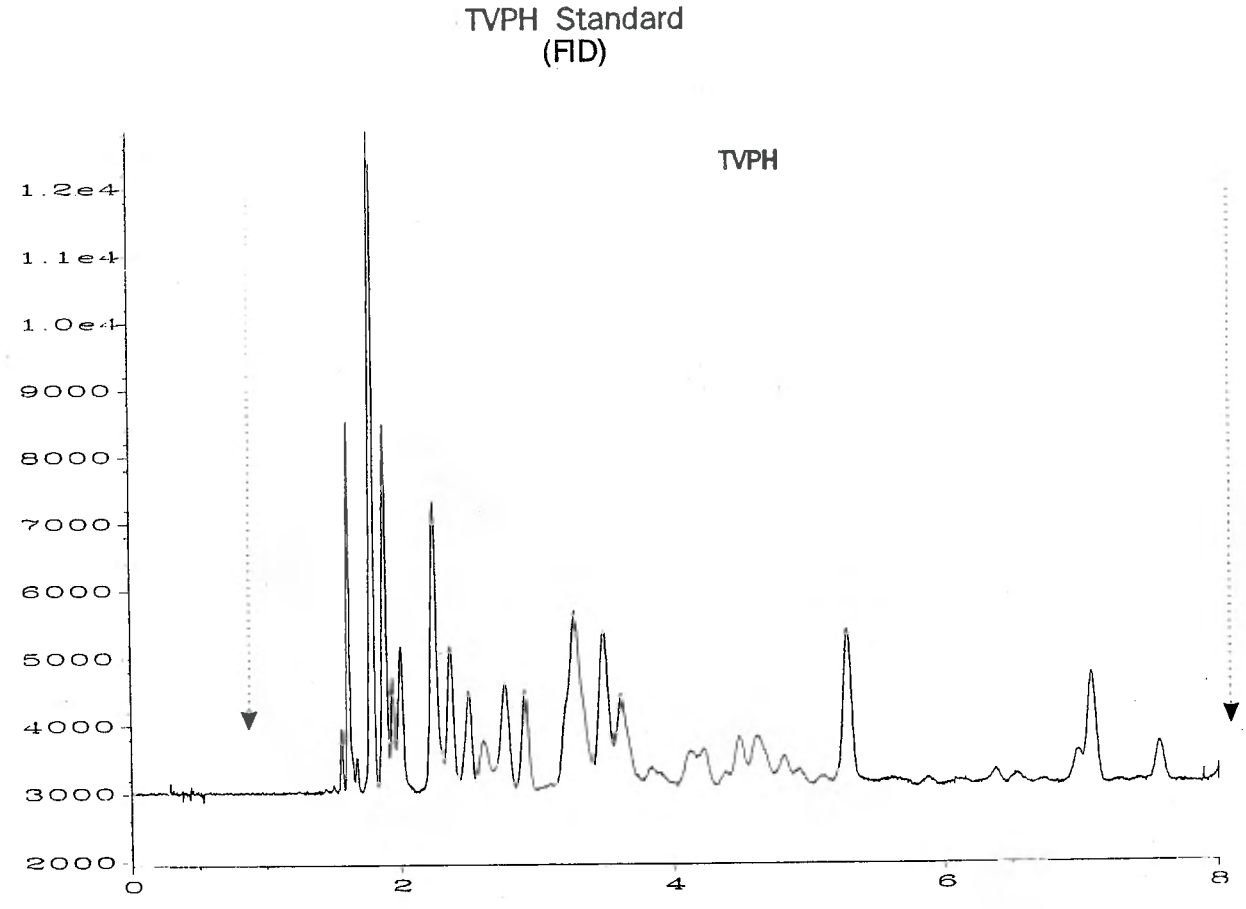

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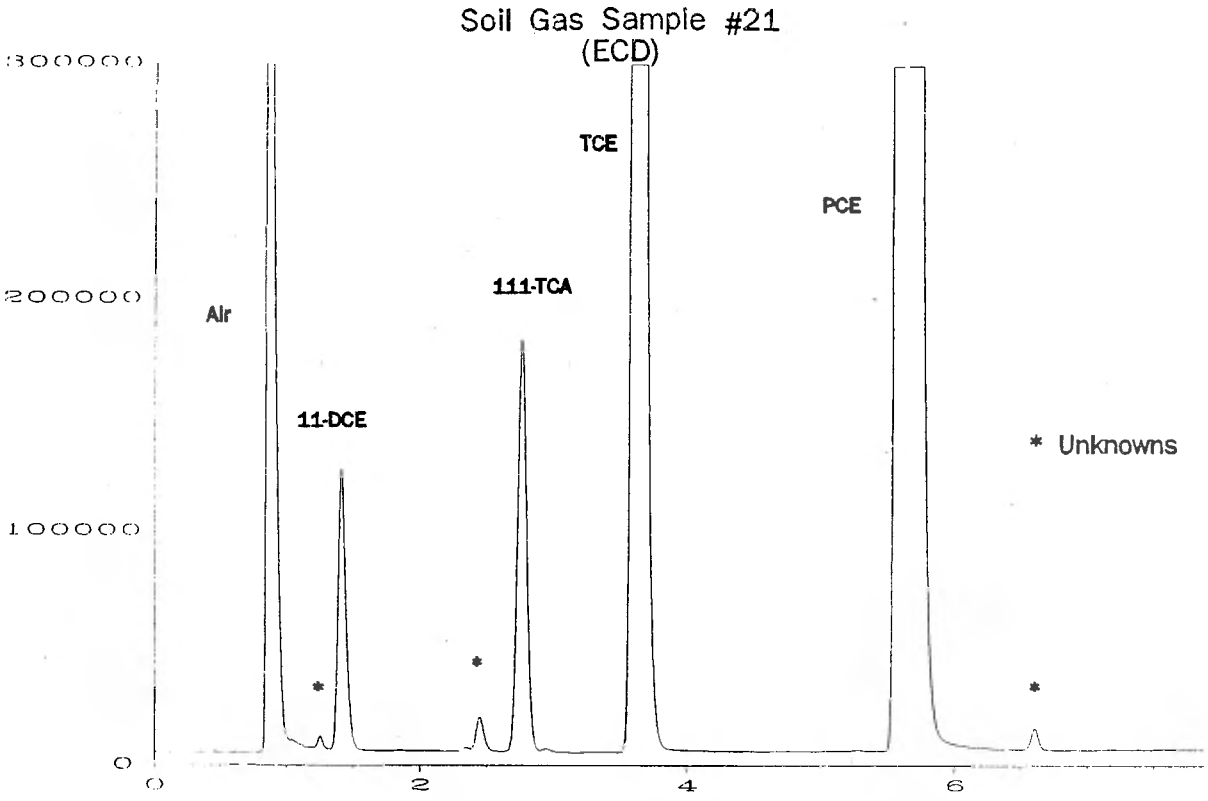

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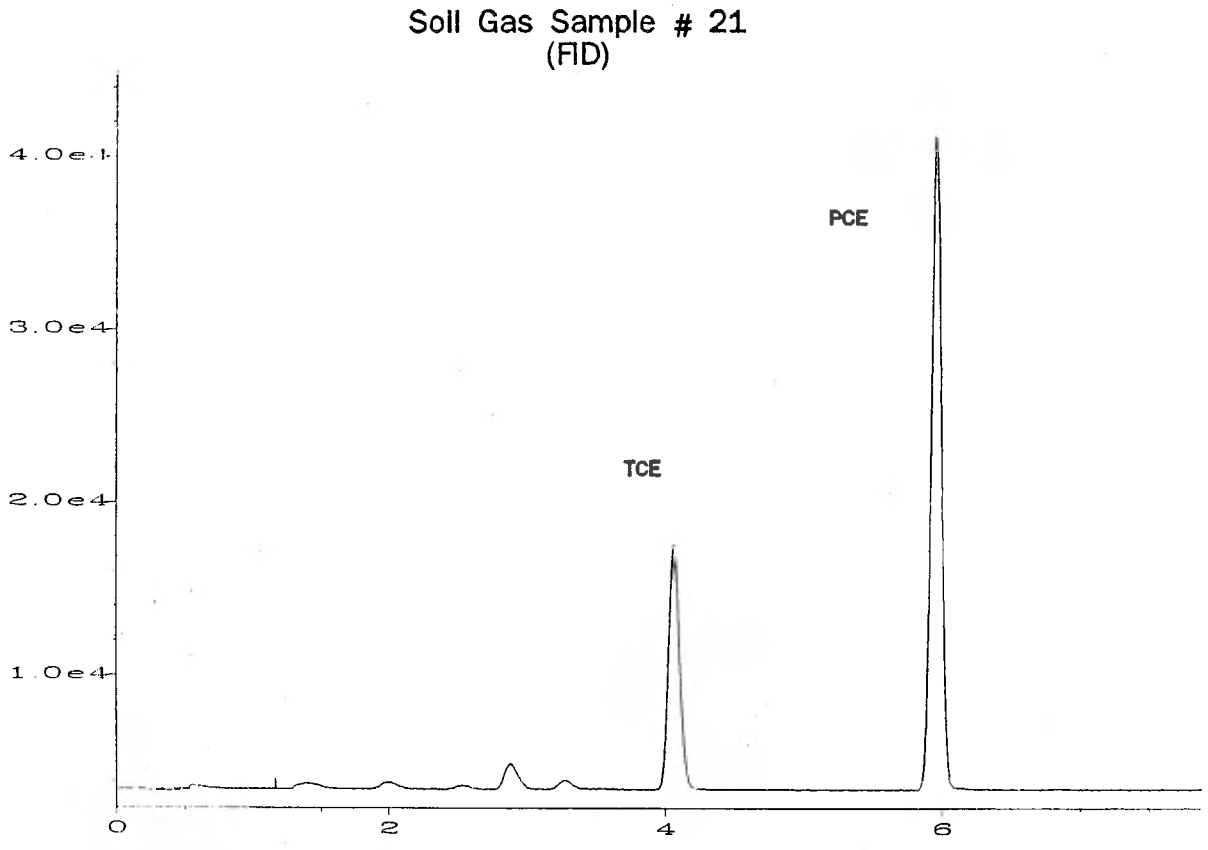

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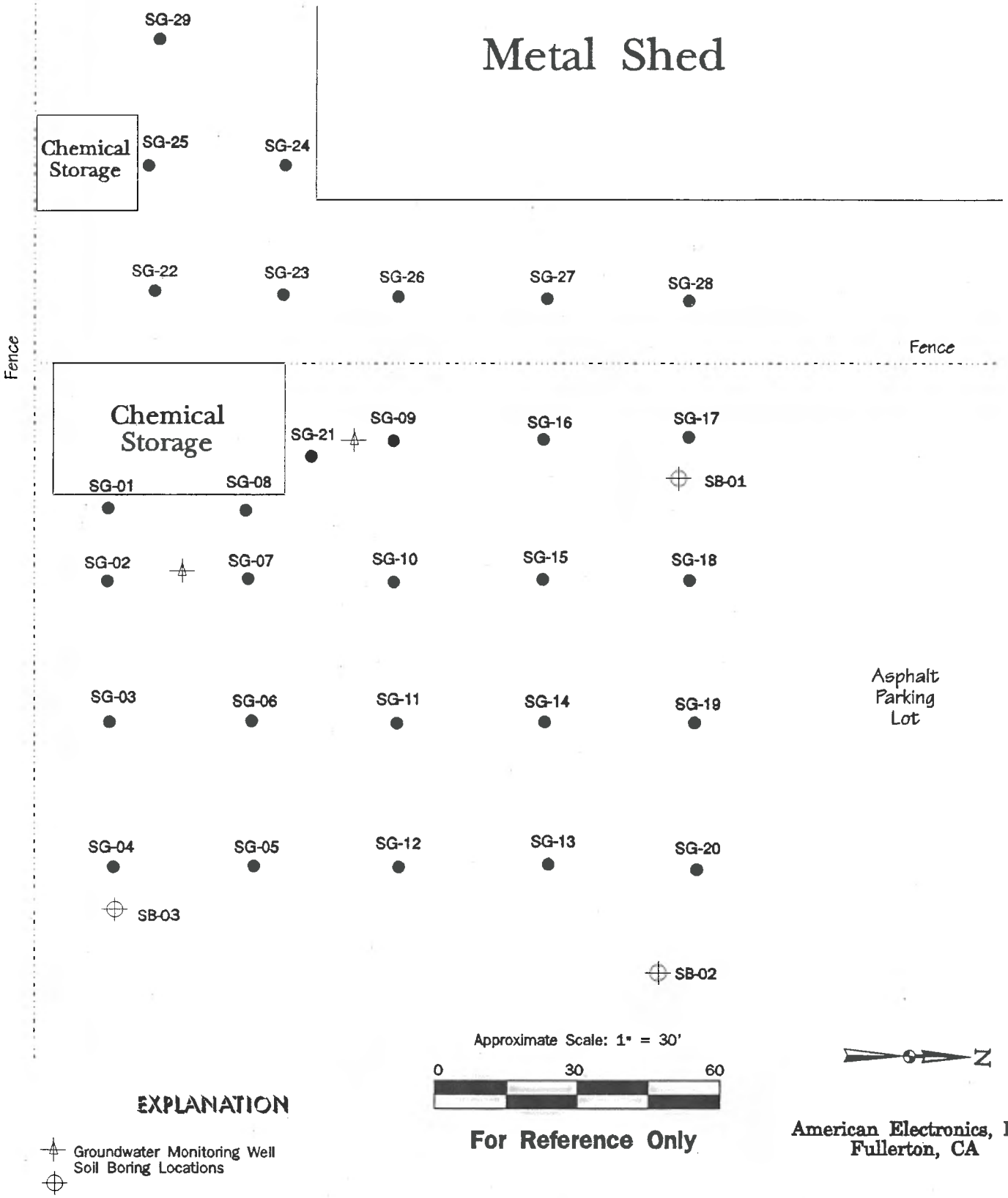
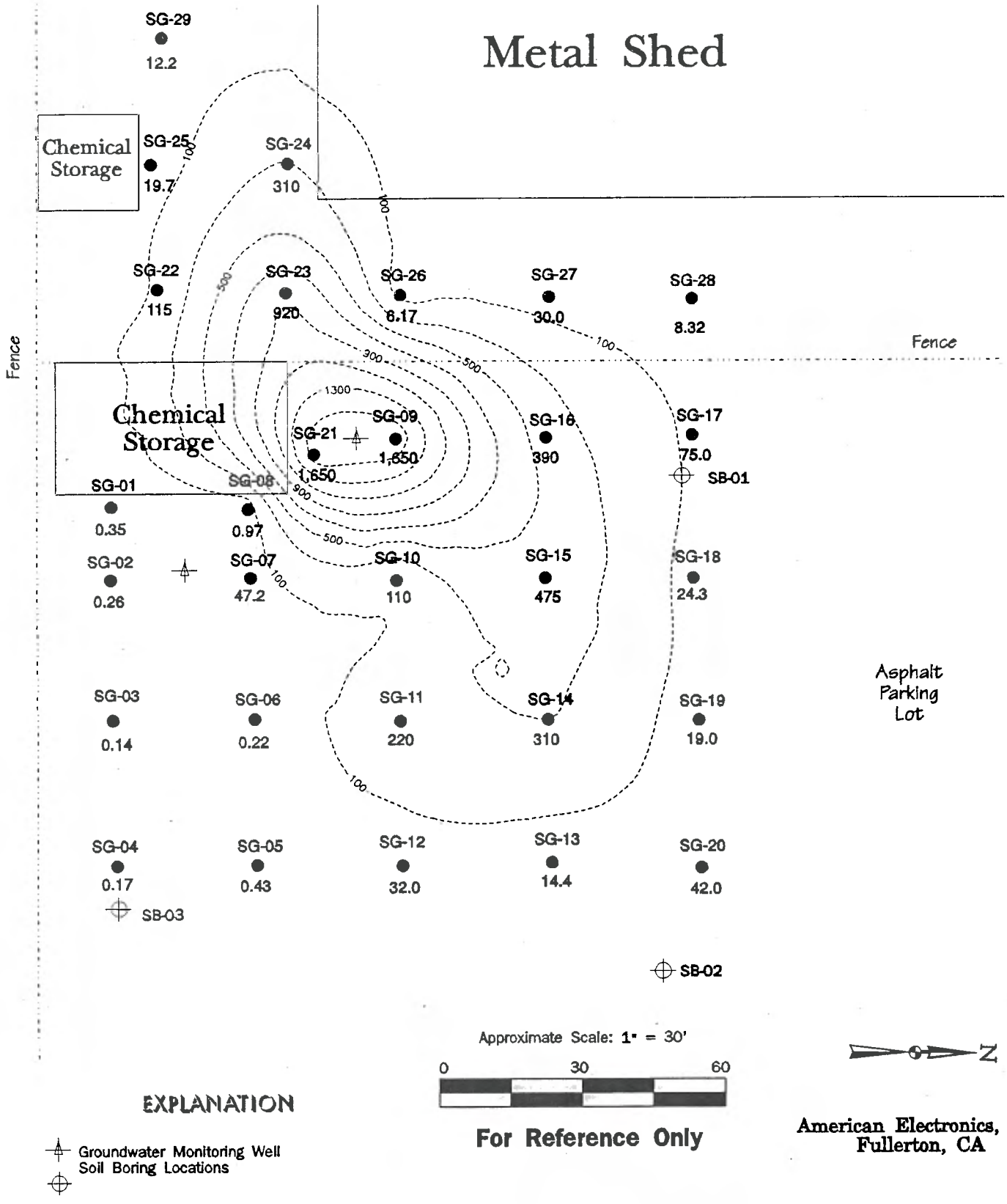


OPTIMAL TECHNOLOGY INC.

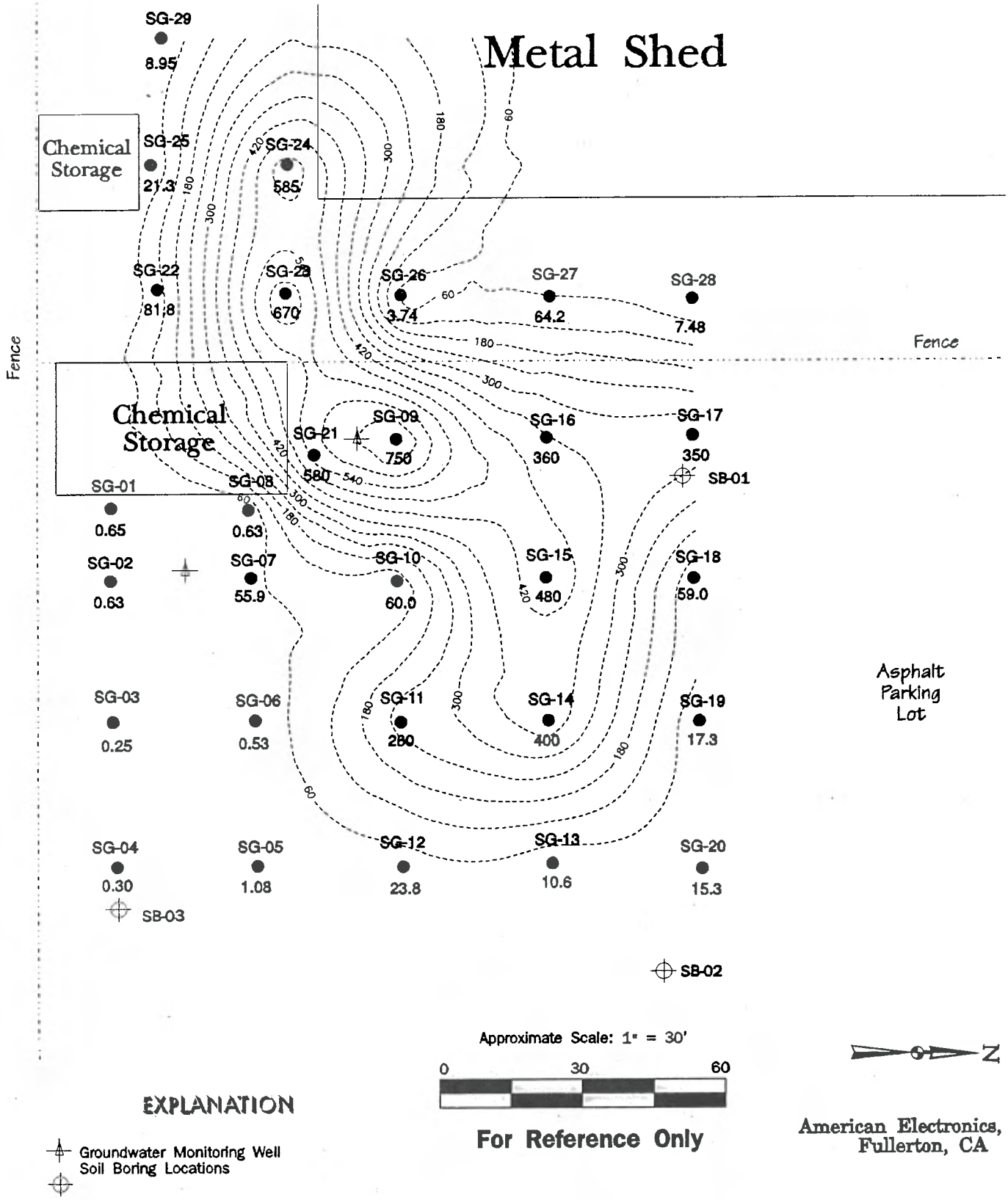
6430 Via Real, Suite 6
Carpinteria, CA 93013

*Tel: (805) 684-6226 * Fax: (805) 684-1061*

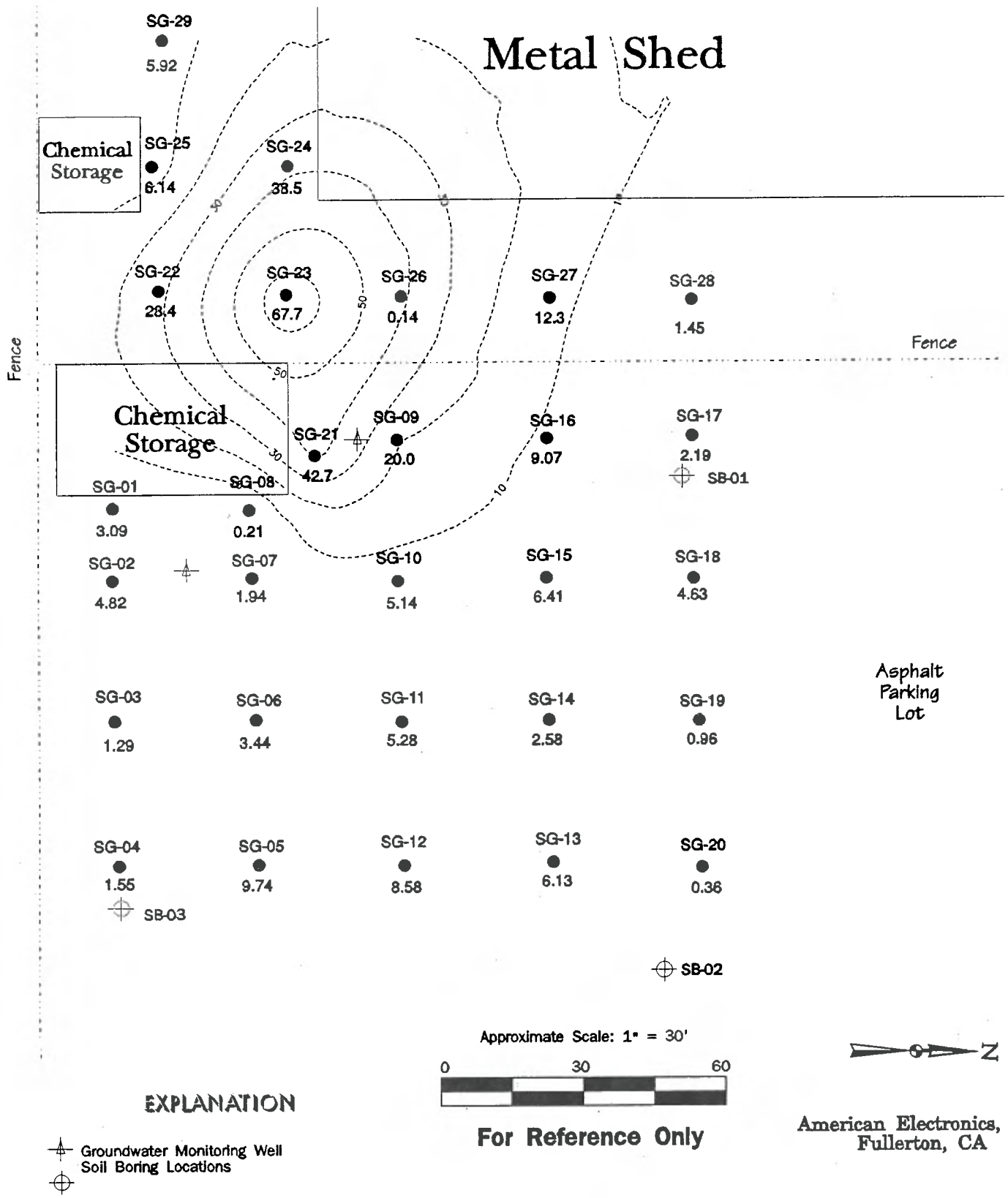
DATE: December 19, 1990	**PROJECT NO:** OTI-121991	**APPROVED BY:** T.L.T.	**FIGURE** 1
COMPANY: Applied Geosciences	**TITLE:** Soil Gas Sampling Locations		



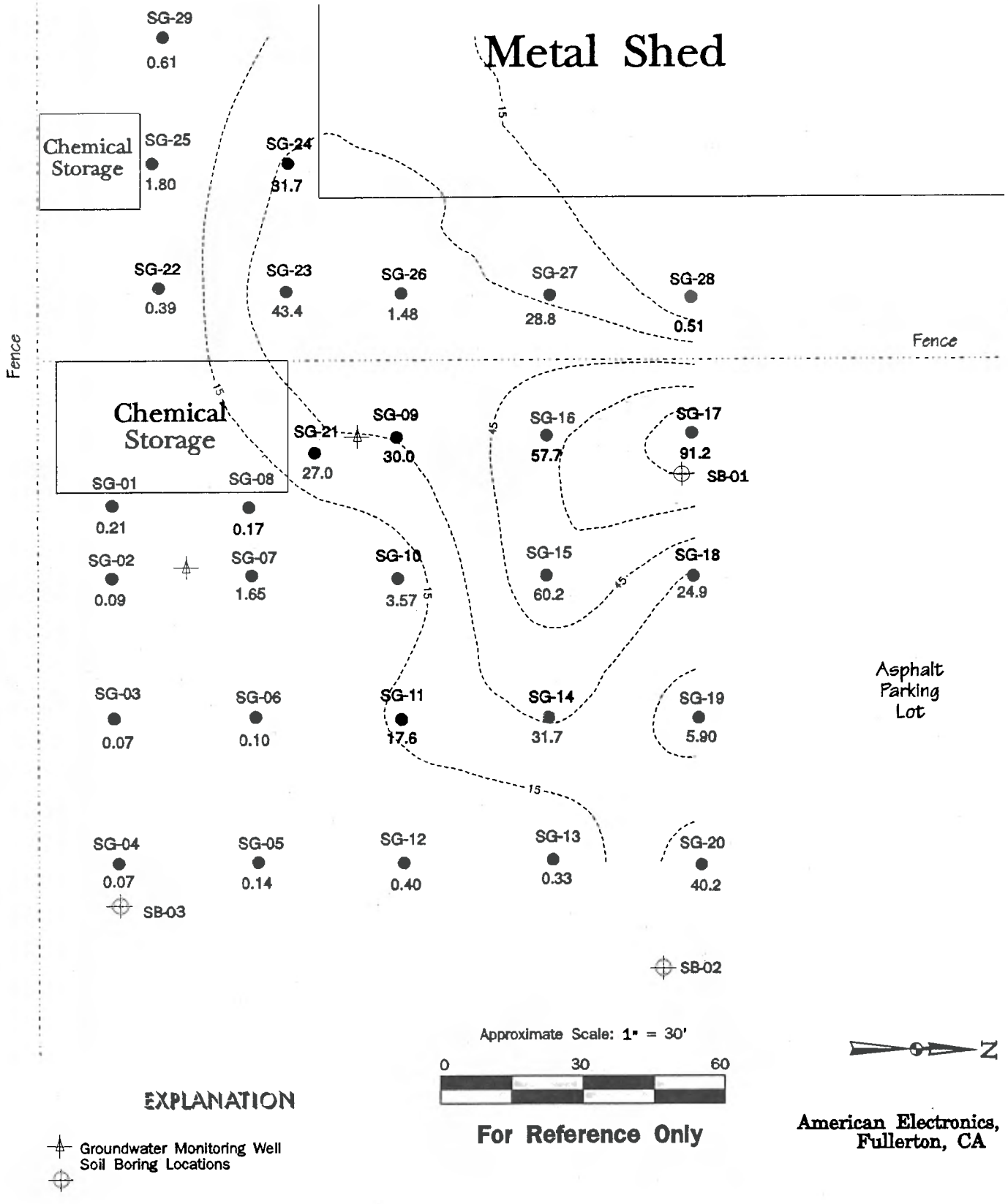
OPTIMAL TECHNOLOGY INC. 6430 Via Real, Suite 6 Carpinteria, CA 93013 *Tel: (805) 684-6226 * Fax: (805) 684-1061*	**DATE:** December 19, 1990	**PROJECT NO:** OTI-121991	**APPROVED BY:** T.L.T.	**FIGURE** **2**
	COMPANY: Applied Geosciences	**TITLE:** PCE Concentrations (ug/L)		



OPTIMAL TECHNOLOGY INC. 6430 Via Real, Suite 6 Carpinteria, CA 93013 *Tel: (805) 684-6226 * Fax: (805) 684-1061*	**DATE:** December 19, 1990	**PROJECT NO:** OTI-121991	**APPROVED BY:** T.L.T.	**FIGURE** **3**
	COMPANY: Applied Geosciences	**TITLE:** TCE Concentrations (ug/L)		



OPTIMAL TECHNOLOGY INC. 6430 Via Real, Suite 6 Carpinteria, CA 93013 *Tel: (805) 684-6226 * Fax: (805) 684-1061*	**DATE:** December 19, 1990	**PROJECT NO:** OTI-121991	**APPROVED BY:** T.L.T.	**FIGURE** 4
	COMPANY: Applied Geosciences	**TITLE:** 111-TCA Concentrations (ug/L)		



OPTIMAL TECHNOLOGY INC. 6430 Via Real, Suite 6 Carpinteria, CA 93013 *Tel: (805) 684-6226 * Fax: (805) 684-1061*	**DATE:** December 19, 1990	**PROJECT NO:** OTI-121991	**APPROVED BY:** T.L.T.	**FIGURE** **5**
	COMPANY: Applied Geosciences	**TITLE:** 11- DCE? Concentrations (ug/L)		

APPENDIX B

SUMMARY OF FIELD PROCEDURES

APPENDIX B

SUMMARY OF FIELD PROCEDURES

B1.0 DRILLING AND SOIL SAMPLING PROCEDURES

1. The borings were drilled using a truck-mounted drill rig equipped with a nominal 8-inch outside-diameter (OD) hollow-stem auger. Drilling services were provided by Drill-Line Division of Norwalk, California.

2. The augers were steam-cleaned prior to the drilling.

3. Soil cuttings from the drilling operations were stored on-site in Department of Transportation (DOT)-approved 55-gallon barrels. The barrels were labeled with the collection date and the designation of the boring from which the soil was collected.

4. Soil descriptions (in general accordance with the Unified Soil Classification System), sample type and depth, and related drilling information were recorded on a boring log under the supervision of a State-registered geologist from Applied Geosciences Inc.

5. Soil samples were collected at approximate 2.5-foot-depth intervals, from approximately 2.5 feet BGS to approximately 10 feet BGS, and at approximate 5-foot-depth intervals thereafter, using a split-barrel modified California sampler, continuing to the bottom of the borings.

6. The sampler was washed between sampling intervals, using a bristle brush, with a trisodium phosphate (TSP) solution; this was followed by two tapwater rinses and a deionized-water rinse. The sampler was dried by air or with a paper towel prior to being used for sampling.

7. Soil samples were collected (at each sample interval) in four 4-inch-long and one 2-inch-long stainless steel sampling tubes inside the sampler. Prior to use, the sample tubes were immersed in a 3-percent sulfuric acid solution; they were then washed, rinsed, and dried using the procedures described in item 6.

8. The sampler was driven using a 140-pound hammer (approximate weight) dropping approximately 30 inches. The number of blows (blow count) required to advance the sampler 18 inches was recorded on the boring log.

9. Following retrieval of the sampler, the 4-inch-long tube at the bottom was removed from the sampler, its ends were covered with aluminum foil and capped with polyvinyl chloride (PVC) end caps; the end caps were secured with electrical tape. The sample tube was labeled with the sample number, collection date, and project number, and was retained for laboratory analysis.

10. The soil in the sample tube second from the bottom was used to describe the soil lithology and to measure volatile organic compounds (VOCs) using an Hnu organic vapor meter (OVM) or organic vapor analyzer. Approximately one-half of the soil was removed, the remaining sample was disaggregated, and the sample tube was capped with PVC end caps. The sample in the tube was then agitated and set aside for approximately 15 to 30 minutes to allow organic vapors, if present, to accumulate in the void space (headspace) of the sample tube. The headspace was then "sniffed" using an OVM equipped with a 10.2 electron-volt (eV) probe. The measurements were considered in the selection of soil samples for laboratory analyses.

11. The samples collected for chemical analyses were placed in Ziploc bags and stored in an ice chest cooled using ice to a temperature of approximately 40 degrees Fahrenheit.

12. The samples collected for chemical analyses were delivered to the laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory was documented using chain-of-custody procedures, including the use of chain-of-custody forms.

B2.0 WATER-SAMPLE COLLECTION PROCEDURES

1. Field activities and equipment utilization were recorded on a field report form.

2. The water level and depth to the bottom of each well was measured using a conductance probe or a stainless-steel measuring tape; the measurements were recorded to the nearest 0.01 foot. Prior to use, the probe or tape was rinsed in a solution of TSP, followed by two deionized-water rinses.

3. A water sample was collected following purging of two to three well volumes of water and stabilization of pH, temperature, and electrical conductivity readings to within 5 percent of each other for three subsequent measurements. Well volumes were estimated using the following equation:

$$\text{well volume} = (\text{pi})\ (h)\ [0.3(r_2^2 - r_1^2) + r_1^2)]$$

4. A 5-gallon bucket or 55-gallon drum was used to measure the volumes of water removed.

5. Stainless-steel bottom-valve bailers were used for sampling the wells. The bailers were triple rinsed with deionized water prior to their use.

6. Water samples were collected by lowering the bailer approximately 3 to 5 feet below the static water level, and raising the bailer slowly in order to minimize agitation of the water sample in the bailer.

7. Water was discharged from the bailer through a bottom discharge valve. Discharge to the sample container was at a rate slow enough to minimize bubbling or significant agitation of the liquid. The sample container was filled to the top (from the bottom up) and overfilled with the intention of having no remaining headspace.

8. Samples were collected in laboratory-approved 40-millimeter (ml) glass vials with Teflon septum lids.

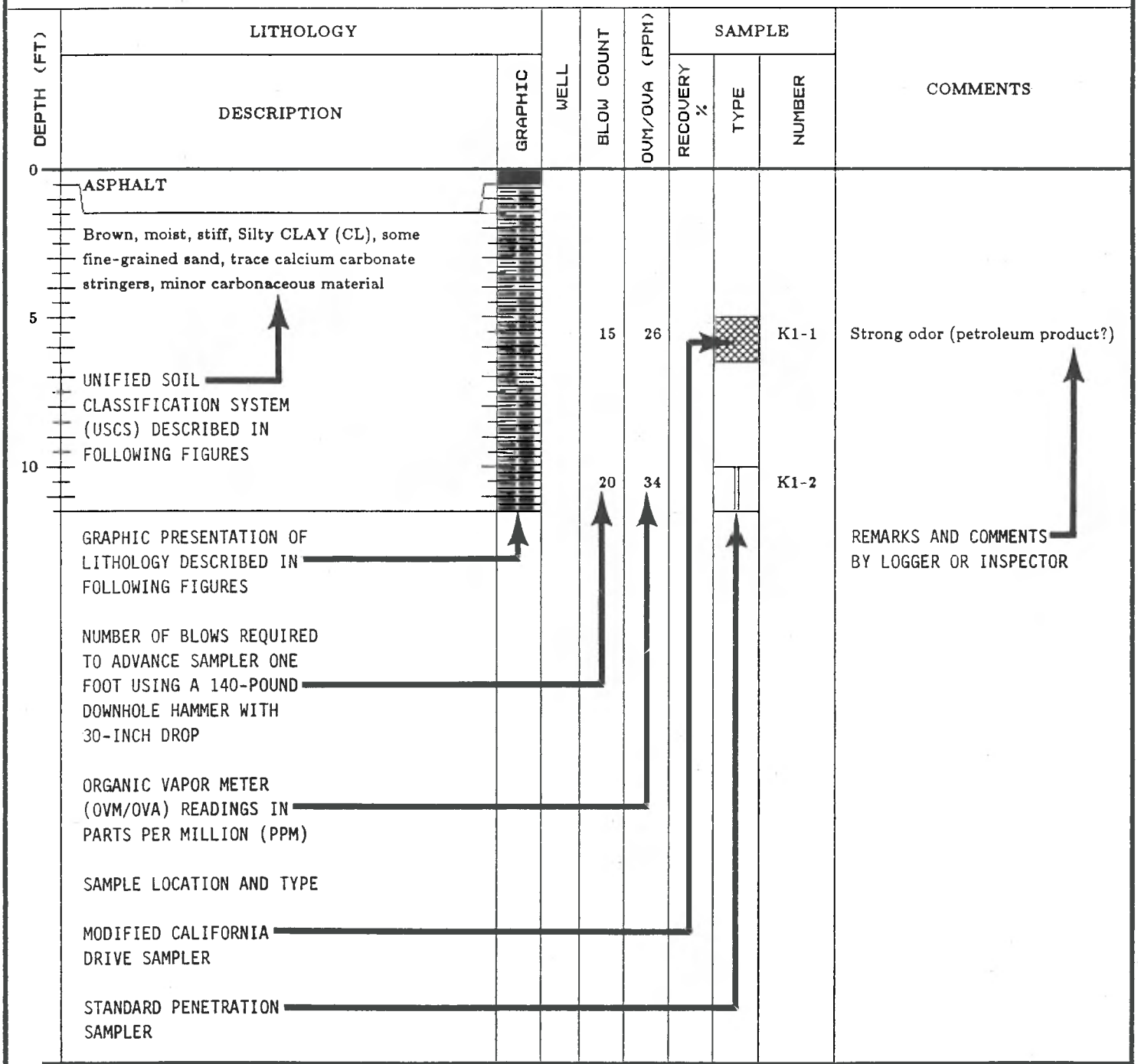
9. Following collection. all samples were placed in an ice chest cooled with ice to a temperature of approximately 40 to 50 degrees Fahrenheit.

10. Samples were delivered to the laboratory within approximately 24 hours of collection. Sample handling, transport, and delivery to the laboratory was documented using chain-of-custody procedures, including the use of chain-of-custody forms.

APPENDIX C

BORING LOGS

PROJECT ▷ KEY	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ AGI0000
LOGGED BY ▷ JOHN GEOLOGIST		START DATE ▷ 8 June 1989
CHECKED BY ▷ JON LOVEGREEN		COMPLETION DATE ▷ 8 June 1989
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷ 157.0		DRILLING COMPANY ▷ DRILLCO
DRILLING EQUIPMENT ▷ MOBILE DRILL CME WITH 6-INCH HOLLOW STEM AUGER		
BORING DEPTH (FT) ▷ 11.5	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial: Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A TO N/A
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ HNU WITH 10.2 EV PROBE
BACKFILL MATERIAL ▷ BENTONITE CHIPS		



BORING DESIGNATION		PAGE NUMBER	FIGURE NUMBER
K1	BORING LOG	1 OF 1	

AF	None	Fill
ASPHALT	0	Asphalt
BENTONIT	None	bentonite
CEMENT	3	CEMENT
CH	31	Fat clay, high plasticity
CH-CL	31	High to moderate plasticity clay
CHSH	31	Shaley Fat Clay
CIND&ASH	None	Cinders and ashes
CINDERS	None	Cinders
CL	None	Clay
CL-CH	2	Sandy, lean clay, low to moderate plasticity
CLG	30	Gravelly CLAY
CLM	None	Silty Clay
CLML	3	Silty Clay
CLS	None	Sandy CLAY
CMS	None	Clay, silt, sand interbeds
COAL	0	Coal
CONCRETE	None	Concrete
CONGLOM	13	Conglomerate: Printers only
DOLOMITE	11	Dolomite

SYMBOL ID Fill Style
Description

FILL 6
Fill

FS None
FISSILE SHALE

GC 3
Clayey gravel

GM None
Silty gravel

GMS None
Silty gravel with sand

GP None
Clean gravel

GS None
Sandy gravel

GS2 None
Sandy gravel

GW None
Well graded gravel

GYPSUM 5
Gypsum

IGNEOUS None

LIMESTON None
Limestone

MH 0
Elastic silt

ML None
silt

MLC None
Clayey silt

MLG None
Gravelly, non-plastic to low plasticity silt

MLS None
Sandy, silt

MLSC 3
Sandy, Clayey, Silt

MLX None
Alternative silt symbol

MS None
Silt/sand interbeds

OH 0
High plasticity, organic silt

OL None
Low plasticity, organic silt

PEAT None
Peat or high plasticity organic silt or clay

RC None
Reinforced Concrete

SANDSTN2 None
Alternative sandstone

SANDSTON 30
Sandstone

SC None
Clayey sand

SEAMLIME 3
Seamy Limestone

SG None
Gravelly sand

SHALE None
Shale

SHALE2 21
Shale

SHELSAND None
Clean sand (poorly and well graded) w/ shells.

SILTSTON None
Siltstone symbol

SM None
Silty Sand

SM2 None
Silty sand

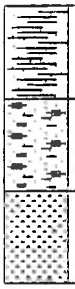
SM3 None
Silty sand

SMG None
Silty Sand with gravel

SP None
Clean sand

SS None
Alternative siltstone

SS&SH None
Interbedded sandstone & shale



SSS None
Alternative sandy siltstone

SW None
Clean sand, well graded

TOPSOIL 24
Topsoil

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS — MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS — MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS — MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS — LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

DEFINITION OF TERMS

	U.S. STANDARD SERIES SIEVE				CLEAR SQUARE SIEVE OPENINGS			
	200	40	10	4	3/4"	3"	12"	
SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	FINE	MEDIUM	COARSE	FINE	COARSE			

GRAIN SIZES

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

CLAYS AND PLASTIC SILTS	STRENGTH‡	BLOWS/FOOT†
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

UNIFIED SOIL CLASSIFICATION SYSTEM

PROJECT ▷ AMERICAN ELECTRONICS, INC	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ A901978A	
LOGGED BY ▷ PAUL ROBERTS		START DATE ▷ 23 December 1991	
CHECKED BY ▷ DAVID M. HENRY		COMPLETION DATE ▷ 23 December 1991	
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ DRILL-LINE	
DRILLING EQUIPMENT ▷ MOBILE DRILL B-53			
BORING DEPTH (FT) ▷ 20.0	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial:	Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A	TO N/A
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ HNU WITH 10.2 EV PROBE	
BACKFILL MATERIAL ▷ BENTONITE WITH CONCRETE CAP			

DEPTH (FT)	LITHOLOGY: DESCRIPTION	GRAPHIC	WELL	BLOW COUNT	OVM/OVA (PPM)	SAMPLE: RECOVERY %	SAMPLE: TYPE	SAMPLE: NUMBER	COMMENTS
0	ASPHALT								No odor/staining noted in cuttings or samples throughout boring
	Moderate yellowish-brown (10 YR 5/4), damp, stiff, Clayey SILT (ML)			13	7			SB4-1	
				26	7			SB4-2	
5	MOderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)			23	6			SB4-3	
	Moderate yellowish-brown (10 YR 5/4), damp, very stiff, Clayey SILT (ML)			21	9			SB4-4	
10				23	13			SB4-5	
	Moderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)			25	7			SB4-6	
15									
	Pale yellowish-brown (10 YR 6/2), damp, medium-dense, fine SAND (SP)			24	4			SB4-7	
20	Bottom of boring at 20 feet								

BORING DESIGNATION		PAGE NUMBER	FIGURE NUMBER
SB4	BORING LOG	1 OF 1	

PROJECT ▷ AMERICAN ELECTRONICS, INC.	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ A901978A	
LOGGED BY ▷ PAUL ROBERTS		START DATE ▷ 23 December 1991	
CHECKED BY ▷ DAVID M. HENRY		COMPLETION DATE ▷ 23 December 1991	
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ DRILL-LINE	
DRILLING EQUIPMENT ▷ MOBILE DRILL B-53			
BORING DEPTH (FT) ▷ 20.0	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial:	Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A TO N/A	
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ HNU WITH 10.2 EV PROBE	
BACKFILL MATERIAL ▷ BENTONITE WITH CONCRETE CAP			

DEPTH (FT)	LITHOLOGY: DESCRIPTION	GRAPHIC	WELL	BLOW COUNT	OVM/OVA (PPM)	SAMPLE: RECOVERY %	SAMPLE: TYPE	SAMPLE: NUMBER	COMMENTS
0	ASPHALT								No odor/staining noted in cuttings or samples throughout boring
	Moderate yellowish-brown (10 YR 5/4), damp, stiff, Clayey SILT (ML)			14	6			SB5-1	
				17	6			SB5-2	
5	Moderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)			20	13			SB5-3	
	Moderate yellowish-brown (10 YR 5/4), damp, very stiff, Clayey SILT (ML)			14	10			SB5-4	
10				25	12			SB5-5	
	Moderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)			28	8			SB5-6	
15									
	Becomes pale yellowish-brown (10 YR 6/2) at 18 feet			40	5			SB5-7	
20	Bottom of boring at 20 feet								

BORING DESIGNATION	BORING LOG	PAGE NUMBER	FIGURE NUMBER
SB5		1 OF 1	

PROJECT ▷ **AMERICAN ELECTRONICS, INC.**	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ **A901978A**	
LOGGED BY ▷ **PAUL ROBERTS**		START DATE ▷ **23 December 1991**	
CHECKED BY ▷ **DAVID M. HENRY**		COMPLETION DATE ▷ **23 December 1991**	
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ **DRILL-LINE**	
DRILLING EQUIPMENT ▷ **MOBILE DRILL B-53**			
BORING DEPTH (FT) ▷ **20.0**	WELL DEPTH (FT) ▷ **N/A**	WATER DEPTH (FT)-Initial:	Completion:
WELL MATERIALS ▷ **N/A**		WELL SCREEN INTERVAL (FT) ▷ **N/A** TO **N/A**	
WELL CASING ELEVATION (FT-MSL) ▷ **N/A**		OVM/OVA ▷ **HNU WITH 10.2 EV PROBE**	
BACKFILL MATERIAL ▷ **BENTONITE WITH CONCRETE CAP**			

DEPTH (FT)	LITHOLOGY DESCRIPTION	GRAPHIC	WELL	BLOW COUNT	OVM/OVA (PPM)	SAMPLE RECOVERY %	SAMPLE TYPE	SAMPLE NUMBER	COMMENTS
0	ASPHALT								No odor/staining noted in cuttings or samples throughout boring
	Moderate yellowish-brown (10 YR 5/4), damp, stiff, Clayey SILT (ML)			11	70			SB6-1	
				22	13			SB6-2	
5	Moderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)								
	Moderate yellowish-brown (10 YR 5/4), damp, very stiff, Clayey SILT (ML)			25	20			SB6-3	
				28	20			SB6-4	
10									
	Moderate yellowish-brown (10 YR 5/4), damp, dense, Silty fine SAND (SM)			28	20			SB6-5	
				28	11			SB6-6	
15									
	Pale yellowish-brown (10 YR 6/2), damp, dense, fine SAND (SP)			63	3			SB6-7	
20	Bottom of boring at 20 feet								

BORING DESIGNATION		PAGE NUMBER	FIGURE NUMBER
SB6	**BORING LOG**	**1 OF 1**	

PROJECT ▷ AMERICAN ELECTRONICS, INC.	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ A901978A	
LOGGED BY ▷ PAUL ROBERTS		START DATE ▷ 23 December 1991	
CHECKED BY ▷ DAVID M. HENRY		COMPLETION DATE ▷ 23 December 1991	
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ DRILL-LINE	
DRILLING EQUIPMENT ▷ MOBILE DRILL B-53			
BORING DEPTH (FT) ▷ 20.0	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial:	Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A TO N/A	
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ HNU WITH 10.2 EV PROBE	
BACKFILL MATERIAL ▷ BENTONITE WITH CONCRETE CAP			

DEPTH (FT)	LITHOLOGY DESCRIPTION	GRAPHIC	WELL	BLOW COUNT	OVM/OVA (PPM)	SAMPLE RECOVERY %	SAMPLE TYPE	SAMPLE NUMBER	COMMENTS
0	CONCRETE			10	12			SB7-1	No odor/staining noted in cuttings or samples throughout boring
	Moderate yellowish-brown (10 YR 5/4), damp, stiff, Clayey SILT (ML)			18	7			SB7-2	
5	Moderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)			16	13			SB7-3	
	Moderate yellowish-brown (10 YR 5/4), damp, very stiff, Clayey SILT (ML)			33	13			SB7-4	
10				17	20			SB7-5	
	Moderate yellowish-brown (10 YR 5/4), damp, medium-dense, Silty fine SAND (SM)			28	12			SB7-6	
15									
	Pale yellowish-orange (10 YR 6/2), damp, dense, fine to medium SAND (SW)			35	10			SB7-7	
20	Bottom of boring at 20 feet								

BORING DESIGNATION	BORING LOG	PAGE NUMBER	FIGURE NUMBER
SB7		1 OF 1	

APPENDIX D

NORRIS-REPKE, INC. REPORT

DUPLICATE
RECEIVED
DEC 23 1991

NORRIS-REPKE, INC.
Consulting Civil Engineers and Land Surveyors
18231 IRVINE BLVD. • SUITE 204 • TUSTIN, CA 92680 • (714) 730-6410 FAX: (714) 730-6336

December 19, 1991

NRI 38-27

Jack P. Norris, PE
Warren W. Repke, PE
Joseph M. Loyatho, PLS

Applied Geoscience
17321 Irvine Blvd.
Tustin, California 92680

Attn: Paul Roberts

Project: American Electronics
1600 E. Valencia Drive - Fullerton

Subject: ELEVATIONS FOR MONITORING WELLS

WELL NO.	ELEVATION CASING	RIM
BP 1	178.14	178.42
BP 2	183.13	183.48
BP 3	180.61	181.09
BP 4	179.89	180.59
BP 5	177.69	178.16
BP 6	177.31	177.74

ORANGE COUNTY SURVEYOR VERTICAL CONTROL
BENCH MARK REFERENCE - 404-12-68 ELEVATION 187.45

1.5 MILES EAST ALONG THE ATCHISON, TOPEKA AND SANTA FE RAILWAY FROM THE RAILWAY STATION AT FULLERTON TO THE CROSSING AT ACACIA AVENUE, 38.7 FEET WEST OF THE CENTER LINE OF ACACIA, 90.4 FEET NORTH OF THE CENTER LINE OF VALENCIA DRIVE, 15.4 FEET NORTH OF THE NORTH RAIL OF THE NORTH TRACK, SET IN THE TOP OF THE SOUTH END OF A CONCRETE HEADWALL, 0.5 OF A FOOT HIGHER THAN THE RAIL.

Joseph Loyatho

APPENDIX E

LABORATORY ANALYTICAL REPORTS

DUPLICATE

WEST COAST ANALYTICAL SERVICE, INC.

RECEIVED
JAN 0 2 1992
APPLIED GEOSCIENCES INC.

December 31, 1991

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
Tustin, CA 92680

Attn: Paul Roberts

JOB NO. 20307 S

LABORATORY REPORT

Samples Received: Twenty-four (24) Soil Samples
Date Received: 12-23-91
Purchase Order No: Proj#:A901978A/AEI

The samples were analyzed as follows:

Samples Analyzed	Analysis	Results
Eighteen (18) soils	Halogenated and Aromatic Volatile Organics by EPA 8021	Data Sheets

Enclosures: Chromatograms

Michael Shelton
Technical Director

D. J. Northington, Ph.D.
President

This report is to be reproduced in its entirety.

9840 Alburtis Avenue • Santa Fe Springs, California 90670 • 310/948-2225 • FAX 310/948-5850

Client: APPLIED GEOSCIENCES Sample: SB4-1-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/26/91 Sample amount: 1.0 g
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	132 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	60	2
108-88-3	Toluene	52 B	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	39	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	3	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	91	60-150
Hall detector	106	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB4-2-2
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	22 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	29	2
108-88-3	Toluene	16	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	18	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	2 B	2

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	95	60-150
Hall detector	101	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB4-4-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	20 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	70	2
108-88-3	Toluene	31	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	44	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	ND	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	96	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB4-7-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	5 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
108-88-3	Toluene	3	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	ND	2

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	96	60-150
Hall detector	90	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB5-1-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/28/91 Sample amount: 1.0 g
Date Analyzed: 12/28/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	7 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	59	2
108-88-3	Toluene	36	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	18	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	ND	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	96	60-150
Hall detector	113	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB5-3-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/26/91 Sample amount: 1.0 g
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	2	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	121 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	440	2
108-88-3	Toluene	46	1
71-55-6	1,1,1-Trichloroethane	4 B	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	243	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	4	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	96	60-150
Hall detector	121	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB5-4-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/26/91 Sample amount: 1.0 g
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	2	2
75-09-2	Methylene chloride	86 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	333	2
108-88-3	Toluene	66 B	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	120	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	5	2

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	90	60-150
Hall detector	111	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB5-7-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/26/91 Sample amount: 1.0 g
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	40 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	29	2
108-88-3	Toluene	46 B	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	14	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	2	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	90	60-150
Hall detector	101	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB6-1-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	2	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	14 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	1700	2
108-88-3	Toluene	4 B	1
71-55-6	1,1,1-Trichloroethane	4	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	225	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	3 B	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	74	60-150
Hall detector	91	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB6-1-1 DUP
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	1	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	3	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	3	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	28 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	1800	2
108-88-3	Toluene	6 B	1
71-55-6	1,1,1-Trichloroethane	6	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	272	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	3 B	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	94	60-150
Hall detector	124	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB6-4-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	1	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	3	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	2	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	35 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	1200	2
108-88-3	Toluene	8 B	1
71-55-6	1,1,1-Trichloroethane	6	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	234	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	3 B	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	86	60-150
Hall detector	112	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB6-6-2
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	17 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	28	2
108-88-3	Toluene	16 B	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	7	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	3 B	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	94	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB6-7-2
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	12 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
108-88-3	Toluene	3	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	4 B	2

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	103	60-150
Hall detector	98	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB7-1-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91
Date Extracted: 12/27/91
Date Analyzed: 12/27/91
Instrument ID: GC #5

Matrix: Soil
Sample amount: 1.0 g

Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	14 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	152	2
108-88-3	Toluene	86 B	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	70	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	3 B	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	79	60-150
Hall detector	90	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB7-4-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	2 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	3	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	2	2
75-09-2	Methylene chloride	15 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	380	2
108-88-3	Toluene	17 B	1
71-55-6	1,1,1-Trichloroethane	6	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	287	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	7 B	2

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	83	60-150
Hall detector	97	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB7-6-2
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	2 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	35 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	9	2
108-88-3	Toluene	15 B	1
71-55-6	1,1,1-Trichloroethane	2	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	10	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	5 B	2

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	98	60-150
Hall detector	106	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB7-6-2 DUP
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	2 B	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	2	2
75-09-2	Methylene chloride	18 B	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	9	2
108-88-3	Toluene	15 B	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	9	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	7 B	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	93	60-150
Hall detector	99	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: SB7-7-1
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/23/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	2	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	2	2
75-09-2	Methylene chloride	22	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
108-88-3	Toluene	8	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	7	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	100	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: LAB BLANK
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/26/91 Matrix: Soil
Date Extracted: 12/26/91 Sample amount: 1.0 g
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	2	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
108-88-3	Toluene	2.5	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	ND	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	100	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: LAB BLANK
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/27/91 Matrix: Soil
Date Extracted: 12/27/91 Sample amount: 1.0 g
Date Analyzed: 12/27/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	1	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	3	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
108-88-3	Toluene	3	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	2	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	100	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: LAB BLANK
WCAS Job #: 20307

Halogenated and Aromatic Volatile Organics by EPA 8021

Date Received: 12/28/91 Matrix: Soil
Date Extracted: 12/28/91 Sample amount: 1.0 g
Date Analyzed: 12/28/91
Instrument ID: GC #5 Units: ug/kg (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	1
75-27-4	Bromodichloromethane	ND	2
75-25-2	Bromoform	ND	3
74-83-9	Bromomethane	ND	5
56-23-5	Carbon tetrachloride	ND	2
108-90-7	Chlorobenzene	ND	1
75-00-3	Chloroethane	ND	5
110-75-8	2-Chloroethyl vinyl ether	ND	4
67-66-3	Chloroform	ND	2
74-87-3	Chloromethane	ND	5
124-48-1	Dibromochloromethane	ND	2
95-50-1	1,2-Dichlorobenzene	ND	1
541-73-1	1,3-Dichlorobenzene	ND	1
106-46-7	1,4-Dichlorobenzene	ND	1
75-34-3	1,1-Dichloroethane	ND	2
107-06-2	1,2-Dichloroethane	ND	2
75-35-4	1,1-Dichloroethylene	ND	3
156-60-5	trans-1,2-Dichloroethylene	ND	2
78-87-5	1,2-Dichloropropane	ND	2
10061-01-5	cis-1,3-Dichloropropene	ND	2
10061-02-6	trans-1,3-Dichloropropene	ND	2
100-41-4	Ethylbenzene	ND	2
75-09-2	Methylene chloride	2 /	2
79-34-5	1,1,2,2-Tetrachloroethane	ND	2
127-18-4	Tetrachloroethylene	ND	2
108-88-3	Toluene	ND	1
71-55-6	1,1,1-Trichloroethane	ND	2
79-00-5	1,1,2-Trichloroethane	ND	2
79-01-6	Trichloroethylene	ND	2
75-69-4	Trichlorofluoromethane	ND	2
75-01-4	Vinyl chloride	ND	3
95-47-6	Total Xylenes	ND	2

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	100	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Halogenated and Aromatic Volatile Organics

Matrix Spike/Matrix Spike Duplicate Recovery Summary

Client: APPLIED GEOSCIENCES QC Batch #: 12/27/91
Job no.: 20307
Date Analyzed: 12/27/91 Matrix: Soil
Units: ppb Date Extracted: 12/27/91

Analyte	Sample Result	Amount Spiked	MS Result	% Rec MS	MSD Result	% Rec MSD	RPD
Benzene	2	250	214	85	209	83	-2
Chlorobenze	ND	250	224	90	219	88	-2
1,1-DCE	ND	250	192	77	160	64	-18
Toluene	8	250	234	90	229	88	-2
TCE	ND	250	221	88	222	89	0

** - Result is outside warning limits
*** - Result is outside control limits

QC Limits

Analyte	RPD Warning	RPD Control	% Recovery Warning		% Recovery Control	
Benzene	21	31	60	152	36	175
Chlorobenzene	16	25	66	127	52	140
1,1-Dichloroethene	24	36	41	141	16	166
Toluene	16	25	58	136	39	152
Trichloroethylene	22	34	64	123	50	138

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APPLIED GEOSCIENCES INC.

WCAS
WEST COAST ANALYTICAL SERVICE, INC.

December 30, 1991

APPLIED GEOSCIENCES, INC.
17321 Irvine Blvd.
Tustin, CA 92680

Attn: Michelle Corwin

JOB NO. 20301 S

LABORATORY REPORT

Samples Received: Seventeen (17) Water Samples
Date Received: 12-20-91
Purchase Order No: Proj#:A901978A/American Electronic

The samples were analyzed as follows:

Samples Analyzed	Analysis	Results
Five (5) waters	Turbidity by EPA 180.1	Table 1
Six (6) waters	Halogenated and Aromatic Volatile Organics by EPA 601/602	Data Sheets

Enclosures: Chromatograms

Michael Shelton
Technical Director

D. J. Northington, Ph.D.
President

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WEST COAST ANALYTICAL SERVICE, INC.

APPLIED GEOSCIENCES
Ms. Michelle Corwin

Job #20301
December 30, 1991

LABORATORY REPORT

Table 1

Nephelometric Turbidity Units (NTU)

Sample No.	Turbidity by EPA Method 180.1
BP2-2	15
BP3-2	7
BP4-2	10
BP5-2	18
BP6-2	7
Detection Limit	0.02

Date Analyzed: 12-30-91

Matrix Spike/Matrix Spike Duplicate Recovery Summary

Client: APPLIED GEOSCIENCES, INC.
Job no.: 20301 Matrix: WATER
Date Analyzed: 12/30/91 Units: NTU
Method: EPA 180.1

Analyte	Sample Result	Amount Spiked	MS Result	% Rec MS	MSD Result	% Rec MSD	RPD
TURBIDITY	0.55	40	41	101	39	96	5

Client: APPLIED GEOSCIENCES INC. Sample: BP2-1
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/20/91 Matrix: Water
Date Extracted: 12/23/91 Sample amount: 5 mL
Date Analyzed: 12/23/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	ND	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	1.2	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	1.4 B	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	29	0.3
108-88-3	Toluene	0.6	0.2
71-55-6	1,1,1-Trichloroethane	0.6	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	19	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	0.6	0.4

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	103	60-150
Hall detector	113	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES INC. Sample: BP3-1
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/20/91 Matrix: Water
Date Extracted: 12/23/91 Sample amount: 5 mL
Date Analyzed: 12/23/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	0.2	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	ND	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	1.2	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	1.6 B	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	26	0.3
108-88-3	Toluene	0.6	0.2
71-55-6	1,1,1-Trichloroethane	0.6	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	31	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	0.6	0.4

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	98	60-150
Hall detector	104	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: BP4-1
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/20/91 Matrix: Water
Date Extracted: 12/26/91 Sample amount: 5 mL
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	0.2	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	0.6	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	1.2	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	17 B	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	4.2	0.3
108-88-3	Toluene	1.4 B	0.2
71-55-6	1,1,1-Trichloroethane	0.6	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	15	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	0.4	0.4

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	110	60-150
Hall detector	119	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES INC. Sample: BP5-1
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/20/91 Matrix: Water
Date Extracted: 12/23/91 Sample amount: 5 mL
Date Analyzed: 12/23/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	0.6	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	5.4	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	3.6	0.4
107-06-2	1,2-Dichloroethane	3.6	0.4
75-35-4	1,1-Dichloroethylene	ND	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	11 B	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	170	3.0
108-88-3	Toluene	1.2	0.2
71-55-6	1,1,1-Trichloroethane	7.8	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	260	3.0
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	0.6	0.4

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	101	60-150
Hall detector	134	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES INC. Sample: BP6-1
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/20/91 Matrix: Water
Date Extracted: 12/24/91 Sample amount: 5 mL
Date Analyzed: 12/24/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	0.4	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	ND	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	ND	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	25 B	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	11	0.3
108-88-3	Toluene	0.4	0.2
71-55-6	1,1,1-Trichloroethane	0.4	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	17	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	0.6	0.4

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	115	60-150
Hall detector	118	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES INC. Sample: BPT-1
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/20/91 Matrix: Water
Date Extracted: 12/24/91 Sample amount: 5 mL
Date Analyzed: 12/24/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	0.2	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	ND	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	ND	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	14 B	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	ND	0.3
108-88-3	Toluene	ND	0.2
71-55-6	1,1,1-Trichloroethane	ND	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	ND	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	ND	0.4

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	96	60-150
Hall detector	101	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES INC. Sample: LAB BLANK
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/23/91 Matrix: Water
Date Extracted: 12/23/91 Sample amount: 5 mL
Date Analyzed: 12/23/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	ND	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	ND	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	1.6	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	ND	0.3
108-88-3	Toluene	ND	0.2
71-55-6	1,1,1-Trichloroethane	ND	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	ND	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	ND	0.4

ND - Not detected

Surrogate Bromofluorobenzene	Percent Recovery	Control Limits
Photoionization detector	100	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Client: APPLIED GEOSCIENCES Sample: LAB BLANK
WCAS Job #: 20301

Halogenated and Aromatic Volatile Organics by EPA 601/602

Date Received: 12/26/91 Matrix: Water
Date Extracted: 12/26/91 Sample amount: 5 mL
Date Analyzed: 12/26/91
Instrument ID: GC #5 Units: ug/L (ppb)

CAS no.	Compound	Concentration	Detection Limit
71-43-2	Benzene	ND	0.2
75-27-4	Bromodichloromethane	ND	0.3
75-25-2	Bromoform	ND	0.5
74-83-9	Bromomethane	ND	1
56-23-5	Carbon tetrachloride	ND	0.3
108-90-7	Chlorobenzene	ND	0.2
75-00-3	Chloroethane	ND	1
110-75-8	2-Chloroethyl vinyl ether	ND	0.8
67-66-3	Chloroform	ND	0.3
74-87-3	Chloromethane	ND	1
124-48-1	Dibromochloromethane	ND	0.3
95-50-1	1,2-Dichlorobenzene	ND	0.2
541-73-1	1,3-Dichlorobenzene	ND	0.2
106-46-7	1,4-Dichlorobenzene	ND	0.2
75-34-3	1,1-Dichloroethane	ND	0.4
107-06-2	1,2-Dichloroethane	ND	0.4
75-35-4	1,1-Dichloroethylene	ND	0.6
156-60-5	trans-1,2-Dichloroethylene	ND	0.3
78-87-5	1,2-Dichloropropane	ND	0.3
10061-01-5	cis-1,3-Dichloropropene	ND	0.3
10061-02-6	trans-1,3-Dichloropropene	ND	0.3
100-41-4	Ethylbenzene	ND	0.3
75-09-2	Methylene chloride	0.4	0.3
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.3
127-18-4	Tetrachloroethylene	ND	0.3
108-88-3	Toluene	0.5	0.2
71-55-6	1,1,1-Trichloroethane	ND	0.3
79-00-5	1,1,2-Trichloroethane	ND	0.3
79-01-6	Trichloroethylene	ND	0.3
75-69-4	Trichlorofluoromethane	ND	0.4
75-01-4	Vinyl chloride	ND	0.6
95-47-6	Total Xylenes	ND	0.4

ND - Not detected

Surrogate	Percent Recovery	Control Limits
Bromofluorobenzene		
Photoionization detector	100	60-150
Hall detector	100	60-150

** - Recovery outside QC limits

Halogenated and Aromatic Volatile Organics

Matrix Spike/Matrix Spike Duplicate Recovery Summary

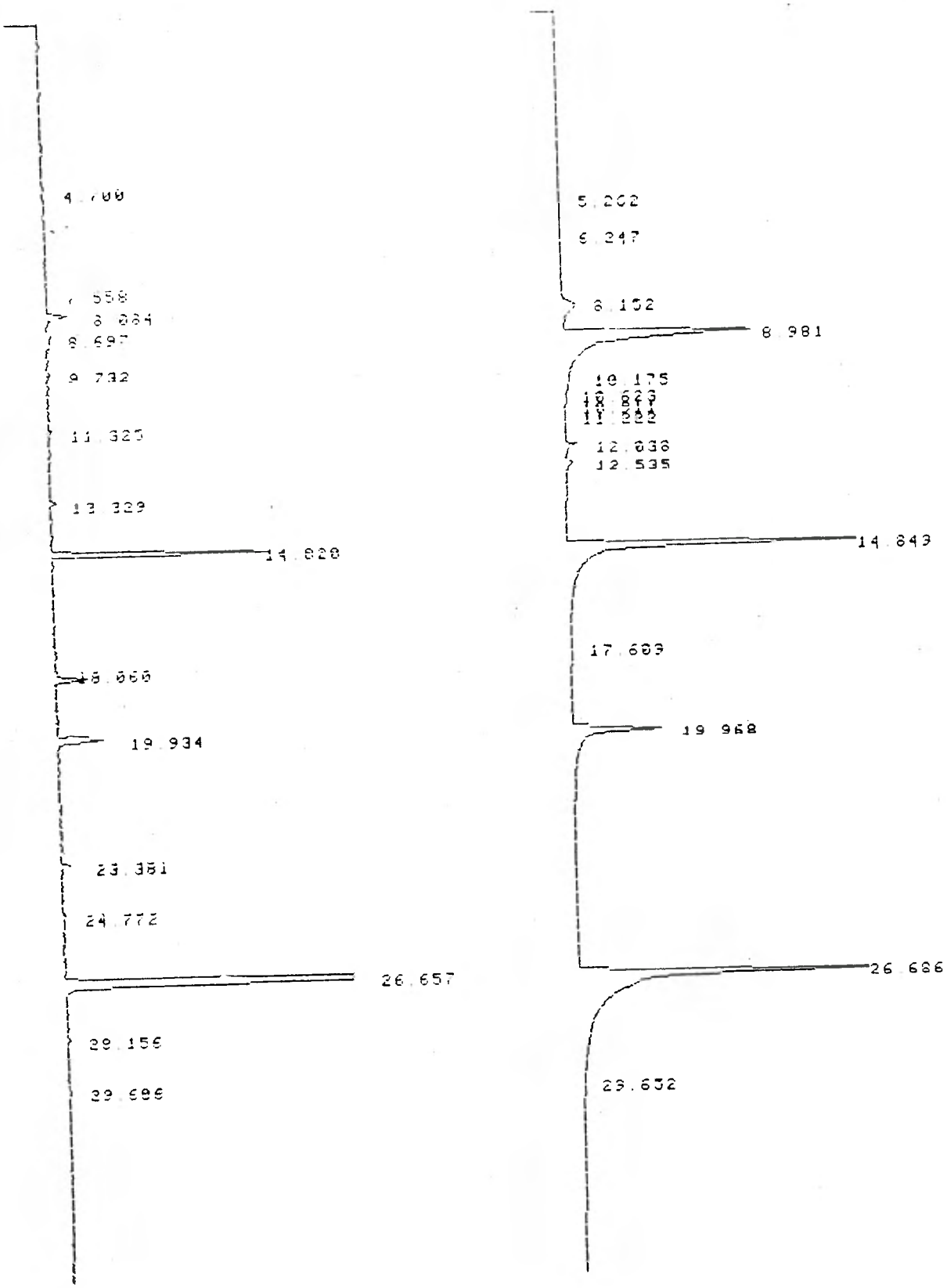
Client: APPLIED GEOSCIENCES QC Batch #: 12/24/91
Job no.: 20301
Date Analyzed: 12/24/91 Matrix: Water
Units: ppb Date Extracted: 12/24/91

Analyte	Sample Result	Amount Spiked	MS Result	% Rec MS	MSD Result	% Rec MSD	RPD
Benzene	0.2	50	38	76	38	76	0
Chlorobenze	ND	50	44.6	89	44	88	-1
1,1-DCE	ND	50	26.4	53	22.6	45	-16
Toluene	ND	50	43.8	88	42.4	85	-3
TCE	ND	50	41.4	83	40.6	81	-2

** - Result is outside warning limits
*** - Result is outside control limits

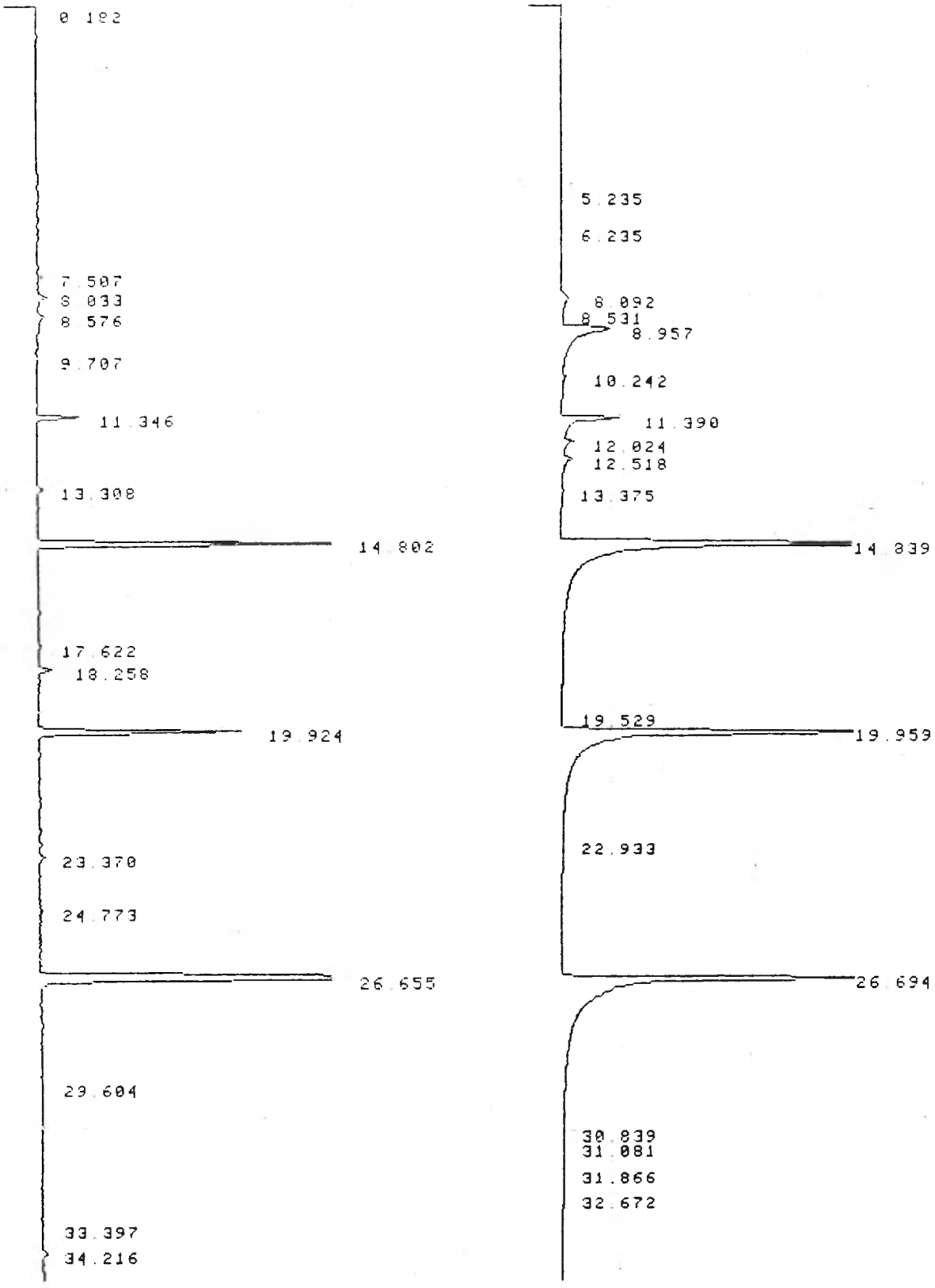
QC Limits

Analyte	RPD Warning	RPD Control	% Recovery Warning		% Recovery Control	
Benzene	26	39	60	153	36	175
Chlorobenzene	12	18	80	125	69	136
1,1-Dichloroethene	37	55	42	140	18	163
Toluene	12	18	55	139	35	159
Trichloroethylene	15	22	70	126	55	140



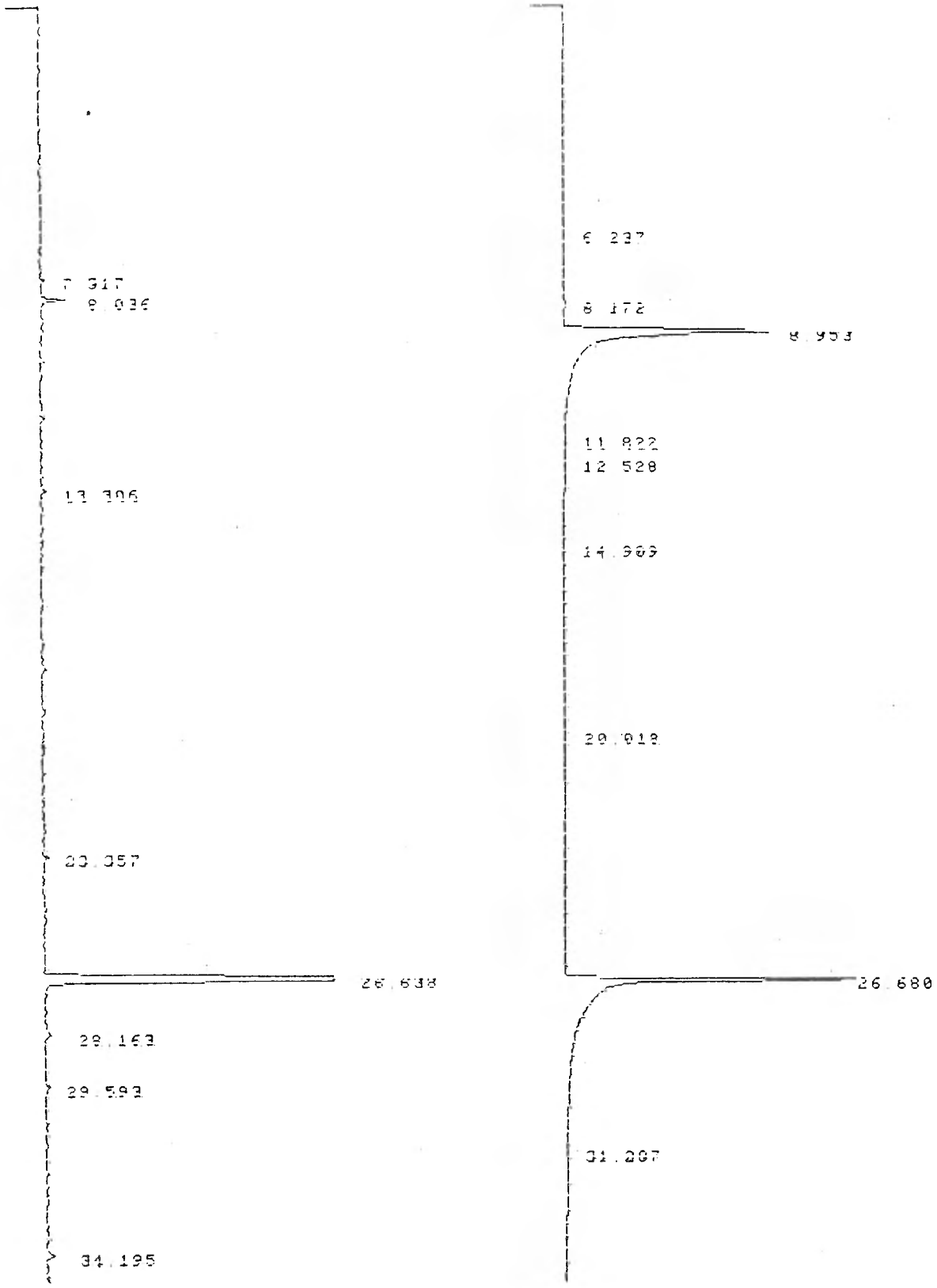
CHANNEL: 4A - 1 TITLE: VOLATILE AROMATICS 13:53 26 DEC 91

SAMPLE: 20301 BP4-1 METHOD: 602 CALCULATION: ES - ANALYS - SO



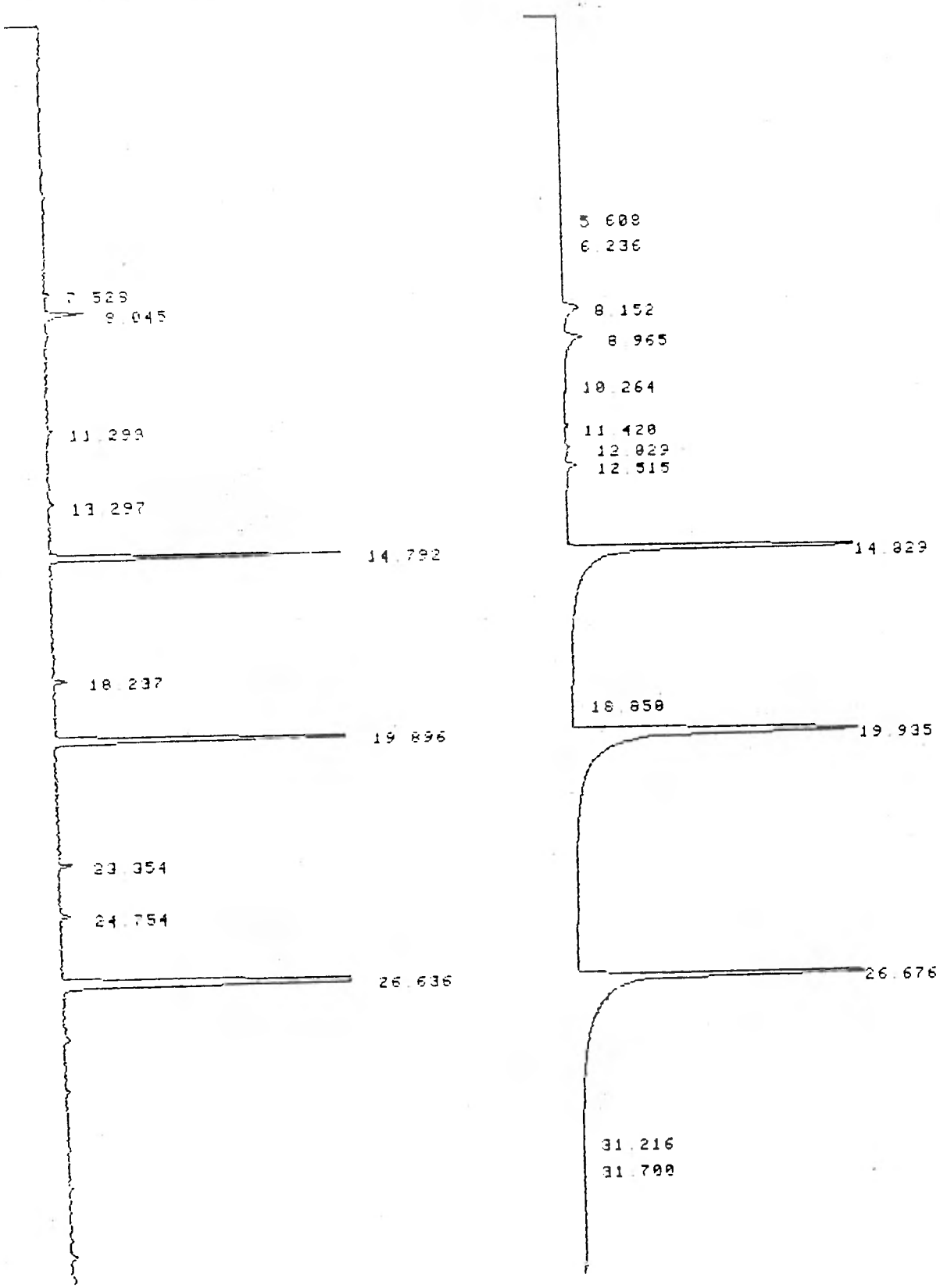
CHANNEL: 4A - 1 TITLE: VOLATILE AROMATICS 14:44 26 DEC 91

SAMPLE: 20301 PBE 1 METHOD: 502 CALCULATION: ES - ANALYS - 50



CHANNEL: 4A - 1 TITLE: VOLATILE AROMATICS 1:03 24 DEC 91

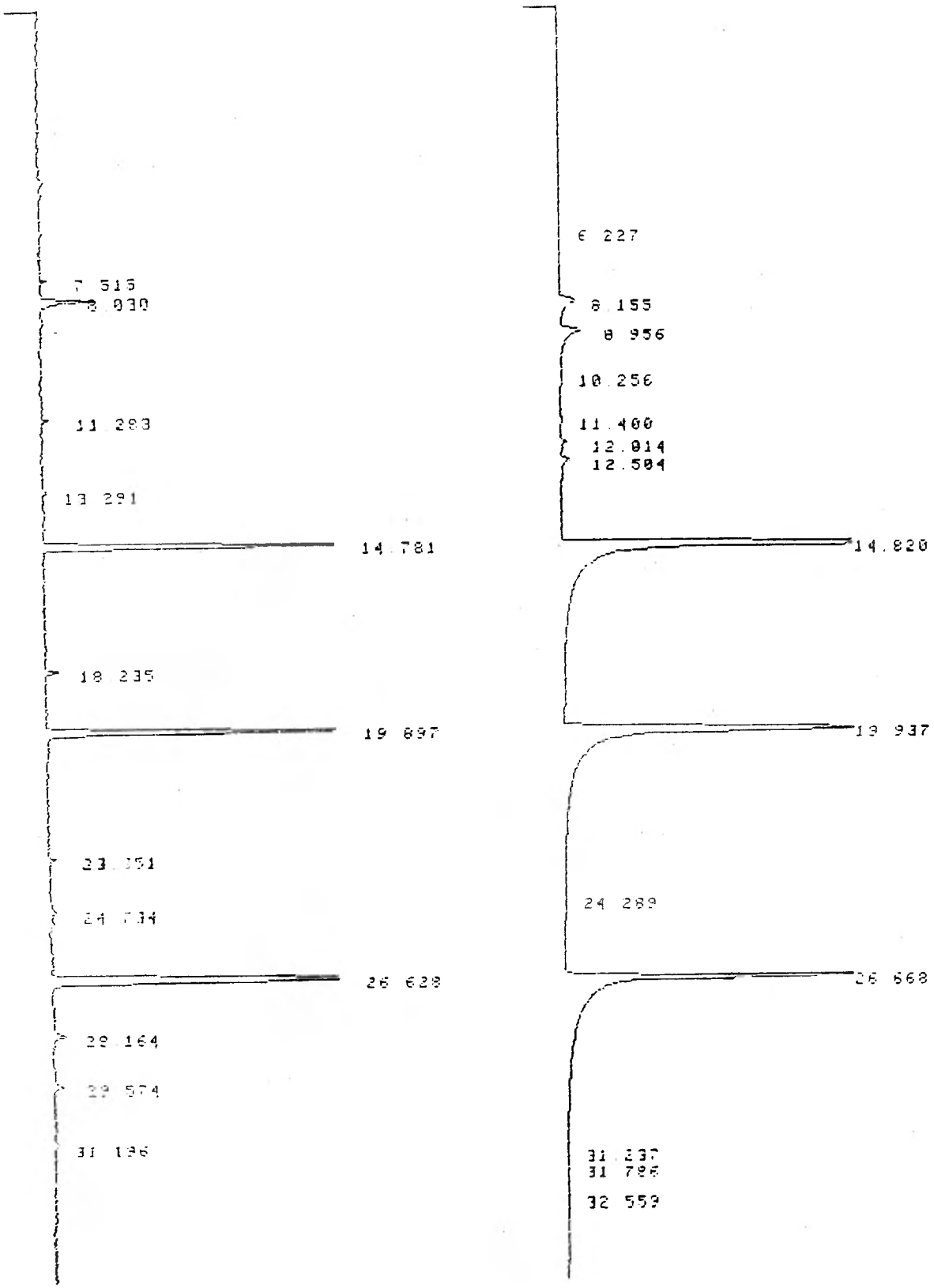
SAMPLE: 20301 BPT-1 METHOD: 602 CALCULATION: ES - ANALYS - 30



CHANNEL: 4A - 1 TITLE: VOLATILE AROMATICS 20:31 23 DEC 91

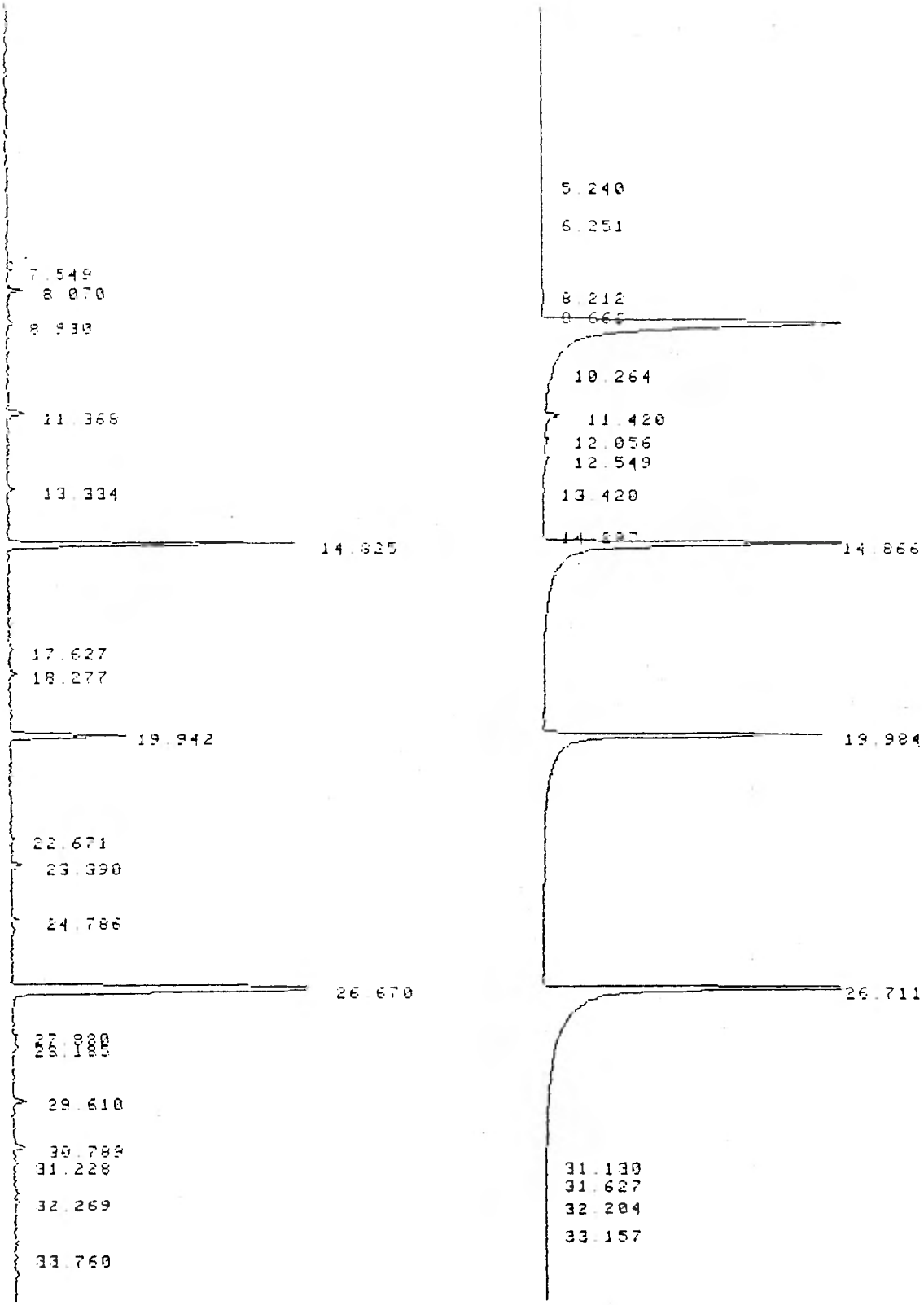
SAMPLE: 20301 BP2-1 METHOD: 602 CALCULATION: ES - ANALYS - SO

ATTEN: 16 ZERO: 3%



CHANNEL: 4A - 1 TITLE: VOLATILE AROMATICS 21:25 23 DEC 91

SAMPLE: 20301 BP3-1 METHOD: 602 CALCULATION: ES - ANALYS - SO



CHANNEL: 4A - 1 TITLE: VOLATILE AROMATICS 0:08 24 DEC 91

SAMPLE: 20301 BP6-1 METHOD: 602 CALCULATION: ES - ANALYS - SO

APPLIED GEOSCIENCES INC.

SHIPMENT NO. _____

CHAIN OF CUSTODY RECORD

PAGE ____ OF ____

PROJECT NAME: [illegible]

DATE [illegible]

PROJECT NO. [illegible]

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required*
BP2-1	BP2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	GC1/GC2
-2							18C1 [illegible]
-3							[illegible]
BP3-1	BP3						GC1/GC2
-2							18C1 [illegible]
-3							[illegible]
BP4-1	BP4						GC1/GC2
-2							18C1 (Turbid)
-3							HCl
BP5-1	BP5						GC1/GC2
-2							18C1 (Turbid)
-3							HCl
BPC-1	BPC						GC1/GC2
-2							18C1 (Turbid)
-3							HCl
BPT-1	BPT						GC1/GC2
-2							HCl

Total Number of Samples Shipped: 17 | Sampler's Signature: [illegible]

Relinquished By:	Received By:	Date / Time
Signature: [illegible]	Signature: De Northington	Date: 12/20/91
Printed Name: Wade R Corksey	Printed Name: De Northington	Time: 5:40 pm
Company: Applied Geosciences, Inc	Company: WCAS	
Reason: Analysis		

20301

Relinquished By:	Received By:	Date / Time
Signature:	Signature:	Date: / /
Printed Name:	Printed Name:	Time:
Company:	Company:	
Reason:		

Relinquished By:	Received By:	Date / Time
Signature:	Signature:	Date: / /
Printed Name:	Printed Name:	Time:
Company:	Company:	
Reason:		

Relinquished By:	Received By:	Date / Time
Signature:	Signature:	Date: / /
Printed Name:	Printed Name:	Time:
Company:	Company:	
Reason:		

Special Shipment / Handling / Storage Requirements:

Please mail all Data to ATT [illegible] Thank you.

* Note – This does not constitute authorization to proceed with analysis

STATE OF CALIFORNIA

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
2010 IOWA AVENUE, SUITE 100
RIVERSIDE, CA 92507-2409
PHONE: (714) 782-4130

FAX
4:34 1229
RECEIVED

TELECOPY TRANSMITTAL MEMO

DATE: January 22, 1992

TO: MICHELLE CORWIN - APPLIED GEOSCIENCE

FROM: DENNIS MERKLIN

SECTION: GROUNDWATER INVESTIGATION

TELECOPIER NUMBER: (714) 838-1401

SUBJECT: SARWQCB SPLIT SAMPLE ANALYTICAL RESULTS OF SOIL BORINGS AT AMERICAN ELECTRONICS SITE

NUMBER OF PAGES, INCLUDING TRANSMITTAL MEMO: 7

COMMENTS: As promised, here are our results of the soil boring intervals the Board had analyzed from the 12/23/91 soil sampling at American Electronics, for use in your report on the Investigation. There were no QA/QC sheets sent with these reports, but I'm sure that associated labs has them. Hope these helps. (at one hour when the Report is almost ready to be sent to us.

If there are any problems receiving this telecopy, or if all pages are not received, please contact the sender at (714) 782-4130.

ASSOCIATED LABORATORIES
806 North Batavia · Orange, California 92668 · 714/771-6900 FAX 714/538-1209

CLIENT
California Regional Water Quality Control Board
Attn: Nancy Martin
2010 Iowa Ave. - Suite 100
Riverside, CA 92507

(1079) LAB NO G22139-01
REPORTED 01/03/92
RECEIVED 12/27/91

SAMPLE Soil - D.M.
American Electronics
IDENTIFICATION SB4-5-1
Date Collected 12/23/91 @ 1020 Hrs.
BASED ON SAMPLE As Submitted

PURGEABLE ORGANICS

Constituent	Method	Results
Trichloroethene	EPA 8010	0.04 mg/kg
Tetrachloroethene	EPA 8010	1.49 mg/kg

All Other Compounds Were None Detected. See Attached List.

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/jac

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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ASSOCIATED LABORATORIES
806 North Batavia · Orange, California 92668 · 714/771-6900
FAX 714/538-1209

CLIENT
California Regional Water (1079)
Quality Control Board
Attn: Nancy Martin
2010 Iowa Ave. - Suite 100
Riverside, CA 92507

LAB NO G22139-02
REPORTED 01/03/92

SAMPLE Soil - K.S.
American Electronics
IDENTIFICATION SB5-5-1
Date Collected 12/23/91 @ 1145 Hrs.
BASED ON SAMPLE As Submitted

RECEIVED 12/27/91

PURGEABLE ORGANICS

Constituent	Method	Results
Trichloroethene	EPA 8010	0.04 mg/kg
Tetrachloroethene	EPA 8010	0.87 mg/kg

All Other Compounds Were None Detected. See Attached List.

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/jac

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ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900
FAX 714/538-1209

CLIENT
California Regional Water (1079)
Quality Control Board
Attn: Nancy Martin
2010 Iowa Ave. - Suite 100
Riverside, CA 92507

LAB NO G22139-03
REPORTED 01/03/92

SAMPLE Soil - K.S.
American Electronics, Inc.
IDENTIFICATION SB6-3-1
Date Collected 12/23/91 @ 0835 Hrs.
BASED ON SAMPLE As Submitted

RECEIVED 12/24/91

PURGEABLE ORGANICS

Constituent	Method	Results
Trichloroethene	EPA 8010	0.15 mg/kg
Tetrachloroethene	EPA 8010	3.5 mg/kg

All Other Compounds Were None Detected. See Attached List.

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/jac

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
Chemical •
Microbiological •
Environmental •

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ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900 FAX 714/538-1209

CLIENT
California Regional Water (1079)
Quality Control Board
Attn: Nancy Martin
2010 Iowa Ave. - Suite 100
Riverside, CA 92507

LAB NO G22139-04
REPORTED 01/03/92

SAMPLE Soil - K.S.
American Electronics, Inc.
IDENTIFICATION SB7-3-1
Date Collected 12/23/91 @ 1250 Hrs.
BASED ON SAMPLE As Submitted

RECEIVED 12/24/91

PURGEABLE ORGANICS

Constituent	Method	Results
Trichloroethene	EPA 8010	0.35 mg/kg
Tetrachloroethene	EPA 8010	0.71 mg/kg

All Other Compounds Were None Detected. See Attached List.

ASSOCIATED LABORATORIES, by:

Robert A. Webber
Vice President

RAW/jac

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

TESTING & CONSULTING
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Client : California Regional Water
Quality Control Board
Lab No.: G22139

HALOGENATED ORGANICS - EPA METHOD 8010	(mg/kg)
Chloromethane	ND<0.01
Bromomethane	ND<0.01
Dichlorodifluoromethane	ND<0.01
Vinyl chloride	ND<0.01
Chloroethane	ND<0.01
Methylene chloride	ND<0.01
Trichlorofluoromethane	ND<0.01
1,1-Dichloroethene	ND<0.01
1,1-Dichloroethane	ND<0.01
trans-1,2-Dichloroethene	ND<0.01
Chloroform	ND<0.01
1,2-Dichloroethane	ND<0.01
1,1,1-Trichloroethane	ND<0.01
Carbon tetrachloride	ND<0.01
Bromodichloromethane	ND<0.01
1,2-Dichloropropane	ND<0.01
trans-1,3-Dichloropropene	ND<0.01
Trichloroethene	ND<0.01
Dibromochloromethane	ND<0.01
1,1,2-Trichloroethane	ND<0.01
cis-1,3-Dichloropropene	ND<0.01
2-Chloroethylvinyl ether	ND<0.01
Bromoform	ND<0.01
1,1,2,2-Tetrachloroethane	ND<0.01
Tetrachloroethene	ND<0.01
Chlorobenzene	ND<0.01
1,3-Dichlorobenzene	ND<0.01
1,2-Dichlorobenzene	ND<0.01
1,4-Dichlorobenzene	ND<0.01

OF CALIFORNIA

FORNIA REGIONAL WATER QUALITY CONTROL BOARD
TA ANA REGION
~~INDIANA AVENUE, SUITE 200~~ 2010 IOWA AVE STE NO
SIDE, CALIFORNIA 92507
E: (714) 782-4130

CHAIN OF CUSTODY RECORD

Date 12/26/91 Page 1 of 1

BORATORY: ASSOCIATED LABS.
CTION: GROUNDWATER INVESTIGATION
OJECT NAME: AMERICAN ELECTRONICS, INC.

PROJECT MANAGER: DENNIS MERKLIN
PHONE NUMBER: (714) 782-4434
SAMPLERS: (Signature) Wm. Dennis Merklin (of Applied Geoscience Inc)

SAMPLE NUMBER	LOCATION DESCRIPTION	DATE	TIME	SAMPLE TYPE: WATER Comp.	WATER Grab	AIR	SOLID	NO. OF CNTNRS	TESTS REQUIRED
4-5-1	SOIL BORING NO. 4 @ the 5th (12.5') DEPTH INTERVAL	12/23/91	10:20 AM				X	1	EPA 8010 PURGEABLE HALOCARBONS
5-5-1	SOIL BORING NO. 5 @ the 5th (12.5') DEPTH INTERVAL	12/23/91	11:45 AM				X	1	EPA 8010 PURGEABLE HALOCARBONS
6-3-1	SOIL BORING NO. 6 @ the 3rd (7.5') DEPTH INTERVAL	12/23/91	8:35 AM				X	1	EPA 8010 PURGABLE HALOCARBONS
7-3-1	SOIL BORING NO. 7 @ the 3rd (7.5') DEPTH INTERVAL	12/23/91	12:50 PM				X	1	EPA 8010 PURGABLE HALOCARBONS

inquished by: (Signature) Wm. Dennis Merklin
Received by: (Signature) Tom Lee Greaves
Date/Time 12/27/91 1230

inquished by: (Signature)
Received by: (Signature)
Date/Time

inquished by: (Signature)
Received by Mobile Laboratory for field analysis: (Signature)
Date/Time

patched by: (Signature)
Date/Time
Received for Laboratory by:
Date/Time

thod of Shipment:

cial Instructions:

TASK CODE 16109
ESTIMATED COST

APPLIED GEOSCIENCES INC.
Environmental Consultants

29B Technology Drive
Suite 100
Irvine, CA 92718
TEL: 714/453-8545
FAX: 714/453-0510

SANTA ANA REGION
DATE
MAR 24 1995
RLA 3/22
ACA 3/27

23 March 1995
A901978F
VFF-13

California Regional Water Quality Control Board
Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, California 92507-2409

Attention: Mr. Augustine Anijielo

SUBJECT: QUARTERLY VAPOR EXTRACTION SYSTEM PROGRESS REPORT AND FOURTH ROUND OF SEMIANNUAL GROUNDWATER MONITORING FOR THE AMERICAN ELECTRONICS, INC. FACILITY LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report summarizes the progress of the vapor extraction system (VES) and the results of the fourth round of semiannual groundwater monitoring conducted at the American Electronics, Inc. facility (site), located at 1600 East Valencia Drive, Fullerton, California (Figure 1). The system start-up period for the VES was summarized in a letter report submitted to the Regional Water Quality Control Board (RWQCB) on 4 January 1995 (Applied Geosciences Inc., 1995). The results of the first four rounds of quarterly groundwater monitoring and the first three rounds of semiannual monitoring conducted at the site were summarized in letter reports submitted to the RWQCB dated 18 March 1992, 6 July 1992, 1 October 1992, 22 June 1993, 30 September 1993, 24 March 1994, and 26 September 1994, respectively (Applied Geosciences Inc., 1992a, 1992b, 1992c, 1993a, 1993b, 1994a, 1994b).

OBJECTIVES

The objectives of the work summarized in this report were to:

- Present an assessment of the remedial progress of the VES; and
- Monitor the spatial and temporal changes in the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site and the adjacent properties to the south and west.

SCOPE OF WORK

The scope of work developed to meet the objective included the following:

- Vapor Extraction System
  - Assess the concentration of VOCs in the soil vapor stream that is removed by the VES;
  - Monitor the flow rate of the extracted soil gas;
  - Assess the total mass of VOCs being removed by the VES from the impacted area; and
  - Evaluate the efficiency and monitor the operating parameters of the vapor control system (VCS).
- Semiannual Groundwater Monitoring
  - Purging and sampling of the existing monitoring wells,
  - Laboratory analysis of the collected groundwater samples, and
  - Data evaluation and preparation of this report.

VES OPERATIONS

This letter report covers the VES start-up and first quarter of operations during the period from 13 October through 31 January 1995 (approximately 110 days). The system operated continuously on a 24-hour-per-day basis, with the exception of three downtime periods. As a condition of the South Coast Air Quality Management District (SCAQMD) permit, the system was required to be shut down during the weekend hours of the first two weeks of operation because the facility is closed on the weekends and there was no one present to monitor the system. The system was also shut down at the end of the start-up period in order to regenerate the VCS carbon canisters. The system downtime periods are summarized in Table 1.

The monitoring of the system was conducted daily for the first two weeks of operation, once a week for approximately 4 weeks, and monthly thereafter. Monitoring activities consisted of collecting vacuum and flow rate measurements from the VES, samples from the influent vapor stream for chemical analysis, and measurements of the inlet and outlet vapor stream concentrations of the VCS carbon canisters using an Hnu photoionization organic vapor meter (OVM) to minimize breakthrough potential.

System Evaluation

Vapor Flow Rate

The initial flow rate from the extraction well was observed at approximately 15 standard cubic feet per minute (SCFM) at start-up and increased steadily to a maximum of approximately 60 SCFM. It is common for the flow to increase as VOCs and soil moisture are removed from the subsurface, resulting in an increase in the effective porosity of the soil and the capacity for vapor transport. The flow was observed to decrease during and after a period of heavy rains and was measured at approximately 34 SCFM at the end of the first quarterly period. The average flow rate over the first quarter of operation was estimated to be approximately 50 SCFM. Based upon the recorded flow rates from the vapor extraction well (VEW) it is estimated that approximately 6.95 million cubic feet of soil vapor were extracted from the subsurface soils during the first quarter of operation.

Laboratory Analysis of Vapor Samples

Vapor samples collected from the influent vapor stream for chemical analysis were submitted to Orange Coast Analytical of Tustin, California, a State-certified hazardous waste laboratory, and analyzed for VOCs in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8010.

The results of the laboratory analyses indicated that detectable concentrations of chlorinated hydrocarbons (tetrachloroethene [PCE] and trichloroethene [TCE]) were present in the vapor stream extracted from the subsurface soils. The initial concentrations of PCE and TCE for the samples collected at system start-up were reported at 640 and 570 micrograms per liter (μg/L), respectively. The concentrations were observed to decrease steadily during the first quarter of operation, and the concentrations of PCE and TCE for the final sample collected at the end of the quarter were reported at 13 and 11 μg/L, respectively. The results of the laboratory analyses are summarized in Table 2, and laboratory reports and chain-of-custody documents are presented in Appendix A. The laboratory results are illustrated in Graph 1 (Appendix B).

Mass Removal Rate

The daily mass of VOC removal was estimated by multiplying the linearly interpolated daily extraction flow rate by the linearly interpolated VOC concentrations of the soil gas samples as shown below:

$$M_{voc} = Q \times C_{voc} \times A$$

Where:

M_{voc}	=	Daily mass of VOC removal (pounds/day)
Q	=	Volumetric flow rate (cubic feet/day)
C_{voc}	=	VOC concentrations (μg/L)
A	=	Conversion Factor

The daily total VOC removal rate during the first quarter of operation was estimated to range from approximately 2.69 pounds per day to approximately 0.07 pounds per day at the end of the quarter, and the total mass of VOCs removed during the first quarter was estimated at approximately 77 pounds. Based upon vapor stream monitoring before and after the VCS, it was estimated that the carbon canisters were saturated with VOCs after 30 days of operation, at which time the system was shut for carbon regeneration and subsequently restarted after regeneration of the canisters was completed. The estimated VOC mass removal is summarized in Table 3, and the cumulative mass removal over the course of the start-up period is illustrated in Graph 2 (Appendix B).

GROUNDWATER MONITORING AND SAMPLING

The groundwater monitoring was conducted by Applied Geosciences Inc on 15 and 16 February 1995 and consisted of the measurement of water levels and the collection of groundwater samples for the existing wells at the site and the adjacent properties to the south and west. The field procedures utilized during the groundwater monitoring are presented in Appendix C.

Prior to purging, the depth-to-groundwater was measured in each of the wells. The groundwater level measurements, including all of the previous monitoring rounds, are presented in Table 4, and the interpreted groundwater potentiometric surface contours are shown in Figure 3. Illustrations of the groundwater elevations versus time for each of the wells are presented in Graphs 2 through 10 (Appendix B).

Prior to sampling, the monitoring wells were purged using a submersible sampling pump (Grundfos) until measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and at least three well volumes of water were extracted from the well. Turbidity measurements, usually taken in the field, were not recorded during this sampling round due to a malfunction in the meter. However, samples were analyzed for turbidity at the laboratory, as required by RWQCB. The volume of water purged, pH, temperature, and electrical conductivity for each well were recorded on groundwater collection logs presented in Appendix D.

Laboratory Analysis and Results

The groundwater samples collected from the site were submitted to Orange Coast Analytical, a State-certified hazardous waste laboratory located in Tustin, California, for chemical analysis.

The samples were analyzed for VOCs and turbidity in general accordance with U.S. EPA Method Nos. 8021 and 180.1, respectively. In addition, two duplicate samples from wells BP-5 and BP-6, designated BP-E and BP-F, respectively, were also analyzed for VOCs for quality assurance/quality control (QA/QC) purposes. The results of the laboratory analyses, along with the results from the previous rounds of monitoring, are summarized in Table 5. PCE and TCE concentrations reported for each of the wells are plotted in Figure 3. Illustrations of the PCE and TCE concentrations versus time for each of the wells are presented in Graphs 11 through 18 (Appendix B). A copy of the laboratory reports and chain-of-custody documents are presented in Appendix A.

The results of the laboratory analyses indicated that detectable concentrations of four chlorinated hydrocarbons; namely, PCE, TCE, 1,1,1-trichloroethane (1,1-TCA), and 1,1-dichloroethene (1,1-DCE), were reported in the analyzed groundwater samples at concentrations up to 26, 72, 1.9, and 9.2 μg/L, respectively. No detectable concentrations of aromatic hydrocarbons were reported in any of the samples analyzed during this round of sampling.

The turbidity of the samples was reported at nondetectable levels for each of the well samples.

A discussion of the laboratory QA/QC is presented in Appendix E.

DISCUSSION

VES Operations

The data collected during the first quarter of operation indicates that the VES is effectively removing VOCs from the subsurface soils at the site. The monitoring of the vapor stream before and after the VCS indicates that the VCS operates efficiently and that stack emissions have met the conditions for VCS operation that were set forth in the SCAQMD Permit to Construct/Operate. It is estimated that approximately 77 pounds of VOCs have been removed from the subsurface during the start-up period, and the extracted vapor concentrations of total VOCs have decreased from 1,210 μg/L at start-up to 24 μg/L after 110 days of operation, which is approximately a 98 percent reduction. The observed reduction in vapor concentrations suggests that the system may be reaching the point where the removal rate begins to approach asymptotic levels. Based upon these observations, it appears that the remediation efforts may be proceeding ahead of schedule, and it is anticipated that the system will be shut down for 1 week prior to the next sampling round in order to "pulse" the system. If the concentrations do not increase significantly after the pulsing of the system, it is anticipated that a work plan for confirmation soil sampling will be prepared and submitted to the RWQCB for review shortly thereafter.

Groundwater Monitoring

Based on the static groundwater elevation data collected from the eight monitoring wells, the groundwater gradient beneath the site is interpreted to be relatively flat and approximately 0.001 feet/foot (ft/ft) to the west, with wells BP-2 and BP-4 being the most upgradient. The observed gradient has been variable over the past few rounds of monitoring (although generally to the west), most likely due to the changing water table elevation. A review of Table 4 and Graphs 3 through 10 (Appendix B) shows that the groundwater table has risen approximately 20 feet over the past year.

The primary compounds detected in the groundwater samples collected during this and previous rounds of monitoring were the chlorinated hydrocarbons PCE, TCE, and 1,1-DCE. PCE and TCE were reported at concentrations exceeding the State maximum contaminant level (MCL) of 5 μg/L in the samples collected from each of the wells. 1,1-DCE was not reported to exceed the State MCL of 6 μg/L in each of the wells, except for BP-2 and BP-3, which were reported at 6.1 and 9.2 μg/L, respectively.

The distribution of chlorinated hydrocarbons observed during this and the previous two sampling rounds appears to be relatively consistent from well to well, and there does not appear to be a significant difference between the upgradient wells (BP-2, BP-3, and BP-4) and the downgradient wells (BP-1, BP-5, BP-6, BP-7, and BP-8). Samples collected from upgradient wells BP-2 and BP-3 have consistently had detectable concentrations of PCE and TCE ranging as high as 75 and 110 μg/L, respectively, which can be viewed as indicative of background or regional concentrations. Graphs 11 through 18 (Appendix B) illustrate PCE and TCE concentrations versus time in each of the groundwater monitoring wells. The graphs are plotted on a log scale because concentration distributions are generally logarithmic in nature and changes in concentration values are generally only significant when measured in orders of magnitude. Examination of the graphs indicates that concentrations in wells BP-1 and BP-5, which were drilled through the areas with the highest reported concentrations of PCE and TCE in the soil, have decreased over time by up to two orders of magnitude until they have approached the background concentrations observed in the other wells, which have remained consistent since the monitoring program was initiated. PCE concentrations in wells BP-1 and BP-5, which are located in the area of affected soil, have been lower than wells BP-2 and BP-3, which are upgradient, over the past five sampling rounds. TCE concentrations, while still generally higher in well BP-1 compared with wells BP-2 and BP-3, have been of the same order of magnitude over the past five sampling rounds. These data appear to indicate that the higher initial concentrations of PCE and TCE in wells BP-1 and BP-5 may have been introduced during the well installation procedures and do not reflect the actual conditions of the aquifer beneath the site.

Aromatic hydrocarbons, previously observed in wells BP-3, BP-4, BP-5 and BP-6 in the 1991 and 1992 sampling rounds, were not reported at concentrations exceeding the laboratory detection limits (<1 μg/L) in any of the samples analyzed during this round.

In summary, the concentration and distribution of chlorinated hydrocarbons detected in samples from the monitoring wells appear to be consistent with the background concentration in the region and do not support the theory that site operations have impacted the underlying aquifer.

Should you have any questions regarding the information contained in this letter report, please feel free to contact either of us at your convenience.

Very truly yours,
APPLIED GEOSCIENCES INC.

MARK S. COUSINEAU, R.E.A.
President

WILLIAM J. WEAVER
Assistant Project Hydrogeologist

cc: Mr. Richard F. Holland, American Electronics, Inc.
David T. Peterson, Esq., Hill Wynne Troop & Meisinger
Mr. Fred B. Warburton, Yokohama Tire
John Allen, Esq., Graham & James

ATTACHMENTS

Table 1: System Downtime
Table 2: Analytical Results of Vapor Samples Collected
Table 3: Estimated VES Performance
Table 4: Groundwater Elevation Measurements
Table 5: Laboratory Analytical Results of Groundwater Samples Collected To Date
Table 6: Relative Percent Differences (RPDs) Between Samples and Duplicates
Figure 1: Site Vicinity Map
Figure 2: Site Plan Showing VES and Related Features
Figure 3: Groundwater Gradient and Chemical Analytical Results February 1995 Sampling Round
Appendix A: Laboratory Reports and Chain-of-Custody Forms
Appendix B: Graph: PCE & TCE Vapor Concentrations -vs- Time
Graph: Estimated VES Performance (VOC Mass Removal)
Graphs: Groundwater Elevations -vs- Time
Graphs: PCE and TCE Concentrations -vs- Time
Appendix C: Field Procedures
Appendix D: Groundwater Collection Logs
Appendix E: Quality Assurance/Quality Control (QA/QC)

REFERENCES

Applied Geosciences Inc., 1992a, Additional subsurface investigation and first quarterly round of groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 18 March 1992.

_____, 1992b, Second round of quarterly groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 6 July 1992.

_____, 1992c, Third round of quarterly groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 1 October 1992.

_____, 1993a, Fourth round of quarterly groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 22 June 1993.

_____, 1993b, First round of semiannual groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 30 September 1993.

_____, 1994a, Second round of semiannual groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 24 March 1994.

_____, 1994b, Third round of semiannual groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California, dated 26 September 1994.

_____, 1995, System Start-up and Progress Report for the Vapor Extraction Remediation Project at the American Electronics Inc. facility located in Fullerton, California, dated 4 January 1995.

TABLE 1
SYSTEM DOWNTIME

DATE	COMMENTS
15 October 1994 16 October 1994	Weekend shutdown of system according to AQMD permit requirements during initial two week startup period.
22 October 1994 23 October 1994	Weekend shutdown of system according to AQMD permit requirements during initial two week startup period.
12 November 1994 13 November 1994 14 November 1994 15 November 1994	System shutdown to regenerate carbon cannisters.

TABLE 2
ANALYTICAL RESULTS OF VAPOR SAMPLES

Sample Number	Date of Collection	EPA Method 8010 (ug/L)	
		PCE	TCE
AEI-IN1	13-OCT-94	640	570
AEI-IN2	14-OCT-94	490	550
AEI-IN3	17-OCT-94	510	530
AEI-IN4	18-OCT-94	580	560
AEI-IN5	19-OCT-94	480	500
AEI-IN6	20-OCT-94	280	250
AEI-IN7	21-OCT-94	270	220
AEI-IN8	24-OCT-94	320	270
AEI-IN9	01-NOV-94	140	130
AEI-IN10	08-NOV-94	140	110
AEI-IN11	15-NOV-94	39	55
AEI-IN12	22-NOV-94	110	92
AEI-IN13	08-DEC-94	70	46
AEI-IN14	05-JAN-95	32	40
AEI-IN15	31-JAN-95	13	11

NOTES:
Vapor samples were analyzed for volatile organic compounds (VOCs) in general accordance with EPA Method No. 8010.
ug/L = micrograms per liter.
PCE = tetrachloroethene.
TCE = trichloroethene.

TABLE 3
ESTIMATED VES PERFORMANCE

Date (d-m-yr)	Sample I.D. Number	Well Flow (CF/day)	VOCs Removed (lb/day)	Cumulative VOCs Removed (lbs)
13-Oct-94	AEI-IN1	21,824	1.65	1.65
14-Oct-94	AEI-IN2	29,097	1.89	3.54
15-Oct-94		0	0.00	3.54
16-Oct-94		0	0.00	3.54
17-Oct-94	AEI-IN3	29,728	1.93	5.47
18-Oct-94	AEI-IN4	34,368	2.45	7.91
19-Oct-94	AEI-IN5	39,418	2.41	10.32
20-Oct-94	AEI-IN6	62,263	2.06	12.39
21-Oct-94	AEI-IN7	64,049	1.96	14.34
22-Oct-94		0	0.00	14.34
23-Oct-94		0	0.00	14.34
24-Oct-94	AEI-IN8	71,280	2.63	16.97
25-Oct-94		78,336	2.69	19.66
26-Oct-94		76,385	2.43	22.09
27-Oct-94		81,043	2.38	24.47
28-Oct-94		85,701	2.30	26.77
29-Oct-94		85,701	2.09	28.86
30-Oct-94		85,701	1.87	30.73
31-Oct-94		85,701	1.66	32.39
01-Nov-94	AEI-IN9	85,701	1.44	33.83
02-Nov-94		85,055	1.42	35.25
03-Nov-94		84,408	1.39	36.64
04-Nov-94		83,761	1.37	38.01
05-Nov-94		83,115	1.34	39.35
06-Nov-94		82,468	1.32	40.67
07-Nov-94		81,822	1.29	41.96
08-Nov-94	AEI-IN10	81,175	1.27	43.23
09-Nov-94		80,067	1.14	44.36
10-Nov-94		78,960	1.01	45.38
11-Nov-94		77,853	0.89	46.27
12-Nov-94		0	0.00	46.27
13-Nov-94		0	0.00	46.27
14-Nov-94		0	0.00	46.27
15-Nov-94	AEI-IN11	0	0.00	46.27
16-Nov-94		0	0.00	46.27
17-Nov-94		0	0.00	46.27
18-Nov-94		0	0.00	46.27
19-Nov-94		0	0.00	46.27
20-Nov-94		0	0.00	46.27
21-Nov-94		0	0.00	46.27
22-Nov-94	AEI-IN12	61,657	0.78	47.04
23-Nov-94		64,030	0.79	47.83
24-Nov-94		66,403	0.79	48.62
25-Nov-94		68,776	0.80	49.42
26-Nov-94		71,149	0.80	50.22
27-Nov-94		73,522	0.80	51.03
28-Nov-94		75,895	0.80	51.83
29-Nov-94		78,268	0.80	52.63

TABLE 3
ESTIMATED VES PERFORMANCE

Date (d-m-yr)	Sample I.D. Number	Well Flow (CF/day)	VOCs Removed (lb/day)	Cumulative VOCs Removed (lbs)
30-Nov-94		80,642	0.80	53.43
01-Dec-94		83,015	0.80	54.23
02-Dec-94		83,648	0.77	55.00
03-Dec-94		84,281	0.75	55.76
04-Dec-94		84,914	0.73	56.49
05-Dec-94		85,548	0.71	57.19
06-Dec-94		86,181	0.68	57.87
07-Dec-94		86,814	0.66	58.53
08-Dec-94	AEI-IN13	87,448	0.63	59.16
09-Dec-94		87,303	0.62	59.79
10-Dec-94		87,158	0.61	60.40
11-Dec-94		87,013	0.60	61.01
12-Dec-94		86,868	0.59	61.60
13-Dec-94		86,724	0.59	62.19
14-Dec-94		86,579	0.58	62.76
15-Dec-94		86,724	0.57	63.33
16-Dec-94		86,868	0.56	63.89
17-Dec-94		87,013	0.55	64.45
18-Dec-94		87,158	0.55	64.99
19-Dec-94		87,303	0.54	65.53
20-Dec-94		87,448	0.53	66.06
21-Dec-94		87,055	0.52	66.58
22-Dec-94		86,663	0.51	67.09
23-Dec-94		86,271	0.50	67.58
24-Dec-94		85,879	0.49	68.07
25-Dec-94		85,487	0.48	68.55
26-Dec-94		85,095	0.47	69.01
27-Dec-94		84,703	0.46	69.47
28-Dec-94		84,311	0.45	69.91
29-Dec-94		83,919	0.43	70.35
30-Dec-94		83,527	0.42	70.77
31-Dec-94		83,135	0.41	71.19
01-Jan-95		82,743	0.40	71.59
02-Jan-95		82,351	0.39	71.99
03-Jan-95		81,959	0.38	72.37
04-Jan-95		81,567	0.37	72.75
05-Jan-95	AEI-IN14	81,175	0.36	73.11
06-Jan-95		77,847	0.34	73.45
07-Jan-95		74,518	0.32	73.77
08-Jan-95		71,190	0.30	74.07
09-Jan-95		67,862	0.27	74.34
10-Jan-95		64,534	0.25	74.59
11-Jan-95		61,205	0.23	74.82
12-Jan-95		57,877	0.21	75.04
13-Jan-95		54,549	0.19	75.23
14-Jan-95		54,433	0.19	75.42
15-Jan-95		54,318	0.18	75.60
16-Jan-95		54,203	0.17	75.78

TABLE 3
ESTIMATED VES PERFORMANCE

Date (d-m-yr)	Sample I.D. Number	Well Flow (CF/day)	VOCs Removed (lb/day)	Cumulative VOCs Removed (lbs)
17-Jan-95		54,087	0.17	75.95
18-Jan-95		53,972	0.16	76.11
19-Jan-95		53,857	0.16	76.26
20-Jan-95		51,339	0.14	76.41
21-Jan-95		48,821	0.13	76.53
22-Jan-95		46,304	0.12	76.65
23-Jan-95		43,786	0.11	76.76
24-Jan-95		41,268	0.10	76.85
25-Jan-95		42,336	0.09	76.95
26-Jan-95		43,404	0.09	77.04
27-Jan-95		44,472	0.09	77.12
28-Jan-95		45,540	0.08	77.21
29-Jan-95		46,608	0.08	77.29
30-Jan-95		47,677	0.08	77.36
31-Jan-95	AEI-IN15	48,745	0.07	77.44
Operation Totals:		**6,951,927**		**77**

NOTES:

CF/day = cubic feet per day

VOCs = volatile organic compounds

lbs/day = pounds per day

lbs = pounds

TABLE 4
GROUNDWATER ELEVATION MEASUREMENTS

Well Number	BP-1 [178.14]		BP-2 [183.13]		BP-3 [180.61]		BP-4 [179.89]		BP-5 [177.69]		BP-6 [177.31]		BP-7 [176.96]		BP-8 [177.51]	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
01-10-91	136.68	41.46	141.81	41.32	139.34	43.79	138.50	41.39	136.80	40.89						
01-17-91	136.74	41.40	141.90	41.23	139.34	43.79	138.49	41.40	136.80	40.89						
01-30-91	137.13	41.01	142.30	40.83	139.79	43.34	138.95	40.94	137.31	40.38						
06-21-91			143.19	39.94	140.66	42.47	139.76	40.13	138.09	39.60	137.50	39.81				
07-15-91	138.39	39.75	143.55	39.58	141.05	42.08	140.15	39.74	138.50	39.19	137.93	39.38				
12-19-91	138.05	40.09	143.05	40.08	140.40	42.73	139.34	40.55	137.75	39.94	137.35	39.96				
05-14-92	131.71	46.43	136.50	46.63	134.13	49.00	132.77	47.12	131.34	46.35	130.90	46.41				
08-25-92	131.85	46.29	136.36	46.77	134.18	48.95	133.04	46.85	131.56	46.13	131.09	46.22				
05-10-93	128.15	49.99	132.87	50.26	130.51	52.62	129.05	50.84	127.71	49.98	127.32	49.99				
08-09-93	120.45	57.69	124.93	58.20	122.89	60.24	120.92	58.97	119.92	57.77	119.62	57.69	119.51	57.45	120.13	57.38
02-14-94	116.25	61.89	120.76	62.37	119.75	63.38	117.37	62.52	115.82	61.87	115.45	61.86	115.21	61.75	115.80	61.71
08-23-94	103.80	74.34	108.19	74.94	106.28	76.85	104.56	75.33	103.31	74.38	103.00	74.31	102.82	74.14	103.44	74.07
02-15-95	106.37	71.77	110.80	72.33	108.70	74.43	107.62	72.27	105.94	71.75	105.58	71.73	105.32	71.64	105.89	71.62

NOTES:

Surveyed top of well casing elevations (shown in brackets below well number) are given in feet relative to mean sea level.
Depth = depth-to-groundwater measured in feet below the top of the well casing.
Elev. = elevation of groundwater in feet relative to mean sea level.
Blank spaces denote that the well was not measured or not yet in existence during the indicated measuring round.

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
BP-1	04-05-89	<10	290	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	1500	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	07-02-90	<25	230	<25	<25	<25	<25	NR	<25	<25	89	<25	NA	NR	NR	NA	NA	NA	NA
	08-08-90	<2	520	<2	<2	<2	<2	NR	<2	<5	<2	<2	<0.5	NR	NR	<1	<1	<1	NA
	08-25-92	67	740	<10	<10	<10	14	NR	<10	<10	<10	<10	<10	NR	NR	<10	<10	<20	22
	05-10-93	9	51	<1	<1	<1	<1	1	3	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	7	22	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	6	76	<1	<1	<1	<1	1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	2.8	81	<0.5	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-24-94	3	80	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	5.1	72	<0.5	<0.5	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-2	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	110	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	6	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	50	36	1	<0.3	<0.4	<0.4	NR	<0.6	<0.6	<0.3	<0.8	<0.2	NR	NR	<0.7	<0.2	<0.8	82
	01-30-91	54	40	2.6	<0.3	<0.4	<0.4	NR	6.8	*21*	0.4	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	15
	07-16-91	68	43	1.1	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.4	NR	NR	0.4	<0.2	0.3	70
	12-23-91	29	19	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.4*	<0.3	<0.2	<0.2	NR	NR	0.6	<0.3	0.6	15
	05-15-92	19	21	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	05-10-93	61	35	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-10-93	32	25	1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	15	47	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	13	15	<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	14	33	1.4	<0.5	<0.5	<0.5	<0.5	6.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-3	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	40	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	30	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	7.7	6.5	0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	0.7	3.1	32
	01-30-91	75	41	2	<0.3	<0.4	<0.4	NR	6.8	*19*	0.4	1.6	<0.2	NR	NR	<0.2	<0.2	<0.2	25
	07-16-91	32	19	0.4	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.2	NR	NR	0.5	<0.2	<0.2	7.8
	12-23-91	26	31	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.6*	<0.3	<0.2	0.2	NR	NR	0.6	<0.3	0.6	7
	05-15-92	5.4	42	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	05-10-93	52	39	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-10-93	24	23	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	02-15-94	25	20	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	12	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-23-94	12	11	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	26	52	1.9	<0.5	<0.5	<0.5	<0.5	9.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-4	01-11-91	2	4	0.4	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	120
	01-30-91	2.1	3.9	<0.3	<0.3	<0.4	<0.4	NR	2.1	*20*	<0.3	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	85
	07-16-91	9	7	0.3	<0.3	<0.4	<0.4	NR	<0.6	1	<0.3	<0.3	<0.2	NR	NR	<0.2	<0.2	<0.2	17
	12-26-91	4.2	15	0.6	<0.3	<0.4	<0.4	NR	1.2	*17*	0.6	<0.2	0.2	NR	NR	*1.4*	<0.3	0.4	10
	05-15-92	15	24	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	4	7.2	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	0.9	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	30
	05-10-93	8	10	<1	<1	<1	<1	<1	2	<2	<1	<1	3	1	3	10	2	9	<0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	8	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	5.4	4.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-5	01-11-91	35	68	1.3	<0.3	<0.4	<0.4	NR	<0.6	<5	0.8	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	125
	01-30-91	40	85	2.8	<0.3	<0.4	<0.4	NR	3.5	*19*	1.7	1.3	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	53	65	1.1	<0.3	0.5	<0.4	NR	<0.6	*1.1*	0.7	<0.2	0.2	NR	NR	0.3	<0.2	<0.2	7.7
	12-23-91	170	260	7.8	<0.3	3.6	3.6	NR	<0.6	*11*	5.4	<0.2	0.6	NR	NR	1.2	<0.3	0.6	18
	05-15-92	22	190	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	11	34	0.7	<0.5	<0.5	<0.5	NR	1.6	<0.5	1.2	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	88
	05-10-93	8	23	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
DUP	05-10-93	8	24	1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	12	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	02-15-94	7	10	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-24-94	5.4	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.9	8.6	<0.5	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	6.8	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-6	06-28-91	7.5	71	<0.3	<0.3	<0.4	0.5	NR	<0.6	*0.6*	0.3	<0.2	1.2	NR	NR	0.2	0.9	1	86
	07-18-91	6	48	<0.3	<0.3	<0.4	0.4	NR	<0.6	*1*	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	23

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	12-24-91	11	17	0.4	<0.3	<0.4	<0.4	NR	<0.6	25	<0.3	<0.2	0.4	NR	NR	0.4	<0.3	0.6	7
	05-15-92	3	300	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	40	86	1	<0.5	<0.5	<0.5	NR	0.6	<0.5	1	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	53
	05-10-93	12	54	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-09-93	7	9	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.2
	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.9
DUP	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-23-94	6	15	<0.5	<0.5	<0.5	<0.5	<0.5	3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	19	<0.5	<0.5	<0.5	<0.5	<0.5	4.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	7	21	<0.5	<0.5	<0.5	<0.5	<0.5	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-7	07-16-93	3	12	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	85
	08-10-93	6	7	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-14-94	10	8	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.9
	08-24-94	6.1	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.5	16	<0.5	<0.5	<0.5	<0.5	<0.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-8	07-16-93	9	160	<1	<1	<1	<1	6	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	200
	08-10-93	7	15	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.8
	02-14-94	7	39	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	4.2	51	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	5.2	64	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
Trip Blnk.	01-11-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.8	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	01-30-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	0.6	*21*	<0.3	1.6	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	*14*	<0.3	<0.2	0.2	NR	NR	<0.2	<0.3	<0.4	NA
	08-25-92	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	NA
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	07-16-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-09-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
Lab Blnk.	01-30-91	<0.3	<0.3	<0.3	0.3	<0.4	<0.4	NR	<0.6	5.6	<0.3	1.6	<0.2	NR	NR	0.5	<0.2	0.6	NA
	06-28-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	0.8	<0.3	<0.2	0.5	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	NR	<0.6	1.4	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	NA

TABLE 5
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	1.6	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.3	<0.4	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	0.4	<0.3	<0.2	<0.2	NR	NR	0.5	<0.3	<0.4	NA
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-17-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-26-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-16-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
MCL		5	5	200	32	5	0.5	6	6	40	N/A	30	0.7	N/A	N/A	100	680	1750	

NOTES:

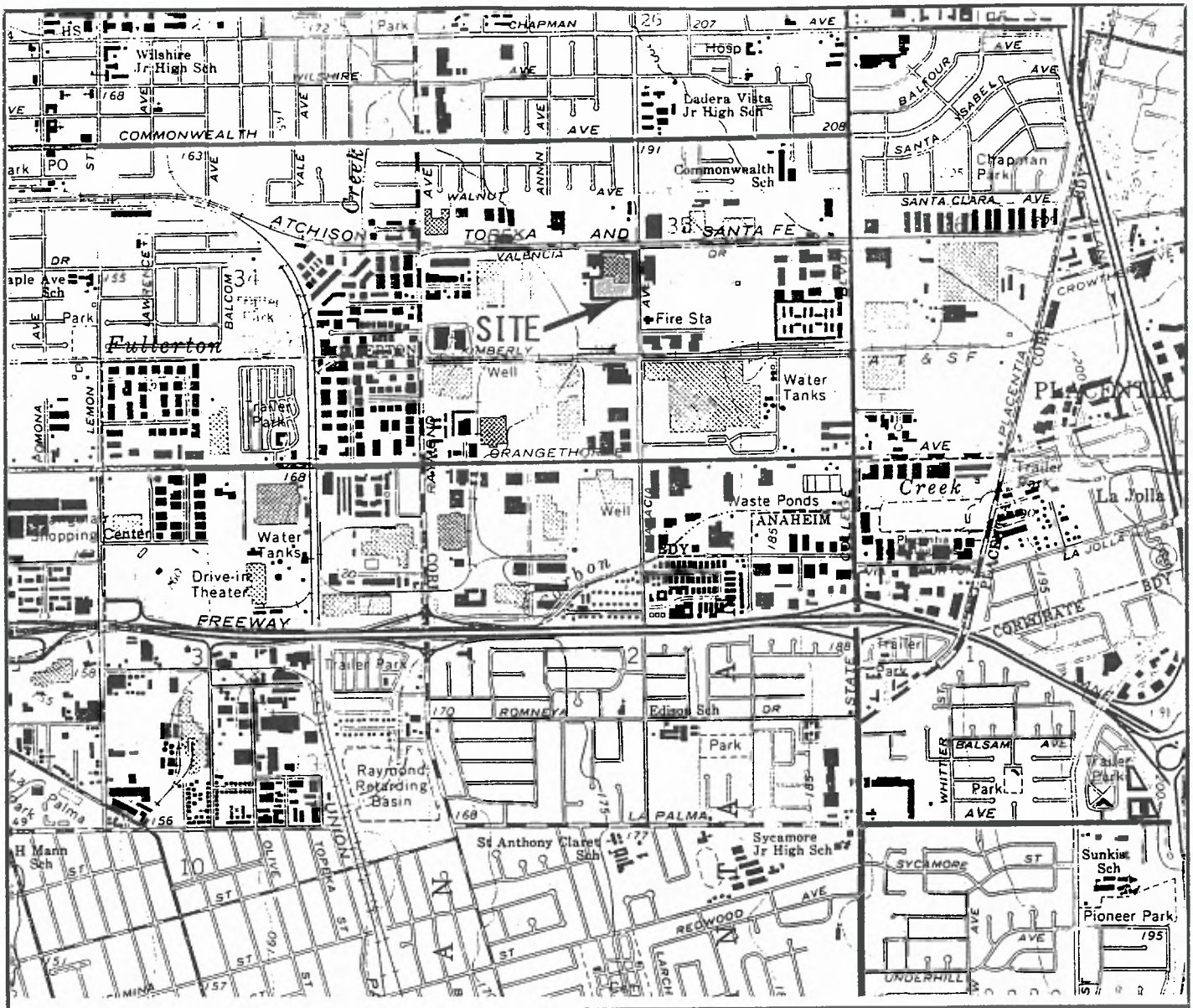
Samples were analyzed for volatile organic compounds (VOCs) and turbidity in general accordance with EPA Method Nos. 8021 (8010/8020) and 180.1, respectively.
ug/L = micrograms per liter.
NTU = nephelometric turbidity unit.
PCE = tetrachloroethene.
TCE = trichloroethene.
TCA = trichloroethane.
DCA = dichloroethane.
DCE = dichloroethene.
Meth. Chloride = methylene chloride.
TMB = trimethylbenzene.
TBB = tert-butylbenzene.
Turb. = turbidity.
The less than symbol (<) denores that the compound was not detected at a concentration greater than the indicated laboratory detection limit.
Concentrations reported in italics indicate that the compound was also detected in the laboratory method blank for the sample batch.
NR = not reported.
NA = not analyzed for.
DUP = duplicate sample.
Trip Blnk. = deionized water trip blank sample.
Lab Blnk. = laboratory internal quality assurance/quality control blank sample analysis.
MCL = State maximum contaminant level for drinking water. State action levels were used for methylene chloride and toluene as MCLs were not available for these compounds.
N/A = MCL or action level not available for this compound.

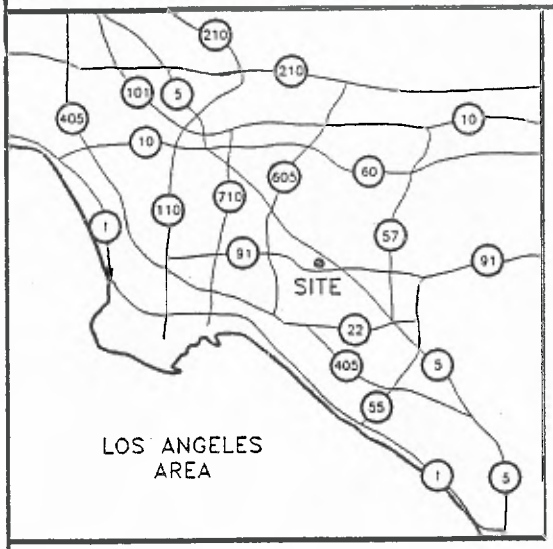
TABLE 6
Relative Percent Differences (RPDs)
Between Samples and Duplicates

Well Number	Compounds	February 1995 Sampling Round				
		Sample	Ln (Sample)	Duplicate	Ln (Duplicate)	RPD %
BP-5	**EPA 8021 (ug/L)**					
	1,2-dichloroethane	2.5	0.92	2.6	0.96	4.19%
	Tetrachloroethene	6.9	1.93	6.8	1.92	0.76%
	1,1,1-Trichloroethane	<0.5	-0.69	<0.5	-0.69	0.00%
	Trichloroethene	8.6	2.15	8.8	2.17	1.06%
BP-6	**EPA 8021 (ug/L)**					
	1,2-dichloroethane	4.2	1.44	3.8	1.34	7.23%
	Tetrachloroethene	6.4	1.86	7	1.95	4.71%
	1,1,1-Trichloroethane	<0.5	-0.69	<0.5	-0.69	0.00%
	Trichloroethene	19	2.94	21	3.04	3.34%

NOTES:

1) Samples were analyzed for volatile organic compounds (VOCs) in general accordance with EPA Method No. 8021. Concentrations are reported in micrograms per liter (ug/L).
2) Ln = natural logarithm
3) The less than symbol (<) denotes that the compound was not detected at a concentration exceeding the laboratory detection limit shown.
4) For nondetect samples, the logarithm of the detection limit was used for comparison.





NORTH

0 ½ 1

SCALE, MILES

NOTE

BASE MAP IS TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA–ORANGE CO., 7.5–MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

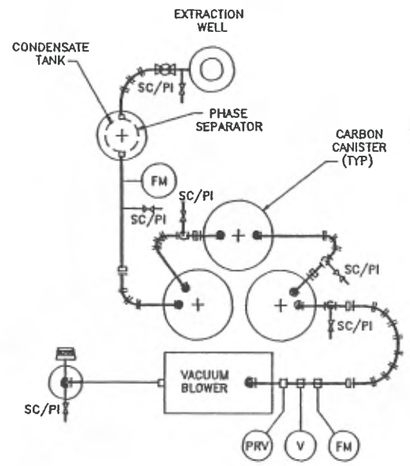
APPLIED GEOSCIENCES INC.

Environmental Consultants

SITE VICINITY MAP

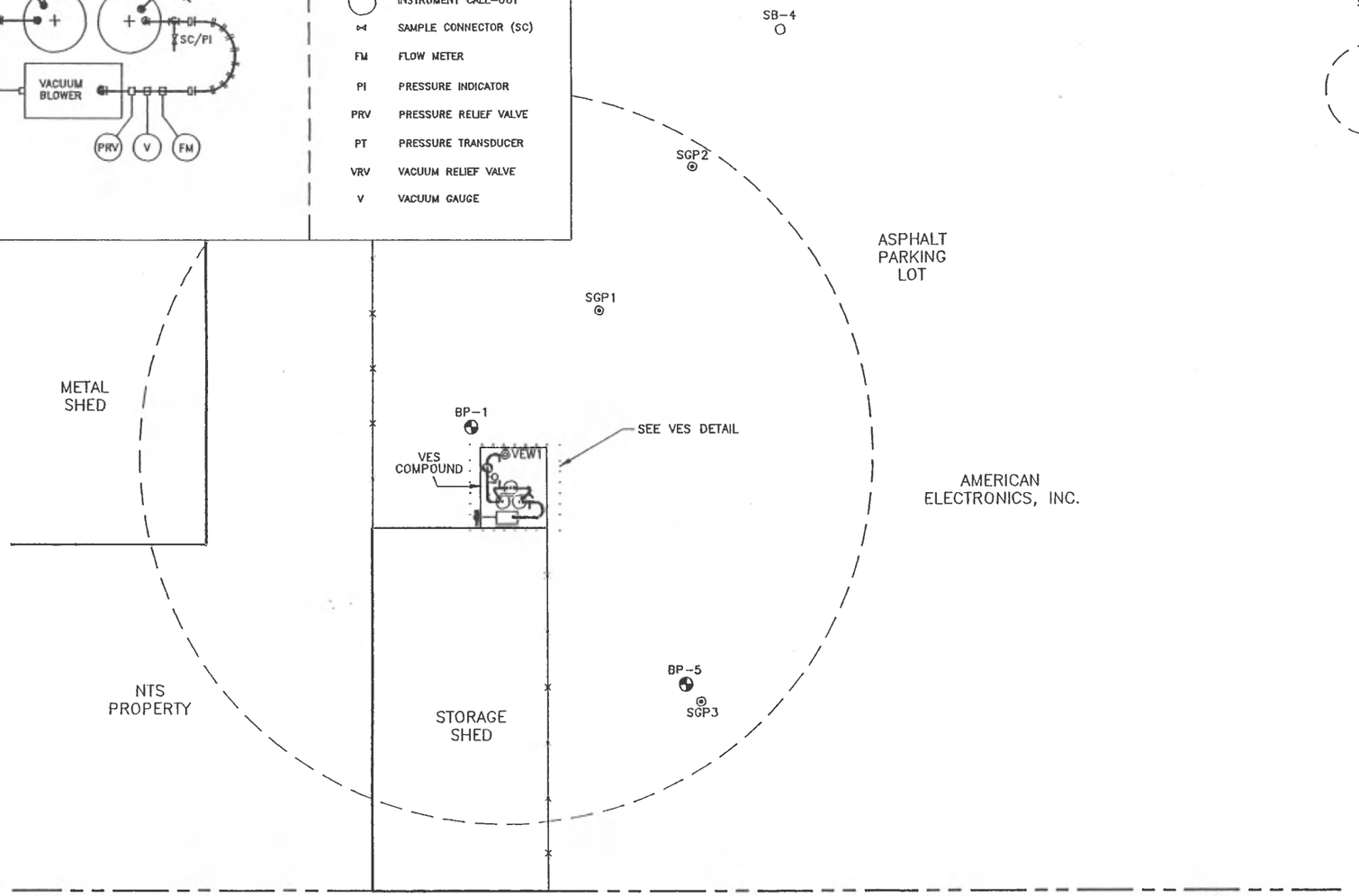
PROJECT NUMBER A901978F | FIGURE 1

VES DETAIL



LEGEND

	BALL VALVE (BV)
	GLOBE VALVE (GV)
	WEATHER CAP
	INSTRUMENT CALL-OUT
	SAMPLE CONNECTOR (SC)
FM	FLOW METER
PI	PRESSURE INDICATOR
PRV	PRESSURE RELIEF VALVE
PT	PRESSURE TRANSDUCER
VRV	VACUUM RELIEF VALVE
V	VACUUM GAUGE



EXPLANATION

BP-5	LOCATION AND DESIGNATION OF GROUNDWATER MONITORING WELL
SB-4	LOCATION AND DESIGNATION OF SOIL BORING
VEW1	LOCATION AND DESIGNATION OF VAPOR EXTRACTION WELL
SGP1	LOCATION AND DESIGNATION OF SOIL-GAS MONITORING PROBE WELL
	VAPOR EXTRACTION SYSTEM TARGETED RADIUS OF INFLUENCE (PRIOR TO SYSTEM STARTUP)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN – PLUMBING", BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960

NORTH

0 20 40

SCALE, FEET

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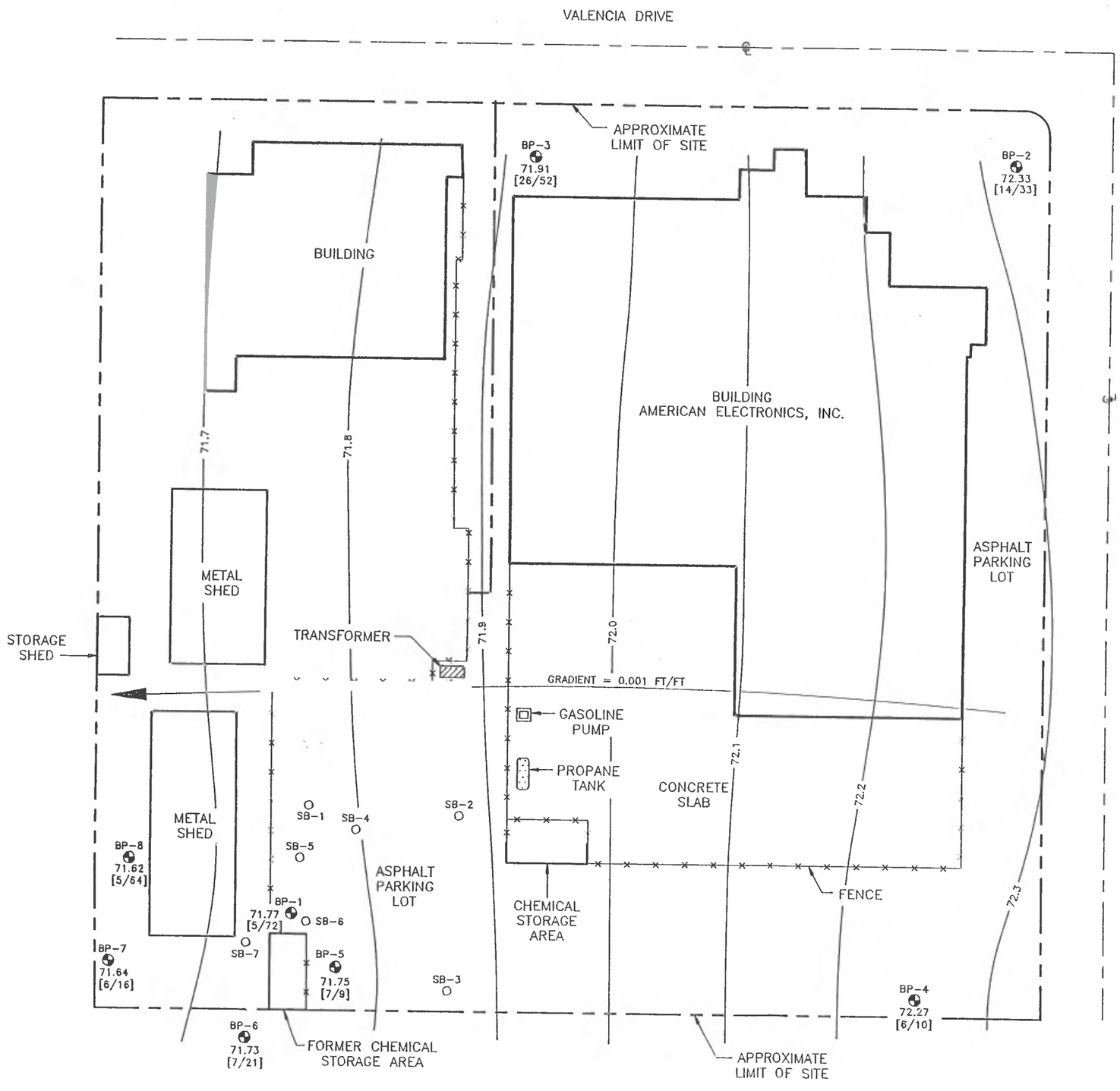
SITE PLAN SHOWING VAPOR EXTRACTION SYSTEM (VES) AND RELATED FEATURES

PROJECT NUMBER A901978F | FIGURE 2



EXPLANATION

BP-4 ⊕ MONITORING WELL LOCATION AND DESIGNATION. GROUNDWATER ELEVATION IS LISTED IN FEET RELATIVE TO MEAN SEA LEVEL. PCE AND TCE CONCENTRATIONS ARE SHOWN IN BRACKETS AND ARE REPORTED IN ug/L.

SB-3 ○ SOIL BORING LOCATION AND DESIGNATION

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN – PLUMBING," BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960
3) ug/L = MICROGRAMS PER LITER

NORTH

0 80 160

SCALE, FEET

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER GRADIENT AND CHEMICAL ANALYTICAL RESULTS FEBRUARY 1995 SAMPLING ROUND

PROJECT NUMBER A901978F | FIGURE 3

APPENDIX A

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

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ORANGE COAST ANALYTICAL THANKS YOU FOR YOUR BUSINESS

THE FOLLOWING PAGES ARE THE ANALYSIS REPORT

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ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Thanh Hoang
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978F Task 7

Sample Description: Carbon, AEI-Carbon 2
Laboratory Sample #: 94120397
Laboratory Reference #: AGI 4960

Sampled : 12-08-94
Received: 12-08-94
Analyzed: 12-21-94
Reported: 12-22-94

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*
Bromodichloromethane	100000	N.D.
Bromoform	100000	N.D.
Bromomethane	100000	N.D.
Carbon tetrachloride	100000	N.D.
Chlorobenzene	100000	N.D.
Chlorodibromomethane	100000	N.D.
Chloroethane	200000	N.D.
2-Chloroethyl vinyl ether	500000	N.D.
Chloroform	100000	N.D.
Chloromethane	200000	N.D.
1,2-Dichlorobenzene	200000	N.D.
1,3-Dichlorobenzene	200000	N.D.
1,4-Dichlorobenzene	200000	N.D.
1,1-Dichloroethane	100000	N.D.
1,2-Dichloroethane	100000	N.D.
1,1-Dichloroethene	100000	N.D.
Trans 1,2-Dichloroethene	100000	N.D.
1,2-Dichloropropane	100000	N.D.
cis-1,3-Dichloropropene	100000	N.D.
trans-1,3-Dichloropropene	400000	N.D.
Methylene chloride	500000	N.D.
1,1,2,2-Tetrachloroethane	100000	N.D.
Tetrachloroethene	100000	44,000,000
1,1,1-Trichloroethane	100000	N.D.
1,1,2-Trichloroethane	100000	N.D.
Trichloroethene	100000	7,800,000
Trichloroflouromethane	100000	N.D.
Vinyl chloride	100000	N.D.

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Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*105*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Thanh Hoang
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978F Task 7

Sample Description: Air, AEI-VW1-IN-13
Laboratory Sample #: 94120396
Laboratory Reference #: AGI 4960

Sampled : 12-08-94
Received: 12-08-94
Analyzed: 12-09-94
Reported: 12-22-94

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Bromodichloromethane	0.25	N.D.	
Bromoform	0.25	N.D.	
Bromomethane	0.25	N.D.	
Carbon tetrachloride	0.25	N.D.	
Chlorobenzene	0.25	N.D.	
Chlorodibromomethane	0.25	N.D.	
Chloroethane	0.25	N.D.	
2-Chloroethyl vinyl ether	0.25	N.D.	
Chloroform	0.25	N.D.	
Chloromethane	0.25	N.D.	
1,2-Dichlorobenzene	0.25	N.D.	
1,3-Dichlorobenzene	0.25	N.D.	
1,4-Dichlorobenzene	0.25	N.D.	
1,1-Dichloroethane	0.25	N.D.	
1,2-Dichloroethane	0.25	N.D.	
1,1-Dichloroethene	0.25	N.D.	
Trans 1,2-Dichloroethene	0.25	N.D.	
1,2-Dichloropropane	0.25	N.D.	
cis-1,3-Dichloropropene	0.25	N.D.	
trans-1,3-Dichloropropene	0.25	N.D.	
Methylene chloride	0.25	N.D.	
1,1,2,2-Tetrachloroethane	0.25	N.D.	
Tetrachloroethene	0.25	70	<---
1,1,1-Trichloroethane	0.25	N.D.	
1,1,2-Trichloroethane	0.25	N.D.	
Trichloroethene	0.25	46	<---
Trichlorofluoromethane	0.25	N.D.	
Vinyl chloride	0.25	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
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(714) 832-0064, Fax (714) 832-0067

Q C D A T A R E P O R T

Analysis: Volatile Organic Compounds (EPA 8010)

Date of Analysis: 12/21/94

Laboratory Sample No: OCA 200

Laboratory Reference No: AGI 4960

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
1,1-Dichloroethane	0.0	20	19	21	95	105	10
Trichloroethene	0.0	20	20	21	100	105	5
Tetrachloroethene	0.0	20	19	22	95	110	15

Definition of Terms:

R1 Results of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery of MS: {(MS - R1) / SP } X 100

PR2 Percent Recovery of MSD: {(MSD - R1) / SP } X 100

RPD Relative Percent Difference: {(MS - MSD)/(MS + MSD)} X 2 X 100

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Applied Geosciences Inc.

Chain of Custody

29B Technology Drive, Suite 100
Irvine, California 92718
(714) 453-8545
(714) 453-0510 FAX

Project Name: AEI

Project Number: A901978F, task 7

Project Manager: WW

Laboratory Name: Orange Coast

Method of Shipment: AGI

Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other Vapor	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270	EPA 8010				
AEI-VW-IN13			12/08/94			✓										✓				
AEI-CARBON 2																✓				

Remarks: * Results to Thank Hoang

Turnaround Time

- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☐
- Other ___ Business Days ☐

Relinquished by sampler	Date	Time	Received by
[signature]	12-8-94		
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory: [signature] Date 12/08/94 Time 2:00 P.M

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Applied Geosciences, Inc.
ATTN: Mr. Thanh Hoang
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978

Sample Description: Air, AEI-VW1-IN-14
Laboratory Sample #: 95010028
Laboratory Reference #: AGI 5141

Sampled : 01-05-95
Received: 01-05-95
Analyzed: 01-08-95
Reported: 01-09-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Bromodichloromethane	0.25	N.D.	
Bromoform	0.25	N.D.	
Bromomethane	0.25	N.D.	
Carbon tetrachloride	0.25	N.D.	
Chlorobenzene	0.25	N.D.	
Chlorodibromomethane	0.25	N.D.	
Chloroethane	0.25	N.D.	
2-Chloroethyl vinyl ether	0.25	N.D.	
Chloroform	0.25	N.D.	
Chloromethane	0.25	N.D.	
1,2-Dichlorobenzene	0.25	N.D.	
1,3-Dichlorobenzene	0.25	N.D.	
1,4-Dichlorobenzene	0.25	N.D.	
1,1-Dichloroethane	0.25	N.D.	
1,2-Dichloroethane	0.25	N.D.	
1,1-Dichloroethene	0.25	N.D.	
Trans 1,2-Dichloroethene	0.25	N.D.	
1,2-Dichloropropane	0.25	N.D.	
cis-1,3-Dichloropropene	0.25	N.D.	
trans-1,3-Dichloropropene	0.25	N.D.	
Methylene chloride	0.25	N.D.	
1,1,2,2-Tetrachloroethane	0.25	N.D.	
Tetrachloroethene	0.25	32	<---
1,1,1-Trichloroethane	0.25	N.D.	
1,1,2-Trichloroethane	0.25	N.D.	
Trichloroethene	0.25	40	<---
Trichlorofluoromethane	0.25	N.D.	
Vinyl chloride	0.25	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani

Mark Noorani
Laboratory Director

Applied Geosciences Inc.

Chain of Custody

29B Technology Drive, Suite 100
Irvine, California 92718
(714) 453-8545
(714) 453-0510 FAX

Project Name: AEI

Project Number: A9019 79F, Stockton

Project Manager: WW

Laboratory Name: Orange Coast

Method of Shipment: AGI

Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other (Vapor)	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270	EPA 8010				
AEI-VW1-IN14			1/3/95			✓										✓				
						40	2													1-8-95

Remarks:

* Results to Thanh Hoang in ug/L.

Turnaround Time

- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- ~~Standard~~ 5 to 10 Business Days ☐
- Other ___ Business Days ☐

Relinquished by sampler: Douglas A. Johnson	Date: 1-5-95	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by laboratory: Dawn Conlen — Date: 1/5/95 — Time: 16:55

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

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FAX TRANSMITTAL

DATE: February 16, 1995

COMPANY: Applied Geoscience

ATTENTION: Mr. Thang Hoang

FROM: Mark Noorani

PAGES: COVER + 1

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THANK YOU.

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Thanh Hoang
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978F

Sample Description: Air, AEI-VW1-IN15
Laboratory Sample #: 95010820
Laboratory Reference #: AGI 5300

Sampled : 01-31-95
Received: 01-31-95
Analyzed: 02-01-95
Reported: 02-02-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Bromodichloromethane	0.25	N.D.	
Bromoform	0.25	N.D.	
Bromomethane	0.25	N.D.	
Carbon tetrachloride	0.25	N.D.	
Chlorobenzene	0.25	N.D.	
Chlorodibromomethane	0.25	N.D.	
Chloroethane	0.25	N.D.	
2-Chloroethyl vinyl ether	0.25	N.D.	
Chloroform	0.25	N.D.	
Chloromethane	0.25	N.D.	
1,2-Dichlorobenzene	0.25	N.D.	
1,3-Dichlorobenzene	0.25	N.D.	
1,4-Dichlorobenzene	0.25	N.D.	
1,1-Dichloroethane	0.25	N.D.	
1,2-Dichloroethane	0.25	N.D.	
1,1-Dichloroethene	0.25	N.D.	
Trans 1,2-Dichloroethene	0.25	N.D.	
1,2-Dichloropropane	0.25	N.D.	
cis-1,3-Dichloropropene	0.25	N.D.	
trans-1,3-Dichloropropene	0.25	N.D.	
Methylene chloride	0.25	N.D.	
1,1,2,2-Tetrachloroethane	0.25	N.D.	
Tetrachloroethene	0.25	13	<---
1,1,1-Trichloroethane	0.25	N.D.	
1,1,2-Trichloroethane	0.25	N.D.	
Trichloroethene	0.25	11	<---
Trichlorofluoromethane	0.25	N.D.	
Vinyl chloride	0.25	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
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Applied Geosciences, Inc.
ATTN: Mr. Thanh Hoang
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978F

Sample Description: Air, AEI-VW1-IN-12
Laboratory Sample #: 94110888
Laboratory Reference #: AGI 4861

Sampled : 11-22-94
Received: 11-22-94
Analyzed: 11-23-94
Reported: 11-28-94

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Bromodichloromethane	0.25	N.D.	
Bromoform	0.25	N.D.	
Bromomethane	0.25	N.D.	
Carbon tetrachloride	0.25	N.D.	
Chlorobenzene	0.25	N.D.	
Chlorodibromomethane	0.25	N.D.	
Chloroethane	0.25	N.D.	
2-Chloroethyl vinyl ether	0.25	N.D.	
Chloroform	0.25	N.D.	
Chloromethane	0.25	N.D.	
1,2-Dichlorobenzene	0.25	N.D.	
1,3-Dichlorobenzene	0.25	N.D.	
1,4-Dichlorobenzene	0.25	N.D.	
1,1-Dichloroethane	0.25	N.D.	
1,2-Dichloroethane	0.25	N.D.	
1,1-Dichloroethene	0.25	N.D.	
Trans 1,2-Dichloroethene	0.25	N.D.	
1,2-Dichloropropane	0.25	N.D.	
cis-1,3-Dichloropropene	0.25	N.D.	
trans-1,3-Dichloropropene	0.25	N.D.	
Methylene chloride	0.25	N.D.	
1,1,2,2-Tetrachloroethane	0.25	N.D.	
Tetrachloroethene	0.25	110	<---
1,1,1-Trichloroethane	0.25	N.D.	
1,1,2-Trichloroethane	0.25	N.D.	
Trichloroethene	0.25	92	<---
Trichlorofluoromethane	0.25	N.D.	
Vinyl chloride	0.25	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

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Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Thanh Hoang
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978F

Sample Description: Carbon, AEI-Carbon 1
Laboratory Sample #: 94110889
Laboratory Reference #: AGI 4861

Sampled : 11-22-94
Received: 11-22-94
Analyzed: 11-23-94
Reported: 11-28-94

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*
Bromodichloromethane	10,000	N.D.
Bromoform	10,000	N.D.
Bromomethane	10,000	N.D.
Carbon tetrachloride	10,000	N.D.
Chlorobenzene	10,000	N.D.
Chlorodibromomethane	10,000	N.D.
Chloroethane	20,000	N.D.
2-Chloroethyl vinyl ether	50,000	N.D.
Chloroform	10,000	N.D.
Chloromethane	20,000	N.D.
1,2-Dichlorobenzene	20,000	N.D.
1,3-Dichlorobenzene	20,000	N.D.
1,4-Dichlorobenzene	20,000	N.D.
1,1-Dichloroethane	10,000	N.D.
1,2-Dichloroethane	10,000	N.D.
1,1-Dichloroethene	10,000	N.D.
Trans 1,2-Dichloroethene	10,000	N.D.
1,2-Dichloropropane	10,000	N.D.
cis-1,3-Dichloropropene	10,000	N.D.
trans-1,3-Dichloropropene	40,000	N.D.
Methylene chloride	50,000	N.D.
1,1,2,2-Tetrachloroethane	10,000	N.D.
Tetrachloroethene	10,000	N.D.
1,1,1-Trichloroethane	10,000	N.D.
1,1,2-Trichloroethane	10,000	N.D.
Trichloroethene	10,000	5,900,000
Trichloroflouromethane	10,000	N.D.
Vinyl chloride	10,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

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Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*92*

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Q C D A T A R E P O R T

Analysis: Volatile Organic Compounds (EPA 8010)

Date of Analysis: 11/23/94

Laboratory Sample No: OCA 200

Laboratory Reference No: AGI 4861

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
1,1-Dichloroethane	0.0	20	19	19	95	95	0
Trichloroethene	0.0	20	20	19	100	95	5
Tetrachloroethene	0.0	20	17	16	85	80	6

Definition of Terms:

R1 Results of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery of MS: {(MS - R1) / SP } X 100

PR2 Percent Recovery of MSD: {(MSD - R1) / SP } X 100

RPD Relative Percent Difference: {(MS - MSD)/(MS + MSD)} X 2 X 100

ORANGE COAST ANALYTICAL

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Laboratory Director

Applied Geosciences Inc.

Chain of Custody

29B Technology Drive, Suite 100
Irvine, California 92718
(714) 453-8545
(714) 453-0510 FAX

Project Name: AEI
Project Number: #201978F
Project Manager: MW

Laboratory Name: Orange Coast
Method of Shipment: AGT
Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil (CARBON)	Matrix: Water	Matrix: Other (VAPOR)	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270	EPA 8015			- 11
AEI-VW1-1112			11/22/24			✓										✓			
AEI-CARBON1			11/22/24	✓												✓			

Remarks:
* Results to
Thank Hanna
in Mgt.!

Turnaround Time
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☐
- Other ___ Business Days ☐

Relinquished by sampler	Date	Time	Received by
	11-22-24		
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory
			Date: 11-22-24 Time: 3:45

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-6
Laboratory Sample #: 95020508
Laboratory Reference #: AGI 5408

Sampled : 02-15-95
Received: 02-15-95
Analyzed: 02-22-95
Reported: 02-23-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	4.2	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	6.4	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	N.D.	
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	19	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*120*
1,4-Diclorobutane	*108*

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
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(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-4
Laboratory Sample #: 95020509
Laboratory Reference #: AGI 5408

Sampled : 02-15-95
Received: 02-15-95
Analyzed: 02-22-95
Reported: 02-23-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	2.3	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	6.4	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	N.D.	
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	10	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*118*
1,4-Diclorobutane	*116*

ORANGE COAST ANALYTICAL

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Laboratory Director

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(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-2
Laboratory Sample #: 95020510
Laboratory Reference #: AGI 5408

Sampled : 02-15-95
Received: 02-15-95
Analyzed: 02-22-95
Reported: 02-23-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	6.1	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	14	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	1.4	<---
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	33	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*117*
1,4-Diclorobutane	*112*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-3
Laboratory Sample #: 95020511
Laboratory Reference #: AGI 5408

Sampled : 02-15-95
Received: 02-15-95
Analyzed: 02-22-95
Reported: 02-23-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	9.2	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	26	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	1.9	<---
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	52	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*118*
1,4-Diclorobutane	*110*

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-F
Laboratory Sample #: 95020512
Laboratory Reference #: AGI 5408

Sampled : 02-15-95
Received: 02-15-95
Analyzed: 02-22-95
Reported: 02-23-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	3.8	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	7.0	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	N.D.	
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	21	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*119*
1,4-Diclorobutane	*114*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water

Laboratory Reference #: AGI 5408

Sampled : 02-15-95
Received: 02-15-95
Analyzed: 02-15-95
Reported: 02-23-95

TURBIDITY (EPA 180.1)

Laboratory Sample Number	*Client Sample Number*	*Sample Results NTU*
95020508	BP-6	N.D.
95020509	BP-4	N.D.
95020510	BP-2	N.D.
95020511	BP-3	N.D.
Detection Limit:		5.0

Analyte reported as N.D. was not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

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Q C D A T A R E P O R T

Analysis: TURBIDITY (EPA 180.1)

Date of Analysis: 02/15/95

Laboratory Sample No.: 95020511

Laboratory Reference No.: AGI 5408

Analyte	R1 (NTU)	SP (NTU)	MS (NTU)	MSD (NTU)	PR1 %	PR2 %	RPD %
Turbidity	0.0	40	42	40	105	100	5

Definition of Terms:

R1 Results of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery of MS: {(MS - R1) / SP } X 100

PR2 Percent Recovery of MSD: {(MSD - R1) / SP } X 100

RPD Relative Percent Difference: {(MS - MSD)/(MS + MSD)} X 100 X 2

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Q C D A T A R E P O R T

Analysis: Volatile Organic Compounds (EPA 8021)

Date of Analysis: 02/22/95

Laboratory Sample No: 95020509

Laboratory Reference No: AGI 5408

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
1,1-Dichloroethane	0.0	20	22	22	110	110	0
Trichloroethene	10.0	20	32	34	110	120	6
Tetrachloroethene	6.4	20	29	29	113	113	0
Benzene	0.0	20	21	21	105	105	0
Toluene	0.0	20	22	22	110	110	0

Definition of Terms:

R1 Results of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery of MS: {(MS - R1) / SP } X 100

PR2 Percent Recovery of MSD: {(MSD - R1) / SP } X 100

RPD Relative Percent Difference: {(MS - MSD)/(MS + MSD)} X 2 X 100

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Applied Geosciences Inc.

Chain of Custody

29B Technology Drive, Suite 100
Irvine, California 92718
(714) 453-8545
(714) 453-0510 FAX

Project Name: AMERICAN ELECTRONICS

Project Number: A901978F TASK 9

Project Manager: WILL WEAVER

Laboratory Name: ORANGE COAST

Method of Shipment: AGI

Special QA / QC: CALL WILL WEAVER FOR SPECIAL ANALYSES

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021 *	BNAs EPA 8270	180.1				*
BP-6			2/15		X									X		X				
BP-4														X		X				
BP-2														X		X				
BP-3														X		X				
BP-F			2/15		X									X						

Remarks

Turnaround Time

- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

Relinquished by sampler	Date	Time	Received by		
Douglas A [illegible]	2-15-95				
Relinquished by	Date	Time	Received by		
Relinquished by	Date	Time	Received by laboratory	Date	Time
			[illegible]	2-15-95	4:20

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Method Blank
Laboratory Sample #:
Laboratory Reference #: AGI 5408

Sampled : ---
Received: ---
Analyzed: 02-22-95
Reported: 02-23-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	N.D.
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	N.D.
Trichlorofluoromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*120*
1,4-Diclorobutane	*114*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
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FAX TRANSMITTAL

DATE: March 2, 1995

COMPANY: Applied Geoscience Science

ATTENTION: Mr. Will Weaver

FROM: Mark Noorani

PAGES: COVER + 6

PLEASE CONTACT US IF YOU DO NOT RECEIVE ENTIRE TRANSMITTAL.

THANK YOU.

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901970F

Sample Description: Water

Laboratory Reference #: AGI 5417

Sampled : 02-16-95
Received: 02-16-95
Analyzed: 02-16-95
Reported: 02-24-95

TURBIDITY (EPA 180.1)

Laboratory Sample Number	*Client Sample Number*	*Sample Results NTU*
95020563	BP-1	N.D.
95020564	BP-5	N.D.
95020565	BP-7	N.D.
95020566	BP-8	N.D.
Detection Limit:		5.0

Analyte reported as N.D. was not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-1
Laboratory Sample #: 95020563
Laboratory Reference #: AGI 5417

Sampled : 02-16-95
Received: 02-16-95
Analyzed: 02-22-95
Reported: 02-24-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	1.0	N.D.	
Bromodichloromethane	1.0	N.D.	
Bromoform	2.0	N.D.	
Bromomethane	2.0	N.D.	
Carbon tetrachloride	2.0	N.D.	
Chlorobenzene	2.0	N.D.	
Chlorodibromomethane	1.0	N.D.	
Chloroethane	2.0	N.D.	
2-Chloroethyl vinyl ether	10	N.D.	
Chloroform	1.0	N.D.	
Chloromethane	2.0	N.D.	
1,2-Dichlorobenzene	2.0	N.D.	
1,3-Dichlorobenzene	2.0	N.D.	
1,4-Dichlorobenzene	2.0	N.D.	
1,1-Dichloroethane	1.0	N.D.	
1,2-Dichloroethane	1.0	N.D.	
1,1-Dichloroethene	1.0	5.6	<---
Trans 1,2-Dichloroethene	2.0	N.D.	
1,2-Dichloropropane	2.0	N.D.	
cis-1,3-Dichloropropene	2.0	N.D.	
trans-1,3-Dichloropropene	2.0	N.D.	
Ethylbenzene	1.0	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	2.0	N.D.	
Tetrachloroethene	1.0	5.1	<---
Toluene	1.0	N.D.	
1,1,1-Trichloroethane	1.0	N.D.	
1,1,2-Trichloroethane	2.0	N.D.	
Trichloroethene	1.0	72	<---
Trichlorofluoromethane	4.0	N.D.	
Vinyl chloride	2.0	N.D.	
Total Xylenes	1.0	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*112*
1,4-Diclorobutane	*110*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-5
Laboratory Sample #: 95020564
Laboratory Reference #: AGI 5417

Sampled : 02-16-95
Received: 02-16-95
Analyzed: 02-23-95
Reported: 02-24-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	2.5	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	6.9	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	N.D.	
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	8.6	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-Trifluorotoluene	*114*
1,4-Diclorobutane	*100*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-7
Laboratory Sample #: 95020565
Laboratory Reference #: AGI 5417

Sampled : 02-16-95
Received: 02-16-95
Analyzed: 02-22-95
Reported: 02-24-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	3.7	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	6.5	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	N.D.	
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	16	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*111*
1,4-Diclorobutane	*94*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-8
Laboratory Sample #: 95020566
Laboratory Reference #: AGI 5417

Sampled : 02-16-95
Received: 02-16-95
Analyzed: 02-22-95
Reported: 02-24-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*	
Benzene	1.0	N.D.	
Bromodichloromethane	1.0	N.D.	
Bromoform	2.0	N.D.	
Bromomethane	2.0	N.D.	
Carbon tetrachloride	2.0	N.D.	
Chlorobenzene	2.0	N.D.	
Chlorodibromomethane	1.0	N.D.	
Chloroethane	2.0	N.D.	
2-Chloroethyl vinyl ether	10	N.D.	
Chloroform	1.0	N.D.	
Chloromethane	2.0	N.D.	
1,2-Dichlorobenzene	2.0	N.D.	
1,3-Dichlorobenzene	2.0	N.D.	
1,4-Dichlorobenzene	2.0	N.D.	
1,1-Dichloroethane	1.0	N.D.	
1,2-Dichloroethane	1.0	N.D.	
1,1-Dichloroethene	1.0	4.6	<---
Trans 1,2-Dichloroethene	2.0	N.D.	
1,2-Dichloropropane	2.0	N.D.	
cis-1,3-Dichloropropene	2.0	N.D.	
trans-1,3-Dichloropropene	2.0	N.D.	
Ethylbenzene	1.0	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	2.0	N.D.	
Tetrachloroethene	1.0	5.2	<---
Toluene	1.0	N.D.	
1,1,1-Trichloroethane	1.0	N.D.	
1,1,2-Trichloroethane	2.0	N.D.	
Trichloroethene	1.0	64	<---
Trichlorofluoromethane	4.0	N.D.	
Vinyl chloride	2.0	N.D.	
Total Xylenes	1.0	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*112*
1,4-Diclorobutane	*96*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Water, BP-E
Laboratory Sample #: 95020567
Laboratory Reference #: AGI 5417

Sampled : 02-16-95
Received: 02-16-95
Analyzed: 02-22-95
Reported: 02-24-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT* ug/l	*SAMPLE RESULTS* ug/l	
Benzene	0.5	N.D.	
Bromodichloromethane	0.5	N.D.	
Bromoform	1.0	N.D.	
Bromomethane	1.0	N.D.	
Carbon tetrachloride	1.0	N.D.	
Chlorobenzene	1.0	N.D.	
Chlorodibromomethane	0.5	N.D.	
Chloroethane	1.0	N.D.	
2-Chloroethyl vinyl ether	5.0	N.D.	
Chloroform	0.5	N.D.	
Chloromethane	1.0	N.D.	
1,2-Dichlorobenzene	1.0	N.D.	
1,3-Dichlorobenzene	1.0	N.D.	
1,4-Dichlorobenzene	1.0	N.D.	
1,1-Dichloroethane	0.5	N.D.	
1,2-Dichloroethane	0.5	N.D.	
1,1-Dichloroethene	0.5	2.6	<---
Trans 1,2-Dichloroethene	1.0	N.D.	
1,2-Dichloropropane	1.0	N.D.	
cis-1,3-Dichloropropene	1.0	N.D.	
trans-1,3-Dichloropropene	1.0	N.D.	
Ethylbenzene	0.5	N.D.	
Methylene chloride	2.0	N.D.	
1,1,2,2-Tetrachloroethane	1.0	N.D.	
Tetrachloroethene	0.5	6.8	<---
Toluene	0.5	N.D.	
1,1,1-Trichloroethane	0.5	N.D.	
1,1,2-Trichloroethane	1.0	N.D.	
Trichloroethene	0.5	8.8	<---
Trichlorofluoromethane	2.0	N.D.	
Vinyl chloride	1.0	N.D.	
Total Xylenes	0.5	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Surrogate Recovery	%
alpha, alpha, alpha-trifluorotoluene	111
1,4-Diclorobutane	114

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
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Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: American Electronics
Client Project #: A901978F Task 9

Sample Description: Method Blank
Laboratory Sample #:
Laboratory Reference #: AGI 5417

Sampled : ---
Received: ---
Analyzed: 02-22-95
Reported: 02-24-95

VOLATILE ORGANIC COMPOUNDS (EPA 8021)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	1.0	N.D.
Bromodichloromethane	1.0	N.D.
Bromoform	2.0	N.D.
Bromomethane	2.0	N.D.
Carbon tetrachloride	2.0	N.D.
Chlorobenzene	2.0	N.D.
Chlorodibromomethane	1.0	N.D.
Chloroethane	2.0	N.D.
2-Chloroethyl vinyl ether	10	N.D.
Chloroform	1.0	N.D.
Chloromethane	2.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
1,1-Dichloroethane	1.0	N.D.
1,2-Dichloroethane	1.0	N.D.
1,1-Dichloroethene	1.0	N.D.
Trans 1,2-Dichloroethene	2.0	N.D.
1,2-Dichloropropane	2.0	N.D.
cis-1,3-Dichloropropene	2.0	N.D.
trans-1,3-Dichloropropene	2.0	N.D.
Ethylbenzene	1.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	2.0	N.D.
Tetrachloroethene	1.0	N.D.
Toluene	1.0	N.D.
1,1,1-Trichloroethane	1.0	N.D.
1,1,2-Trichloroethane	2.0	N.D.
Trichloroethene	1.0	N.D.
Trichlorofluoromethane	4.0	N.D.
Vinyl chloride	2.0	N.D.
Total Xylenes	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	*%*
alpha, alpha, alpha-trifluorotoluene	*117*
1,4-Diclorobutane	*104*

ORANGE COAST ANALYTICAL

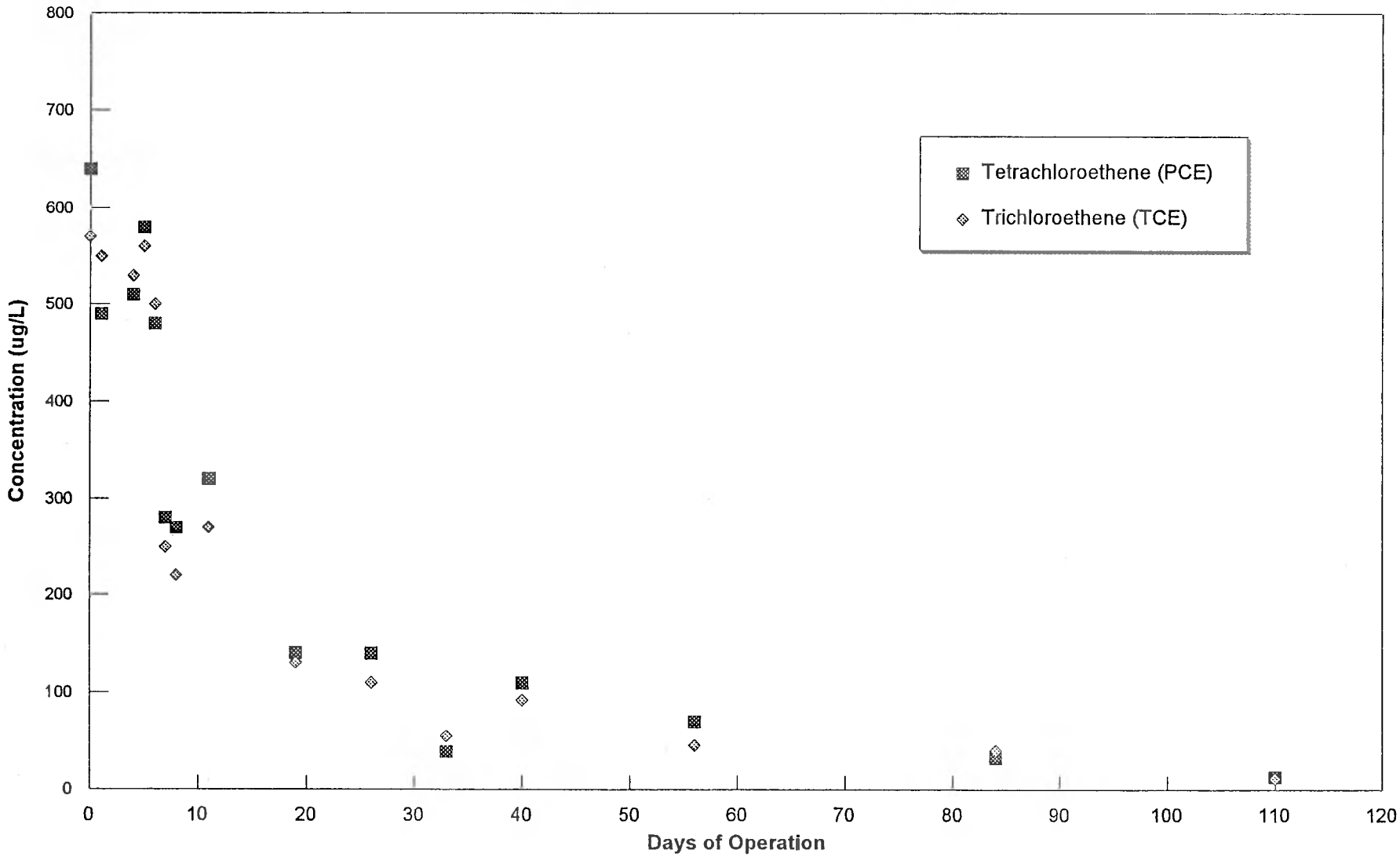
Mark Noorani
Laboratory Director

APPENDIX B

GRAPHS:
PCE & TCE VAPOR CONCENTRATIONS -VS- TIME
ESTIMATED VES PERFORMANCE (VOC MASS REMOVAL)
GROUNDWATER ELEVATIONS -VS- TIME
PCE AND TCE GROUNDWATER CONCENTRATIONS -VS- TIME

GRAPH 1

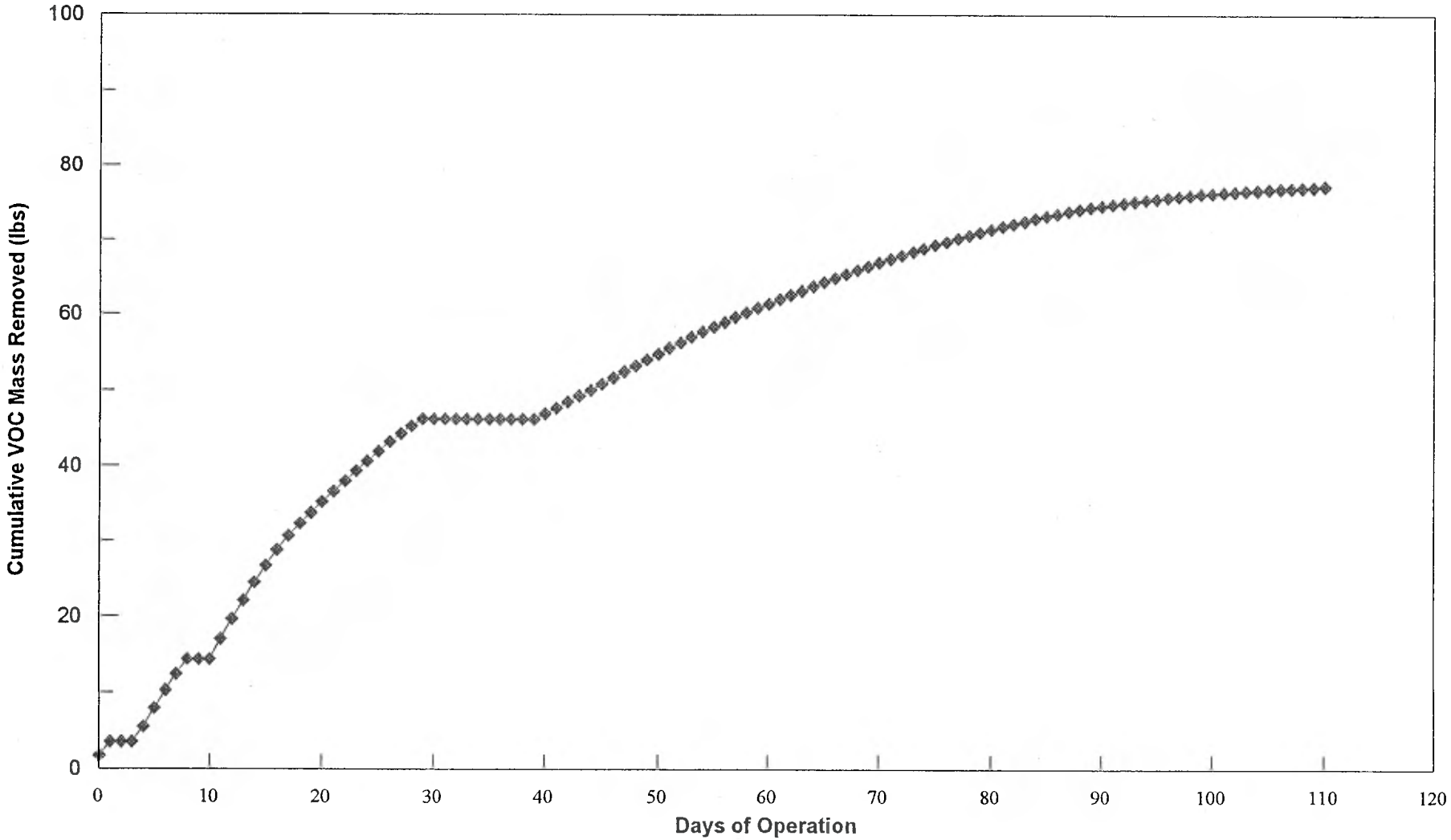
PCE & TCE Concentrations -vs- Time



American Electronics VES
Applied Geosciences Inc. A901978F

GRAPH 2

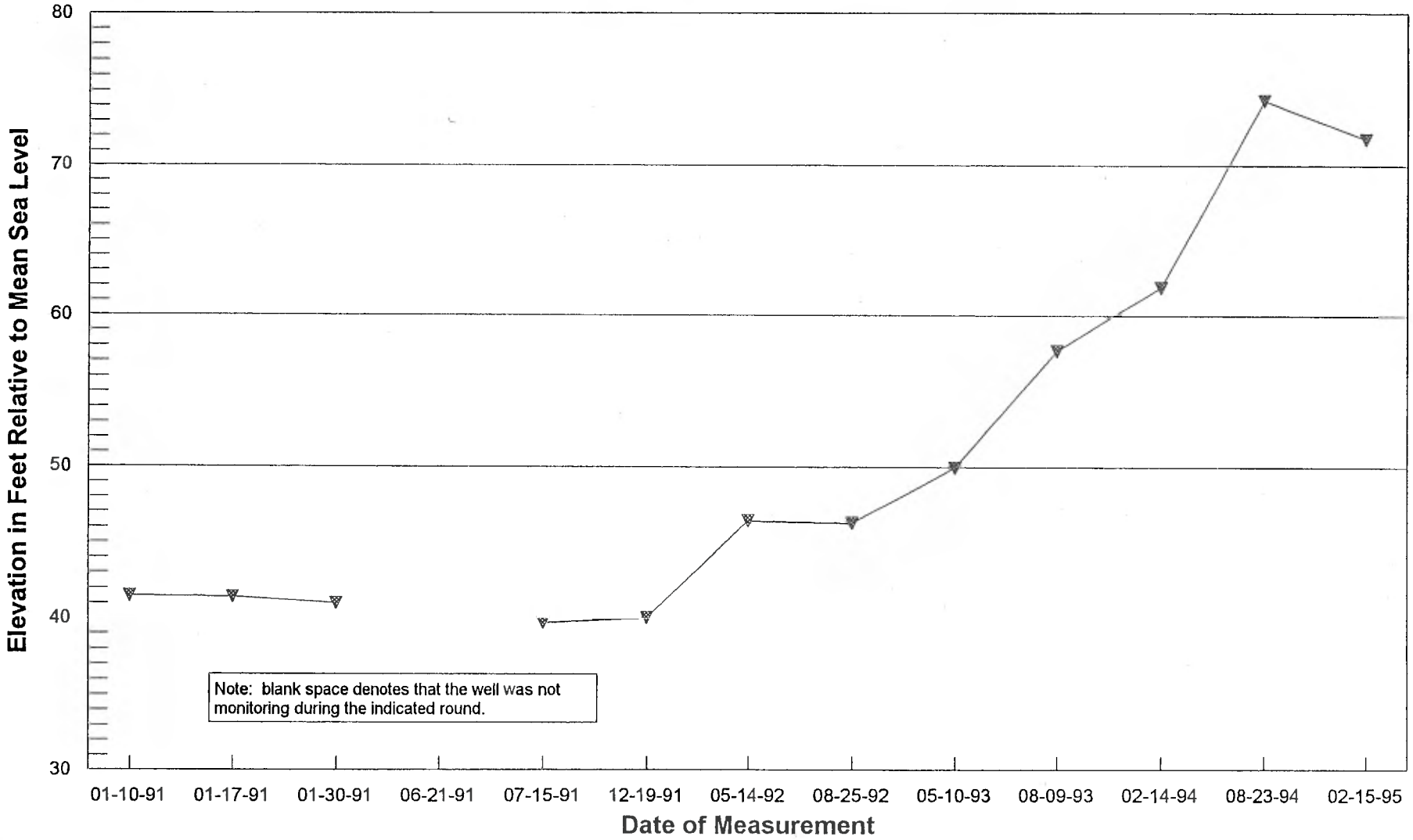
Estimated VES Performance (VOC Mass Removal)



American Electronics VES
Applied Geosciences Inc. A901978F

GRAPH 3

Well BP-1 Groundwater Elevations -vs- Time

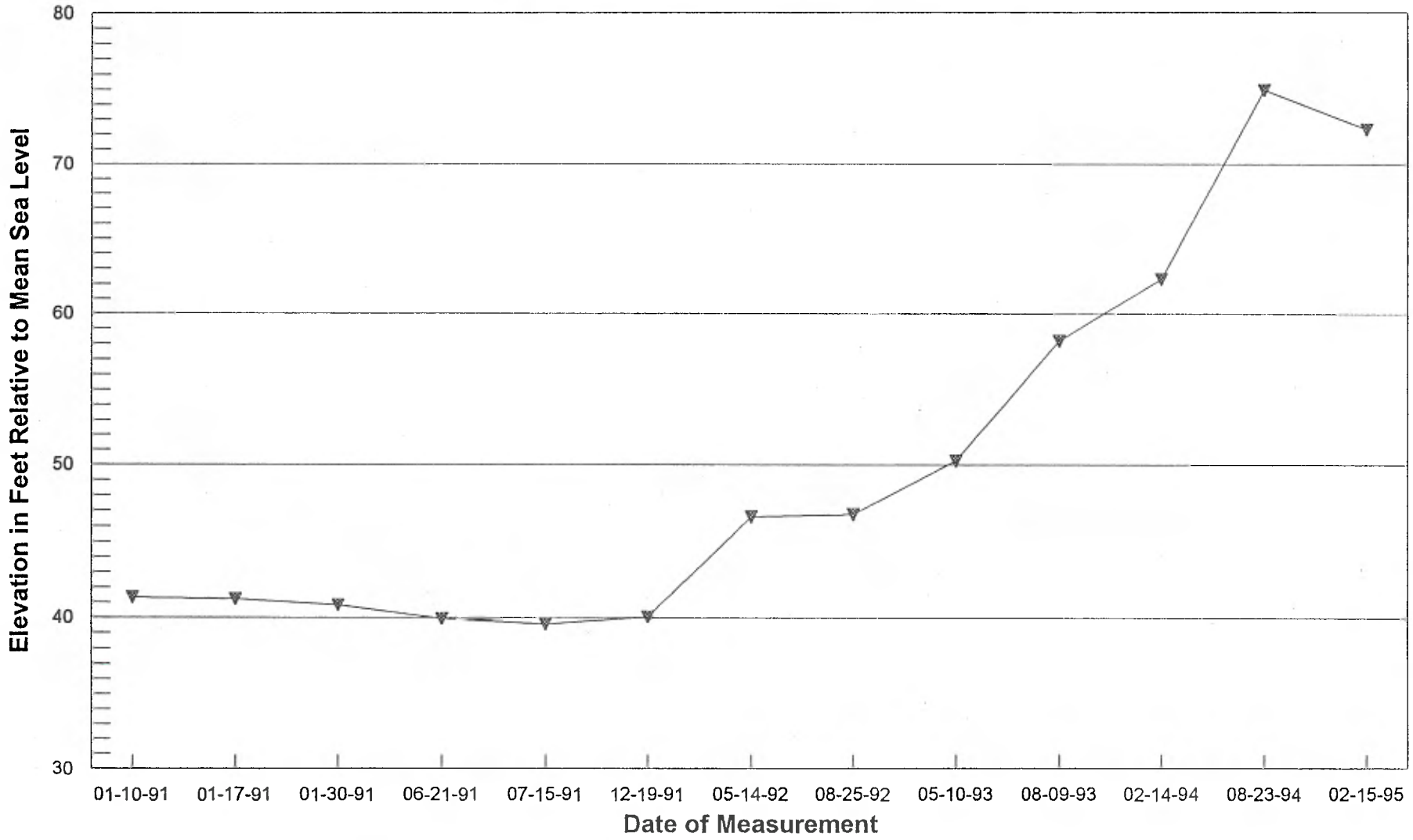


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 4

Well BP-2 Groundwater Elevations -vs- Time



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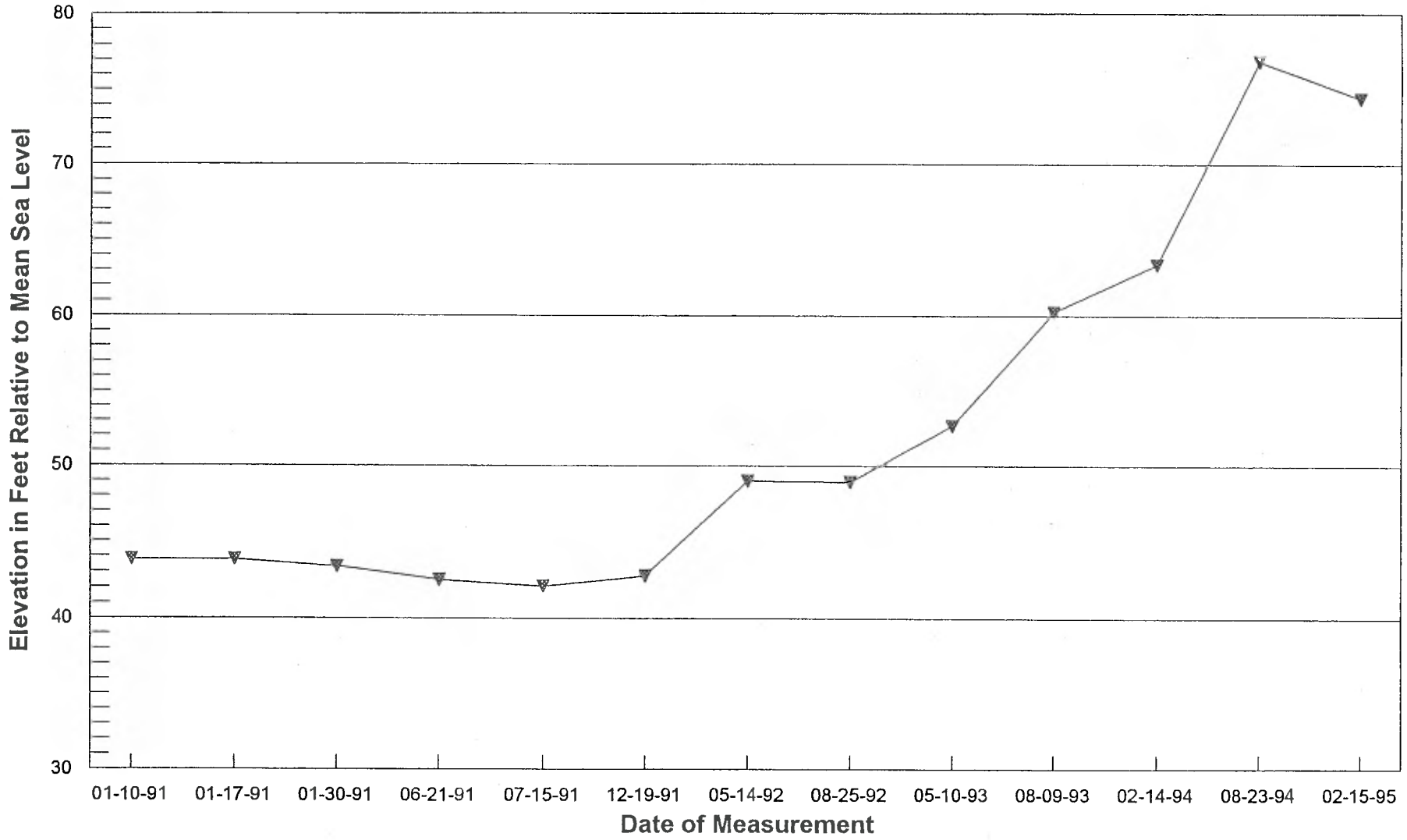
February 1995 Monitoring Round

GRAPH 5

Well BP-3 Groundwater Elevations -vs- Time



APPLIED GEOSCIENCES INC. A901978F

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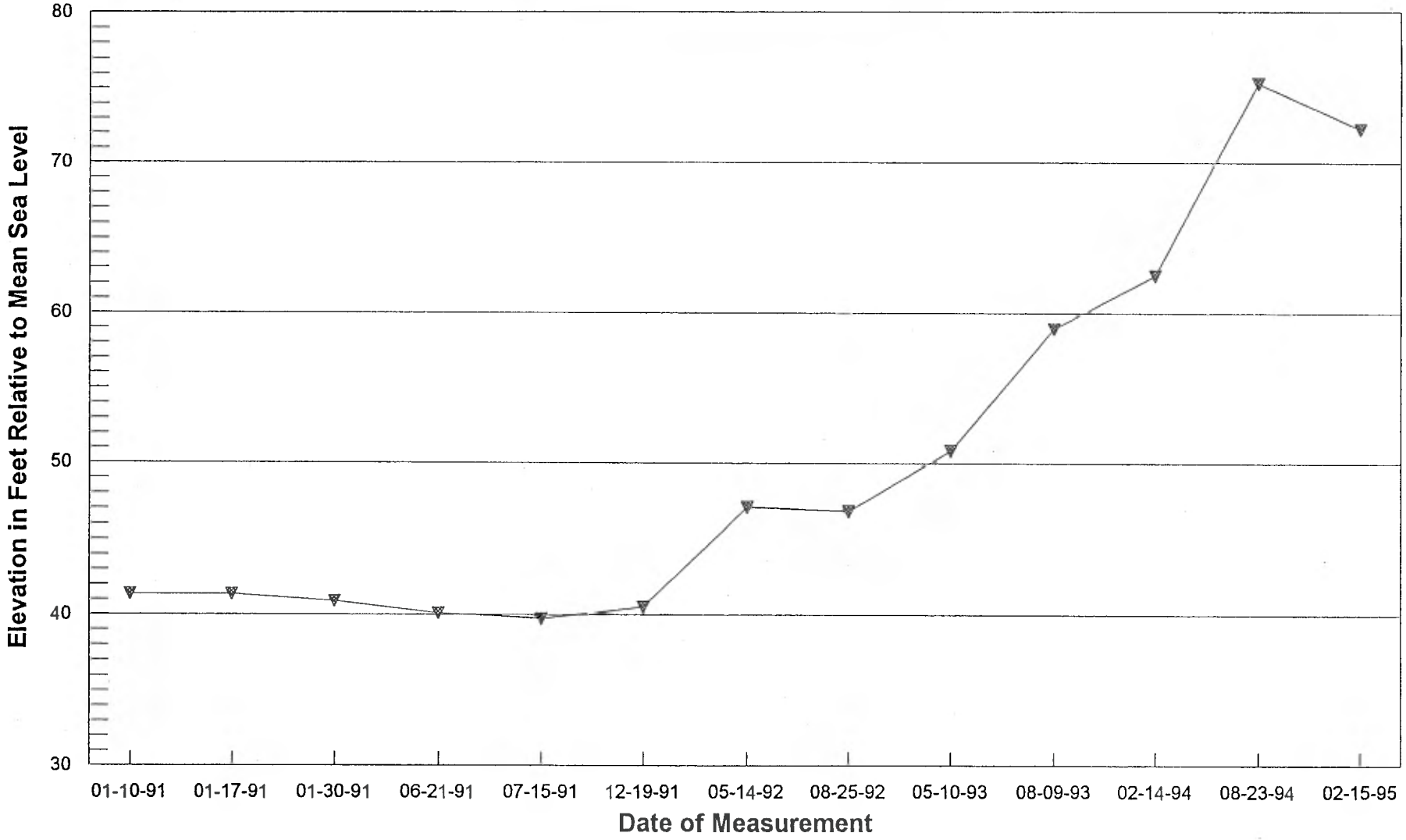
GRAPH 6

Well BP-4 Groundwater Elevations -vs- Time

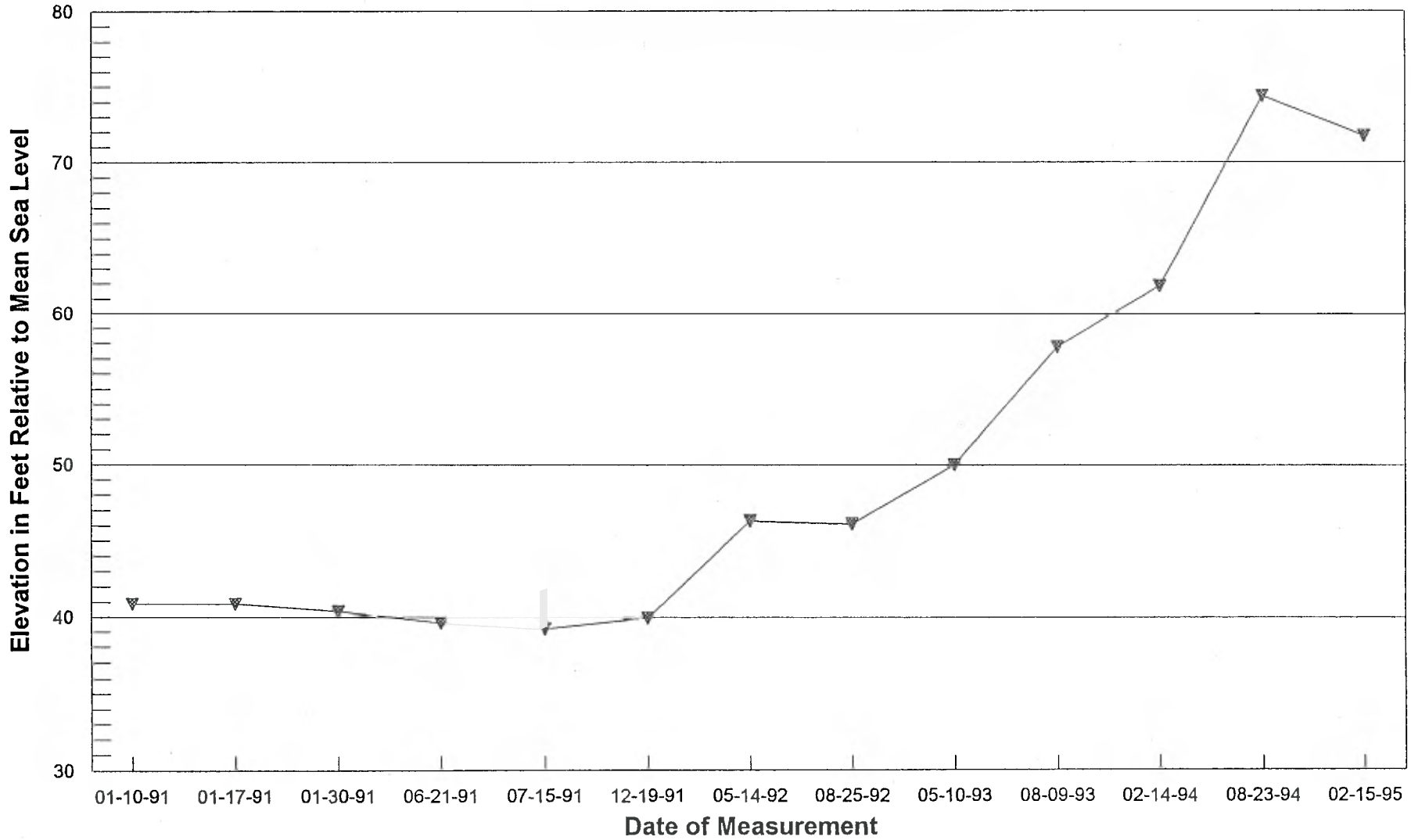


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 7

Well BP-5 Groundwater Elevations -vs- Time

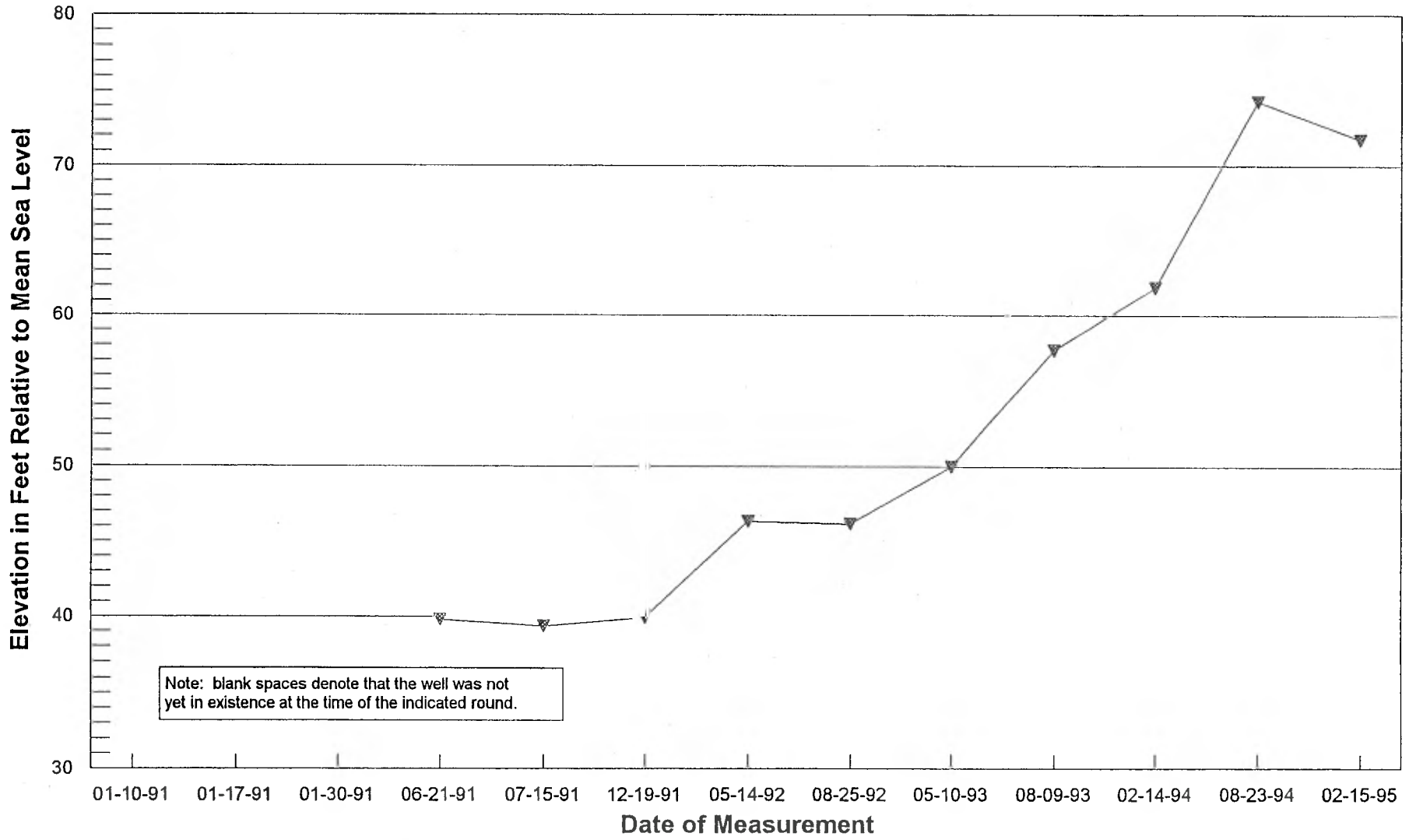


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 8

Well BP-6 Groundwater Elevations -vs- Time



APPLIED GEOSCIENCES INC. A901978F

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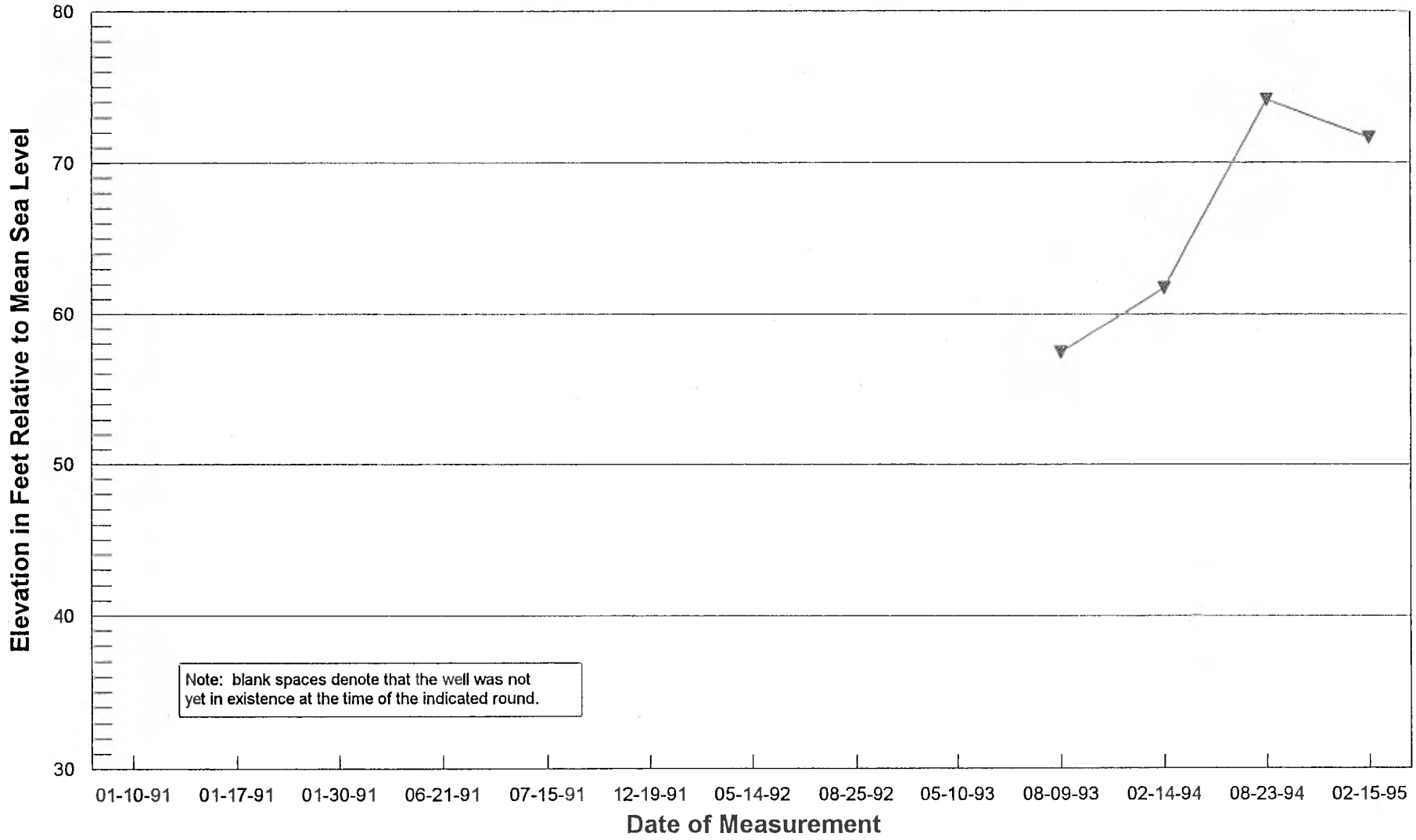
GRAPH 9

Well BP-7 Groundwater Elevations -vs- Time

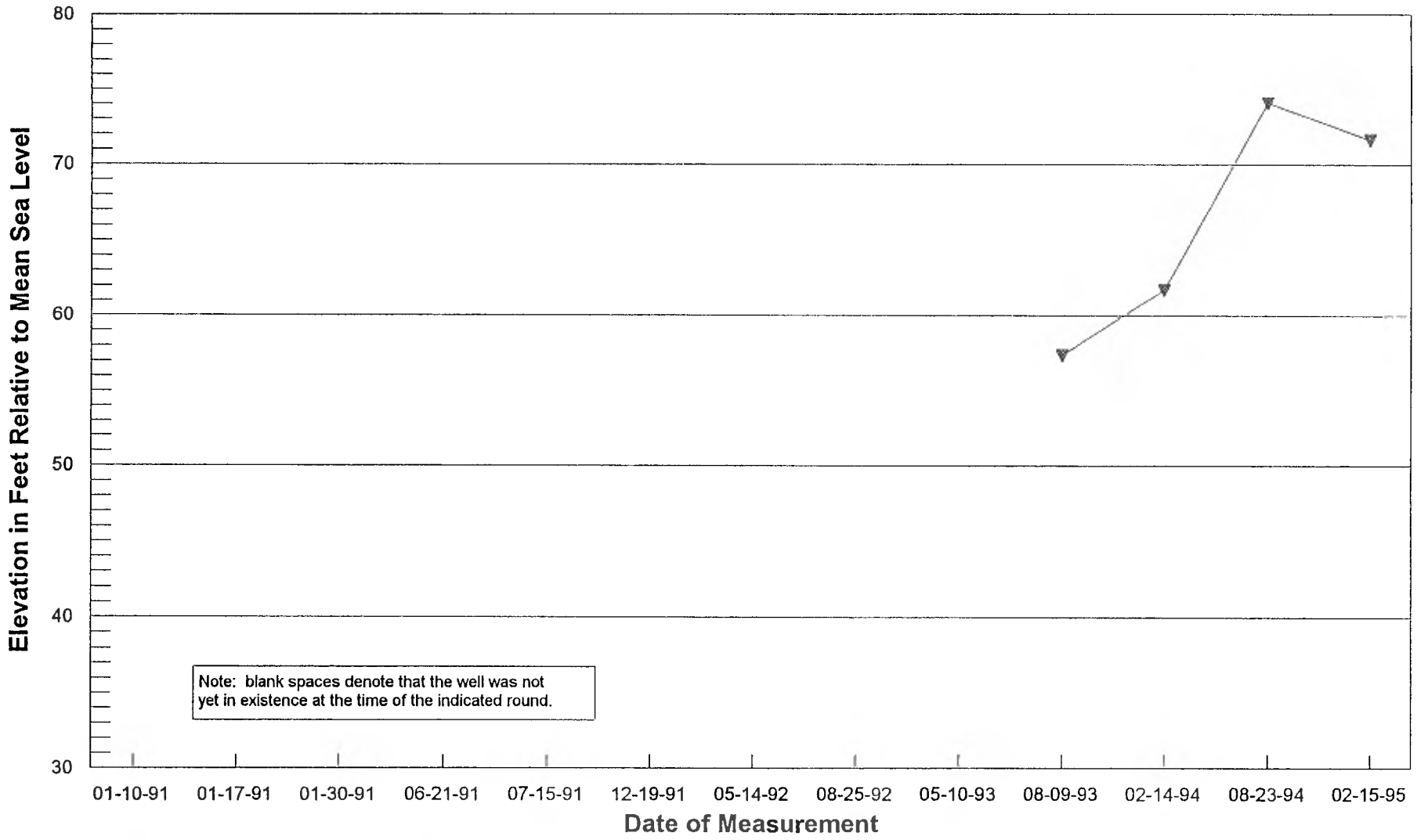


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 10

Well BP-8 Groundwater Elevations -vs- Time

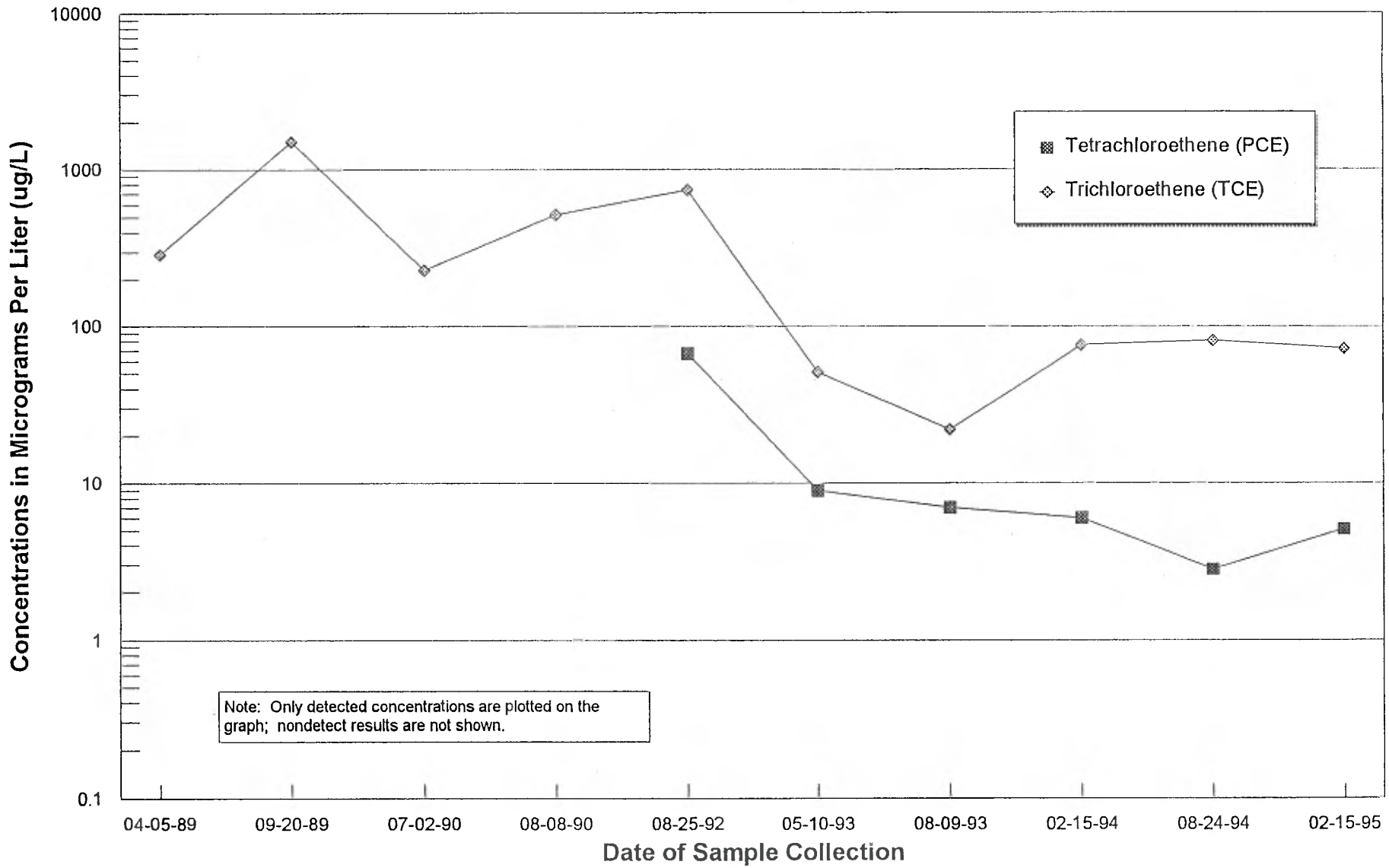


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 11

Well BP-1 PCE & TCE Concentrations -vs- Time

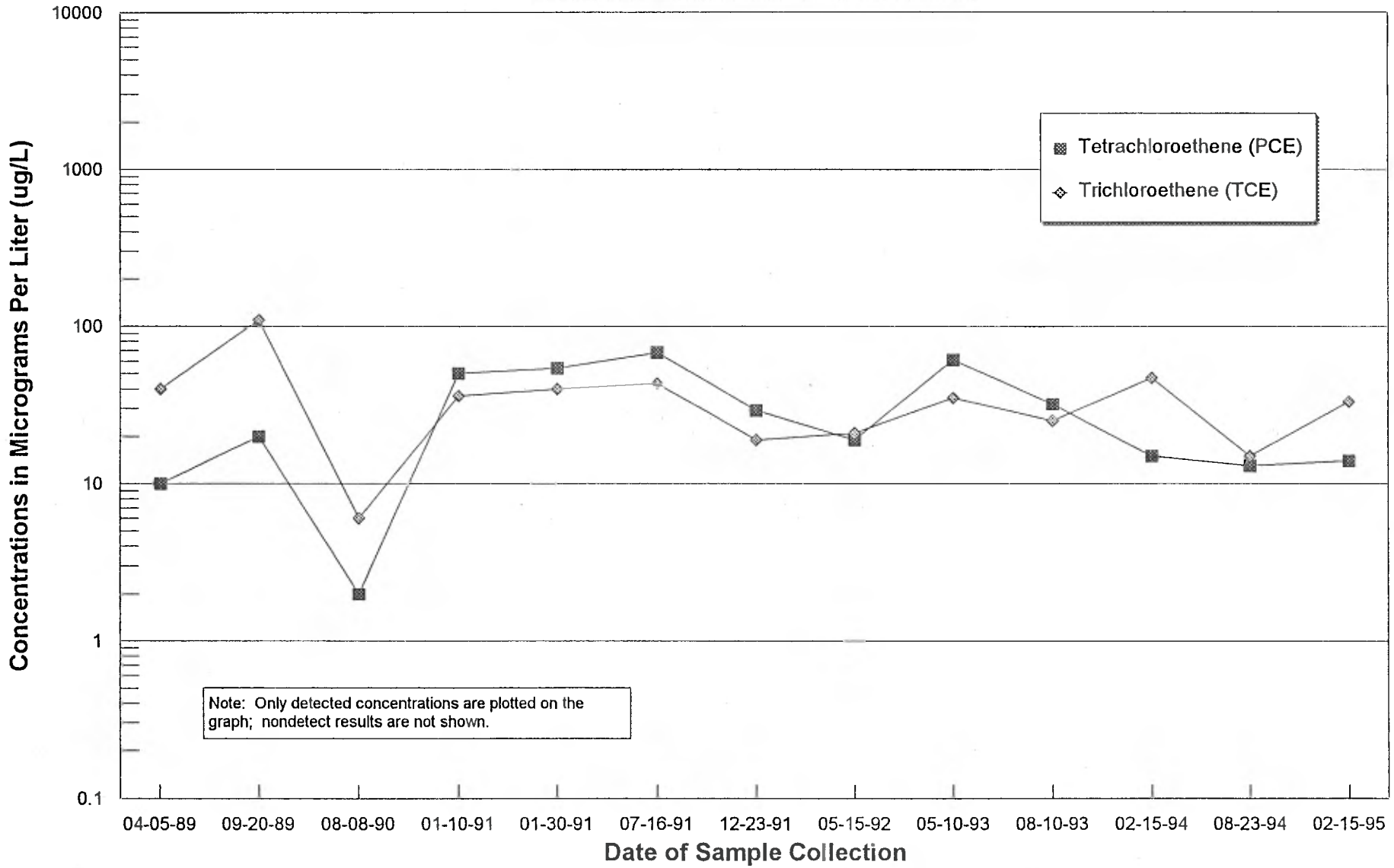


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 12

Well BP-2 PCE & TCE Concentrations -vs- Time

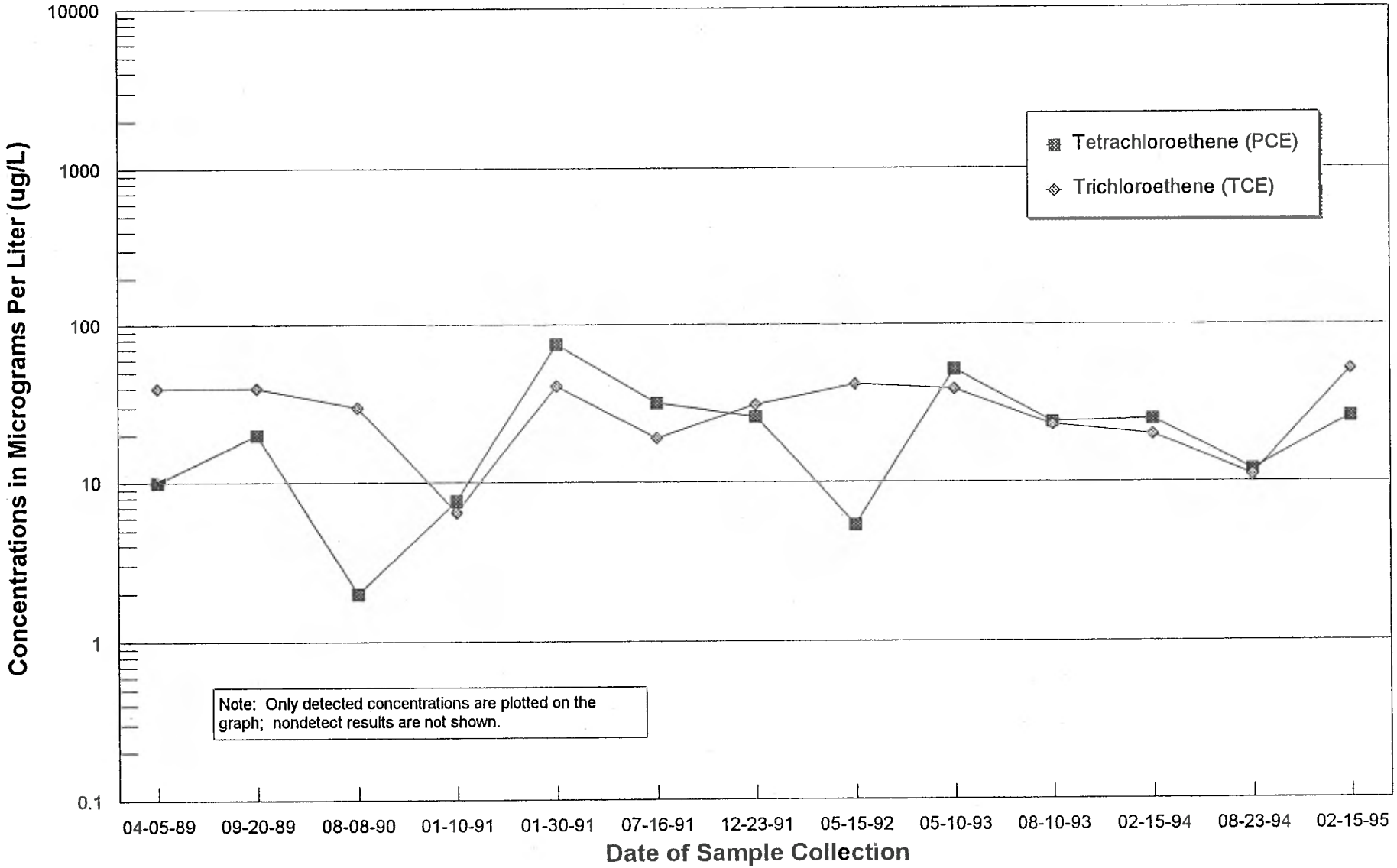


APPLIED GEOSCIENCES INC. **A901978F**

February 1995 Monitoring Round

GRAPH 13

Well BP-3 PCE & TCE Concentrations -vs- Time

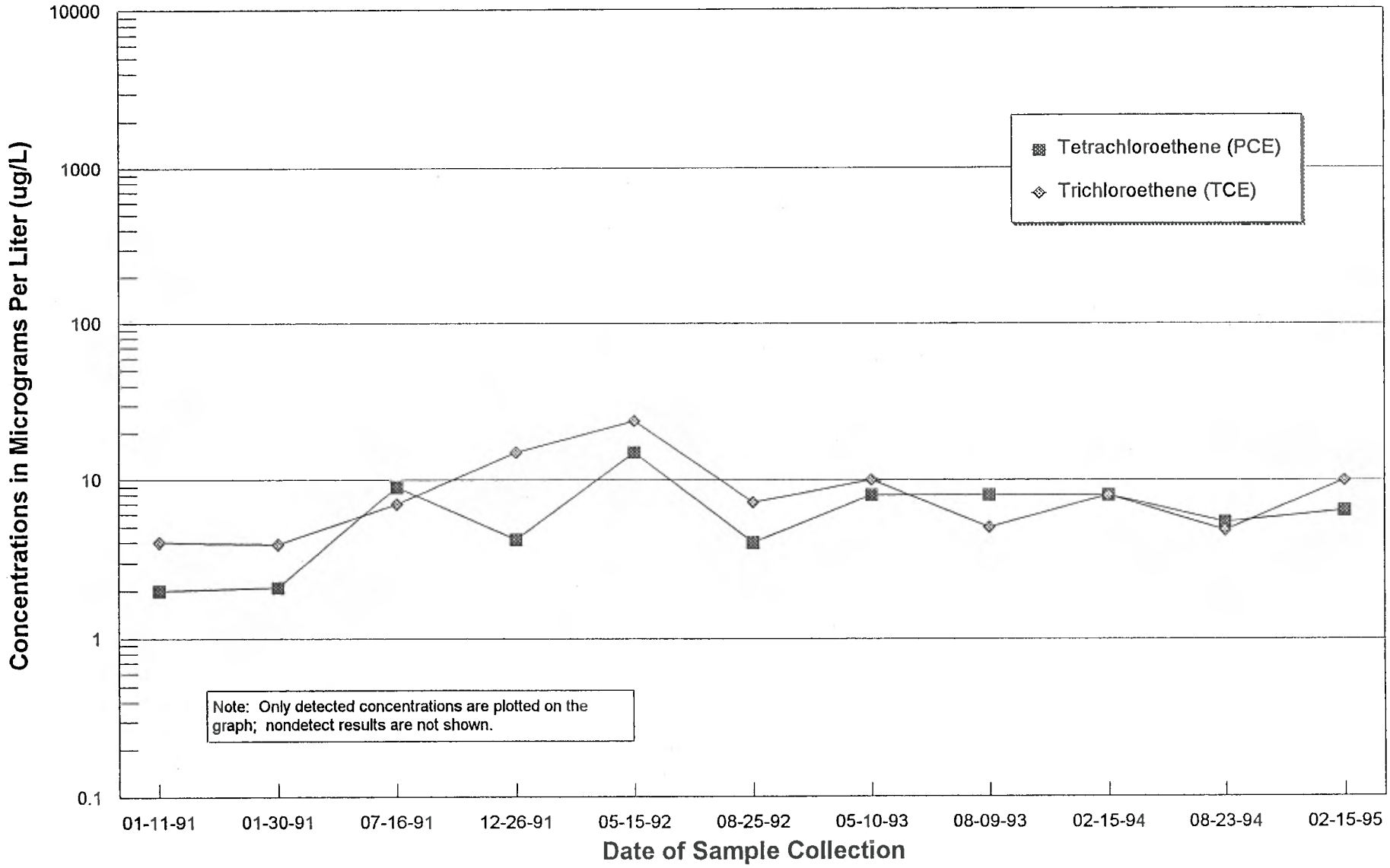


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 14

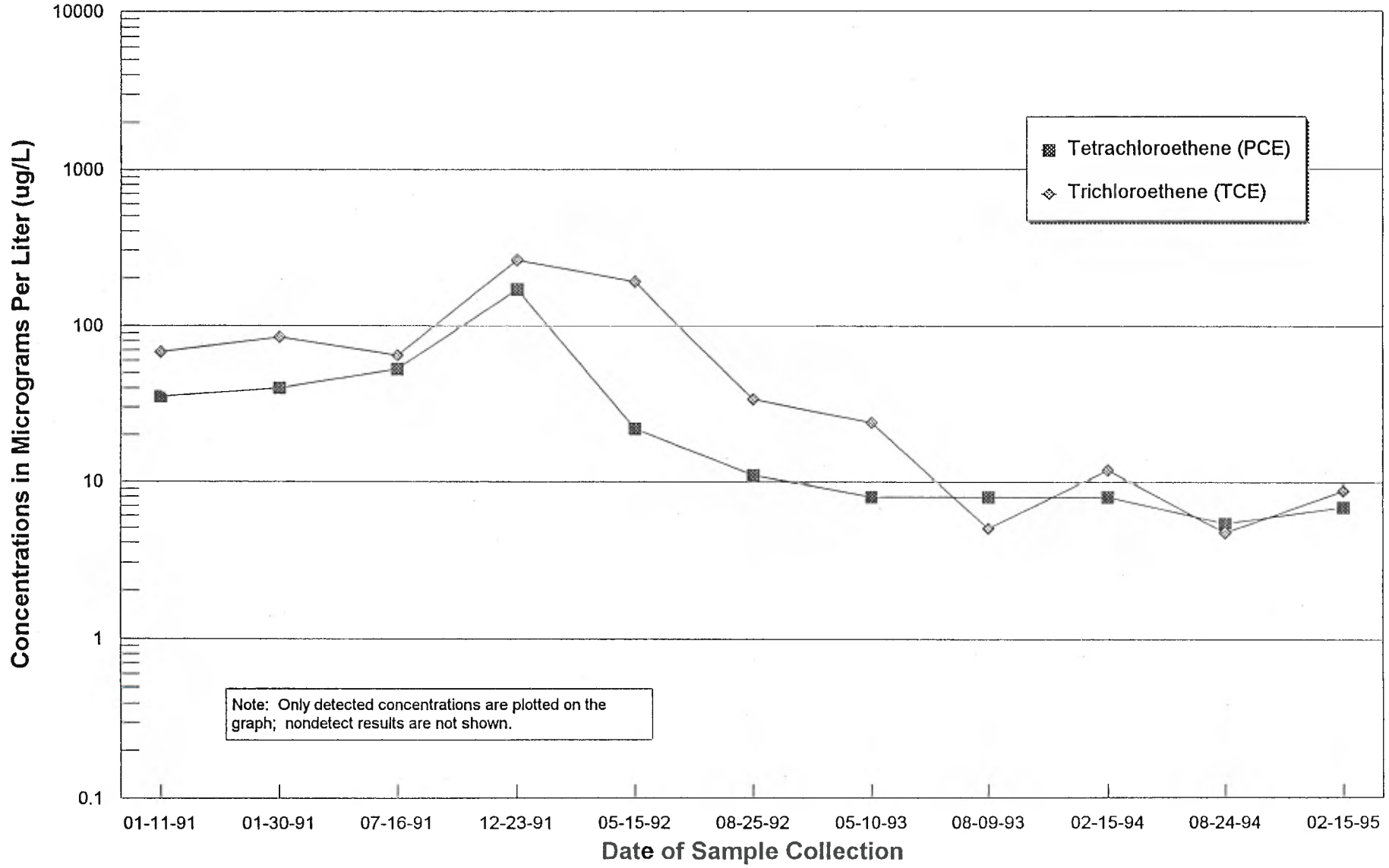
Well BP-4 PCE & TCE Concentrations -vs- Time



APPLIED GEOSCIENCES INC. A901978F
February 1995 Monitoring Round

GRAPH 15

Well BP-5 PCE & TCE Concentrations -vs- Time

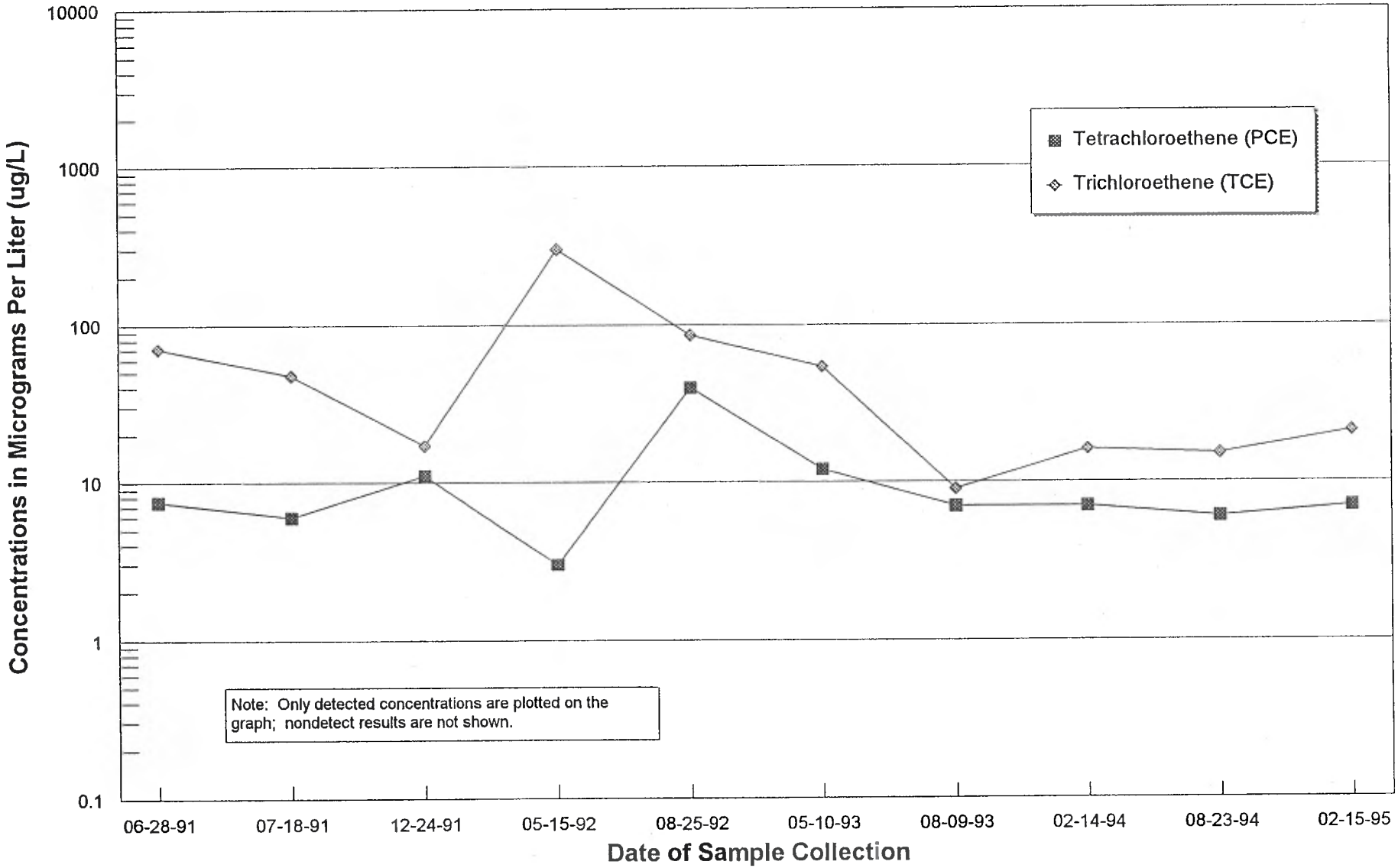


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 16

Well BP-6 PCE & TCE Concentrations -vs- Time

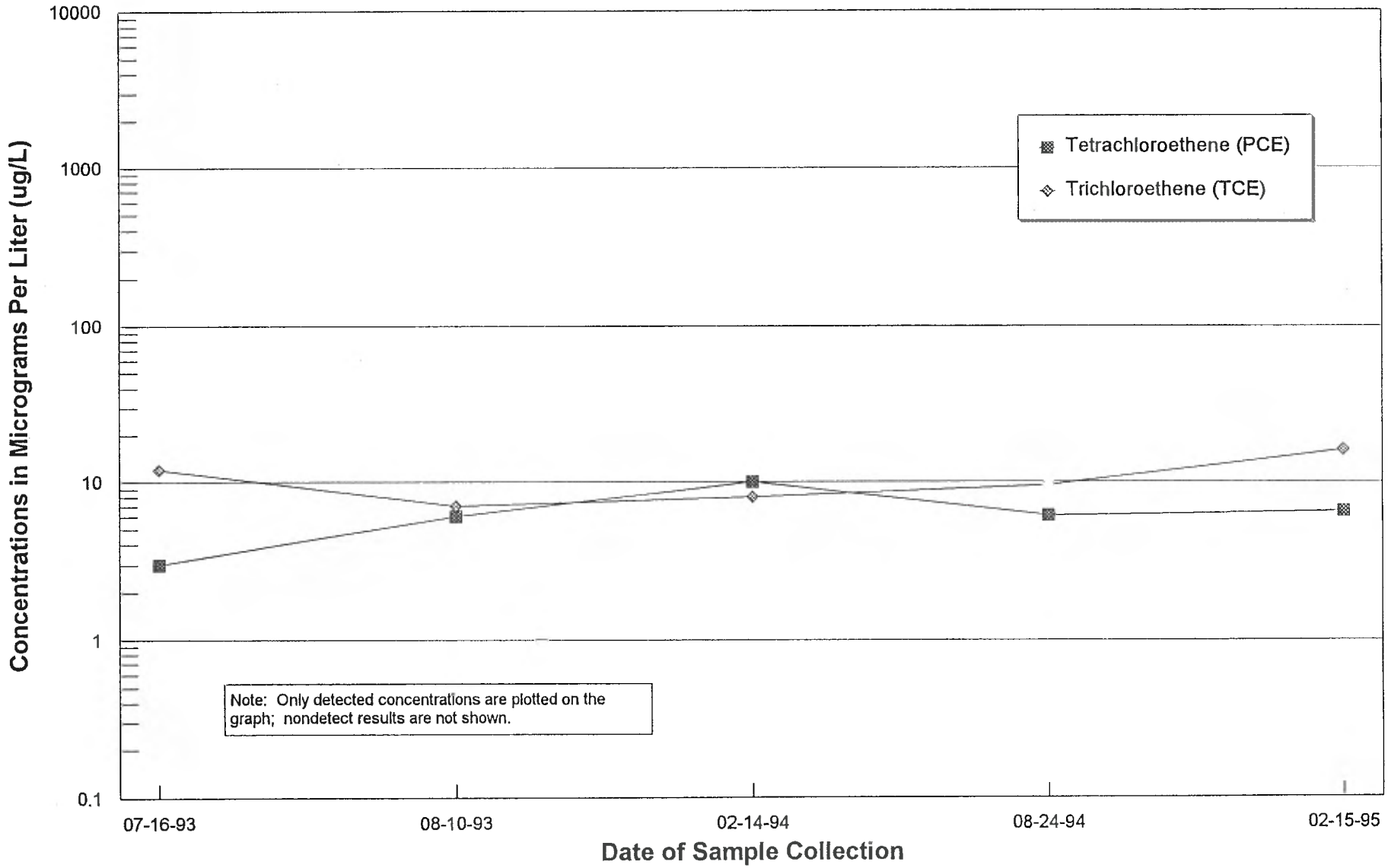


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 17

Well BP-7 PCE & TCE Concentrations -vs- Time

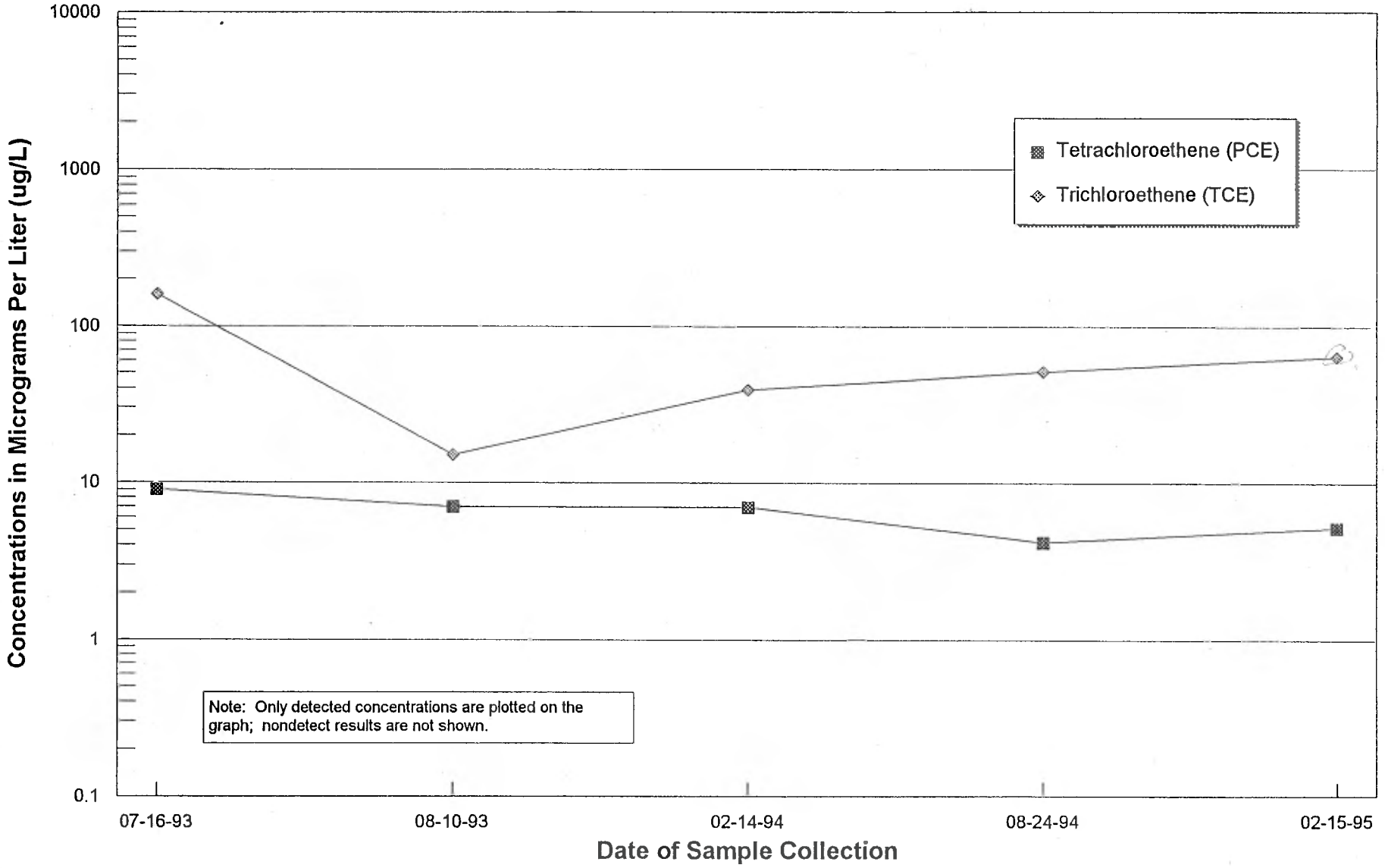


APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

GRAPH 18

Well BP-8 PCE & TCE Concentrations -vs- Time



APPLIED GEOSCIENCES INC. A901978F

February 1995 Monitoring Round

APPENDIX C

FIELD PROCEDURES

APPENDIX C

FIELD PROCEDURES

Groundwater Purging, Collecting and Handling

1. Prior to well purging, the water level and depth to the bottom of each well were measured to the nearest 0.01 foot using a conductance probe. Before each use, the probe was rinsed in laboratory detergent solution, followed by two tapwater rinses and deionized-water rinse.

2. Prior to sampling, the wells were purged of standing water with a submersible pump. Samples were collected after the removal of approximately 150 gallons of water.

3. The water purged from the wells was placed in Department of Transportation (DOT)-approved 55-gallon drums.

4. The samples were collected using a Grundfos submersible sampling pump, at a flow rate of less than 100 milliliter per minute. The pump was washed in the laboratory detergent solution and triple-rinsed with deionized water prior to being used and between each well.

5. Water was discharged into sample containers from the tube connected to the pump. Discharging to the sample containers was at a rate slow enough with the intention of minimizing bubbling and significant agitation of the liquid. The volatile organic analysis vials were filled from the bottom up, leaving no remaining headspace.

6. The samples collected for chemical analysis were placed in Ziploc bags and stored in an ice chest cooled using ice to a temperature of approximately 40 degrees Fahrenheit, and were delivered to the laboratory within 24 hours of collection.

7. Sampling handling, transport, and delivery to the laboratory were documented using chain-of-custody procedures.

APPENDIX D

GROUNDWATER COLLECTION LOGS

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-1
WELL NO.: BP-1
PAGE: 1 of 1
DATE: 2-16-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C/F	TURBIDITY NTU	COMMENTS
8:36	0	6.53	1.45	18.3	247	Cloudy, no odor
8:40	10	7.02	1.39	20.0	80	Cloudy
8:45	20	7.04	1.40	20.2	10	Clear
8:49	30	7.05	1.40	20.3	0	Clear
8:53	40	7.07	1.40	20.4	0	Clear
8:57	50	7.08	1.40	20.4	5	Clear
9:00	60	7.14	1.40	20.2	0	Clear
9:04	70	7.11	1.40	20.3	0	Clear
9:10	80	7.10	1.40	20.2	0	Clear
9:14	90	7.10	1.40	20.4	0	Clear
9:18	100	7.10	1.40	20.6	0	Clear
9:22	110	7.10	1.40	20.7	0	Clear
9:25	120	7.10	1.40	20.7	0	Clear
9:29	130	7.10	1.40	20.8	0	Clear
9:33	140	7.11	1.40	20.8	0	Clear
9:37	150	7.11	1.40	20.7	0	Clear
9:41	160	7.11	1.40	20.8	0	Clear; stop purging

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
	1	200 ML BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-16-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-2
WELL NO.: BP-2
PAGE: 1 of 1
DATE: 2-15-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
2:07	0	7.04	1.28	20.2	0	Clear, no odor
2:12	10	7.07	1.72	20.7	6	Clear, no odor
2:16	20	7.08	1.75	20.7	0	Clear, no odor
2:20	30	7.06	1.75	20.7	0	Clear, no odor
2:24	40	7.07	1.76	20.7	0	Clear, no odor
2:29	50	7.09	1.76	20.5	0	Clear, no odor
2:35	60	7.06	1.76	20.6	0	Clear, no odor
2:39	70	7.06	1.76	20.6	0	Clear, no odor
2:44	80	7.06	1.76	20.6	0	Clear, no odor
2:49	90	7.07	1.75	20.5	0	Clear, no odor
2:53	100	7.07	1.76	20.6	0	Clear, no odor
2:57	110	7.07	1.75	20.6	0	Clear, no odor
3:02	120	7.10	1.74	20.4	0	Clear, no odor
3:06	130	7.07	1.74	20.5	0	Clear, no odor
3:11	140	7.06	1.74	20.6	0	Clear, no odor
3:15	150	7.07	1.74	20.6	0	Clear, no odor
3:19	160	7.07	1.74	20.6	0	Clear, no odor; stop purging

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
	1	1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-15-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-3
WELL NO.: BP-3
PAGE: 1 of 1
DATE: 2-15-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
12:33	0	7.40	1.12	20.3	1	Clear, no odor
12:37	10	7.23	1.28	20.7	4	Clear, no odor
12:43	20	7.18	1.22	20.7	0	Clear, no odor
12:47	30	7.17	1.21	20.6	0	Clear, no odor
12:52	40	7.17	1.21	20.6	0	Clear, no odor
12:56	50	7.16	1.21	20.6	0	Clear, no odor
1:00	60	7.17	1.21	20.6	0	Clear, no odor
1:04	70	7.17	1.21	20.6	0	Clear, no odor
1:08	80	7.17	1.21	20.5	0	Clear, no odor
1:13	90	7.17	1.21	20.6	0	Clear, no odor
1:17	100	7.17	1.21	20.6	0	Clear, no odor
1:22	110	7.17	1.21	20.6	0	Clear, no odor
1:25	120	7.17	1.21	20.6	0	Clear, no odor
1:29	130	7.17	1.21	20.6	0	Clear, no odor
1:35	140	7.22	1.21	20.6	0	Clear, no odor
1:40	150	7.22	1.22	20.6	0	Clear, no odor
1:44	160	7.22	1.22	20.6	0	Clear, no odor; stop purging

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
	1	200 ML BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-16-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-4
WELL NO.: BP-4
PAGE: 1 of 1
DATE: 2-15-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
10:49	0	7.20	1.29	20.7	14	Clear, no odor
10:53	10	7.25	1.27	20.4	0	Clear, no odor
10:59	20	7.22	1.24	20.7	0	Clear, no odor
11:03	30	7.23	1.24	20.8	0	Clear, no odor
11:09	40	7.21	1.24	20.9	0	Clear, no odor
11:13	50	7.22	1.23	20.7	0	Clear, no odor
11:20	60	7.26	1.23	20.7	0	Clear, no odor
11:24	70	7.24	1.23	20.6	0	Clear, no odor
11:29	80	7.22	1.22	20.7	0	Clear, no odor
11:34	90	7.23	1.22	20.6	0	Clear, no odor
11:39	100	7.23	1.22	20.6	0	Clear, no odor
11:44	110	7.22	1.21	20.7	0	Clear, no odor
11:49	120	7.22	1.21	20.7	0	Clear, no odor
11:53	130	7.23	1.21	20.7	0	Clear, no odor
11:56	140	7.23	1.27	20.5	0	Clear, no odor
11:59	150	7.22	1.26	20.6	0	Clear, no odor
12:05	160	7.21	1.24	20.7	0	Clear, no odor; stop purging

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
	1	200 ML BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-15-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-5/BP-E
WELL NO.: BP-5
PAGE: 1 of 1
DATE: 2-16-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
10:09	0	7.40	1.19	19.7	0	Clear, no odor
10:12	10	7.28	1.19	20.5	0	Clear, no odor
10:19	20	7.28	1.20	20.6	0	Clear, no odor
10:27	30	7.27	1.20	21.0	0	Clear, no odor
10:31	40	7.29	1.20	20.6	0	Clear, no odor
10:34	50	7.30	1.21	20.5	0	Clear, no odor
10:37	60	7.32	1.21	20.3	0	Clear, no odor
10:42	70	7.32	1.21	20.4	0	Clear, no odor
10:48	80	7.29	1.21	20.6	0	Clear, no odor
10:52	90	7.27	1.21	20.7	0	Clear, no odor
10:55	100	7.28	1.21	20.7	0	Clear, no odor
10:58	110	7.28	1.21	20.6	0	Clear, no odor
11:02	120	7.32	1.21	20.8	0	Clear, no odor
11:07	130	7.30	1.21	20.7	0	Clear, no odor
11:12	140	7.27	1.20	20.7	0	Clear, no odor
11:16	150	7.28	1.21	20.7	0	Clear, no odor
11:19	160	7.28	1.21	20.7	0	Clear, no odor

TOTAL NUMBER OF SAMPLES COLLECTED		
	4	VOA VIAL(S)
	1	200 ML BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-16-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-6/BP-F
WELL NO.: BP-6
PAGE: 1 of 1
DATE: 2-15-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
8:22	0	6.31	1.35	18.6	7	Clear, no odor
8:27	10	7.18	1.30	19.7	5	Clear, no odor
8:32	20	7.21	1.28	20.1	24	Clear, no odor
8:38	30	7.20	1.29	20.3	13	Clear, no odor
8:47	40	7.21	1.29	20.4	9	Clear, no odor
8:54	50	7.22	1.28	20.5	4	Clear, no odor
9:01	60	7.24	1.28	20.6	3	Clear, no odor
9:07	70	7.22	1.28	20.6	1	Clear, no odor
9:13	80	7.21	1.29	20.5	0	Clear, no odor
9:19	90	7.22	1.28	20.5	0	Clear, no odor
9:23	100	7.23	1.28	20.5	1	Clear, no odor
9:27	110	7.21	1.28	20.5	1	Clear, no odor
9:33	120	7.22	1.28	20.6	0	Clear, no odor
9:37	130	7.21	1.28	20.5	0	Clear, no odor
9:42	140	7.21	1.28	20.7	1	Clear, no odor
9:48	150	7.21	1.28	20.9	1	Clear, no odor
9:53	160	7.21	1.28	20.8	1	Clear, no odor

TOTAL NUMBER OF SAMPLES COLLECTED		
	4	VOA VIAL(S)
	1	200 ML BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-15-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-7
WELL NO.: BP-7
PAGE: 1 of 1
DATE: 2-16-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
11:56	0	7.50	1.28	20.5	0	Clear, no odor
12:01	10	7.27	1.29	20.6	0	Clear, no odor
12:06	20	7.34	1.31	20.2	0	Clear, no odor
12:11	30	7.27	1.29	20.6	0	Clear, no odor
12:15	40	7.25	1.29	20.5	0	Clear, no odor
12:20	50	7.25	1.30	10.6	0	Clear, no odor
12:24	60	7.28	1.31	20.4	0	Clear, no odor
12:28	70	7.31	1.31	20.1	0	Clear, no odor
12:31	80	7.25	1.31	20.4	0	Clear, no odor
12:36	90	7.24	1.30	20.6	0	Clear, no odor
12:42	100	7.24	1.30	20.6	0	Clear, no odor
12:42	110	7.24	1.30	20.6	0	Clear, no odor
12:51	120	7.30	1.30	20.5	0	Clear, no odor
12:55	130	7.31	1.30	20.4	0	Clear, no odor
1:00	140	7.31	1.30	20.4	0	Clear, no odor
1:05	160	7.30	1.30	20.5	0	Clear, no odor; stop purging

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
	1	200 ML BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 2-16-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP-8
WELL NO.: BP-8
PAGE: 1 of 1
DATE: 2-16-95

PURGE METHOD: 2" sub. pump
SAMPLE METHOD: 2" sub. pump

PROJECT NO.: A901978F
PROJECT NAME: American Electronics

TIME	CUMULATIVE GALLONS PURGED	pH	ELECTRICAL CONDUCTIVITY MS/CM	TEMP °C	TURBIDITY NTU	COMMENTS
1:31	0	7.56	1.31	21.2	0	Clear, no odor
1:36	10	7.31	1.29	21.3	0	Clear, no odor
1:40	20	7.25	1.30	21.3	0	Clear, no odor
1:45	30	7.21	1.33	21.3	0	Clear, no odor
1:50	40	7.20	1.33	21.2	0	Clear, no odor
1:55	50	7.19	1.34	21.1	0	Clear, no odor
1:59	60	7.19	1.34	21.1	0	Clear, no odor
2:02	70	7.19	1.36	21.1	0	Clear, no odor
2:08	80	7.19	1.36	21.1	0	Clear, no odor
2:14	90	7.19	1.36	21.0	0	Clear, no odor
2:18	100	7.18	1.36	21.0	0	Clear, no odor
2:22	110	7.20	1.36	21.0	0	Clear, no odor
2:28	120	7.21	1.37	21.0	0	Clear, no odor
2:32	130	7.22	1.36	21.0	0	Clear, no odor
2:38	140	7.23	1.37	21.0	0	Clear, no odor
2:42	160	7.23	1.36	21.0	0	Clear, no odor; stop purging

2	VOA VIAL(S)
1	200 ML BOTTLE(S)
	OTHER

DATE SHIPPED TO LAB: 2-16-95

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Applied Geosciences Inc.

SAMPLER'S SIGNATURE: Doug Johnson

APPLIED GEOSCIENCES INC.
Environmental Consultants

APPENDIX E

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC)

APPENDIX E

QUALITY ASSURANCE\QUALITY CONTROL (QA/QC)

Quality control checks were implemented by both Applied Geosciences Inc. and the laboratory, Orange Coast Analytical of Tustin, California, in order to evaluate the accuracy, precision, and completeness of the laboratory's analytical procedures for assessing whether the data used is comparable and representative of actual field conditions. The QC checks are controlled samples introduced into the sample analysis stream that are used to assess the performance of the laboratory.

BLANKS

Laboratory method blanks were analyzed in conjunction with groundwater analyses. A total of two method blanks were analyzed in general accordance with Environmental Protection Agency (EPA) Method No. 8021. The results of the method blank analyses reported that no compounds were detected at concentrations exceeding the laboratory reporting limits for the 8021 analyses.

SPIKES

All samples analyzed in general accordance with EPA Method No. 8021 were internally spiked with two surrogates (alpha, alpha, alpha-trifluorotoluene & 1,4-diclorobutane) by the laboratory prior to analysis. The amount of these surrogates that were introduced into the sample was then compared to the amount that is recovered and reported by the analysis. The recovered percentage of each spiked compound is then compared to a list of upper and lower control limits (78-120, respectively for alpha, alpha, alpha-trifluorotoluene; and 78-115, respectively for 1,4-diclorobutane). If any of the control limits are exceeded, appropriate review or reanalysis is performed by the laboratory. The surrogate recovery data is a measure of the precision of the laboratory data. The exceedance of a control limit does not invalidate the sample results but rather implies a lesser degree of precision in the result.

There was a total of 10 groundwater samples analyzed for VOCs (including duplicates) and therefore 10 sets of surrogate recovery data for groundwater samples analyzed in general accordance with EPA Method No. 8021. Of the 10 EPA Method No. 8021 analyses, only one of the samples had one out of the two surrogate recoveries that exceeded the control limits. Therefore, 19 out of 20 surrogate recoveries (95 percent) were within acceptable limits which implies a high degree of precision within the data set. Based upon the high percentage of surrogate recoveries within control limits, it is the opinion of Applied Geosciences Inc. that the EPA Method No. 8021 laboratory data be used without qualification.

DUPLICATES

There was a total of two groundwater samples (one from well BP-5 and one from well BP-6) that were analyzed in duplicate in general accordance with EPA Method No. 8021. The quality control measurement for duplicates is the relative percent difference (RPD), which is the difference of two measurements divided by their mean. Because differences in concentrations are generally significant when considered in orders of magnitude, the reported concentrations were logarithmically transformed prior to analysis. It is generally accepted that a 10 percent difference between the sample and duplicate represents a "normal" sample variation. However, relatively low numbers can result in high RPDs even though they are of the same order of magnitude and are essentially equal (e.g., the RPD between 2 and 4 is approximately 34 percent, even though they are in practical terms equivalent results). The RPDs ranged from 0 to 7.23 percent for the samples analyzed and the results of the RPD analysis are summarized in the Table 6.

It is the opinion of Applied Geosciences Inc. that based on the duplicate analytical analyses, no qualification of the sample data set is required.

CONCLUSION

Based upon the examination of the method blanks, surrogate recoveries, and duplicates, it is the opinion of Applied Geosciences Inc. that the sample laboratory data set can be used without qualification.

May 13, 1998

EST1586

Mr. Rob Cowan
Aerochem, Inc.
1885 North Batavia Street
Orange, California 92865

Subject: Soil Gas Survey Report
American Electronics, Inc.
1600 East Valencia Drive
Fullerton, California

Dear Mr. Cowen:

Environmental Support Technologies, Inc. is pleased to submit the enclosed Soil Gas Survey Report for the American Electronics, Inc. facility located at 1600 East Valencia Drive in Fullerton, California. The report presents the objectives, methods and procedures, and field analyses results of the soil gas survey.

The soil gas survey included the installation and sampling of ten (10) 7 foot soil gas sampling probes. Soil gas samples were analyzed on-site for volatile organic compounds including halogenated and aromatic hydrocarbons. The soil gas survey was performed in general accordance with the Los Angeles Regional Water Quality Control Board (LARWQCB) protocols dated February 25, 1997.

EST appreciates the opportunity to assist Aerochem, Inc. on this project. Should you have any questions or require additional information, please contact me at (714) 457-9664.

Sincerely,

Environmental Support Technologies, Inc.

Kevin B. Aardahl

Kevin B. Aardahl
Project Manager/Senior Geologist

cc: Mr. Morris Balderman, Consultant
EST Project File

SOIL GAS SURVEY REPORT

AMERICAN ELECTRONICS, INC.
1600 EAST VALENCIA DRIVE
FULLERTON, CALIFORNIA

Prepared for:

Aerochem, Inc.
1885 North Batavia Street
Orange, California 92865

Prepared by:

Environmental Support Technologies, Inc.
23011 Moulton Parkway, Suite E-6
Laguna Hills, California 92653

Project No. EST1586

May 13, 1998

LIMITATIONS AND WARRANTIES

This Soil Gas Survey Report has been prepared for the exclusive use of Aerochem, Inc. and assigned interested parties. The report has been prepared in accordance with generally accepted environmental assessment practices. No other warranty, expressed or implied, is made.

The information provided in this report is based on measurements performed in specific areas during a specific limited period of time. In the event that any changes occur in waste management practices, site conditions, or uses of the property, the information contained in this report should be reviewed and modified or verified in writing by Environmental Support Technologies, Inc. (EST).

Soil gas sample analyses are conducted using laboratory-grade gas chromatography equipment. Chemical compound identification is performed using quantitative methods. Chemical compound identities should be verified using gas chromatography/mass spectrometric analyses methods. Soil gas survey data should be used in conjunction with other site-specific data.

Kirk A. Thomson, R.G., C.HG., R.E.A., M.S.
Project Manager/Principal Hydrogeologist

1.0 INTRODUCTION

On April 28, 1998, Environmental Support Technologies, Inc. (EST), at the request of Aerochem, Inc., performed a soil gas survey at the American Electronics, Inc. facility located at 1600 East Valencia Drive in Fullerton, California (site). The soil gas survey included the installation and sampling of ten (10) 7 foot soil gas sampling probes. Soil gas samples were analyzed on-site for volatile organic compounds (VOCs) including halogenated and aromatic hydrocarbons. The soil gas survey was performed in general accordance with the Los Angeles Regional Water Quality Control Board (LARWQCB) protocols dated February 25, 1997. This soil gas survey report was prepared based on soil gas analyses data collected during the survey.

2.0 OBJECTIVES OF THE SOIL GAS SURVEY

The objectives of the soil gas survey were to:

- Aid in identifying potential vadose zone source areas of VOCs including halogenated and aromatic hydrocarbons.
- Assess the limited lateral extent of VOCs in surficial soils.

Soil gas sampling is a monitoring technique for the presence of VOCs in soil and should be used in conjunction with other site-specific data. Soil gas sampling is limited in its applications depending on site conditions. Some factors affecting the distribution of VOCs in the subsurface are listed in Appendix A.

3.0 RATIONALE FOR THE LOCATIONS OF SAMPLING SITES

The soil gas sampling probe locations were selected and cleared of underground utilities by representatives of Aerochem, Inc. The approximate locations of the soil gas sampling probes are shown on figures maintained by Aerochem, Inc.

4.0 METHODS AND PROCEDURES

Field methods and procedures used to perform the soil gas survey are described in this section.

4.1 SOIL GAS PROBE INSTALLATION AND COMPLETION

Construction details of a typical soil gas sampling probe are shown in Figure 1. Soil gas probes were installed using either a percussion-hammer or hydraulic-ram. Once a probe was installed to the desired depth, the hollow probe drive-rod was withdrawn, leaving the steel probe point and Nylaflow™ sampling tube in the subsurface. Clean, graded (#2/12), kiln dried, Lonestar Monterey sand was poured around the perforated section of Nylaflow™ tubing to allow for diffusion of soil vapors. The remaining annulus was filled with hydrated bentonite/cement slurry to slightly below grade. The probe point and sampling tube assembly were left in place (dedicated) as a long-term soil gas monitoring point. The sampling tube was plugged with a stainless-steel machine-screw, folded over, and pushed down-hole until slightly below grade. The remaining depression was filled with concrete patch material and finished flush with surrounding paving material.

4.2 SOIL GAS SAMPLE COLLECTION AND HANDLING

Soil gas samples were collected using the soil gas sampling system shown in Figure 2. The soil gas sampling system was constructed of stainless-steel, glass, Nylaflow™, and Teflon™ components. Instrumentation associated with the sampling system included a calibrated flow-meter and vacuum gauge. Vacuum integrity of the sampling system was tested prior to, and after the soil gas survey using leak-down testing methods. The soil gas sampling system and instrumentation were operating as required on both occasions. Soil gas sampling probes were purged at a flow of approximately 100 milliliters per minute (ml/min).

A site-specific probe purge volume versus sample concentration test was initially performed to evaluate the appropriate volume of gas to be purged from each probe prior to sample collection. Time-series sampling of at least one probe was conducted to evaluate trends in soil gas concentrations as a function of purge volume. After purging, soil gas samples were withdrawn from the sample stream using a glass syringe fitted with a disposable needle and Mininert™ gas-tight valve. Soil gas samples were immediately injected into a gas chromatograph (GC) after collection.

4.3 SOIL GAS SAMPLE ANALYSES (HALOGENATED AND AROMATIC HYDROCARBONS)

Soil gas samples were analyzed in the field for halogenated and aromatic hydrocarbons using a mobile laboratory equipped with a Varian-3400 GC configured with a photo-ionization detector (PID) and an electrolytic conductivity detector (ELCD) placed in series. The GC-PID/ELCD was used to analyze soil gas samples for halogenated and aromatic hydrocarbons using a method similar to EPA Method 8021. The reportable limit of quantitation for EPA Method 8021 compounds is one microgram per liter (µg/L).

4.4 SURROGATE COMPOUNDS

Two (2) surrogate compounds were added to all analyzed samples. Surrogate compound concentrations were within the initial calibration range. The percent recovery of the surrogate compounds were calculated and reported with soil gas sample analyses results. The acceptance goal for surrogate compound recovery is ±25 percent difference from the true concentration of the surrogate compounds. Surrogate compounds added to each sample analyses run included Fluorobenzene (PID) and cis-1,3-Dichloropropene (PID and ELCD), each at a true concentration of 5,000 µg/L.

4.5 INITIAL MULTI-POINT EQUIPMENT CALIBRATION (HALOGENATED AND AROMATIC HYDROCARBONS)

A summary of the Quality Assurance/Quality Control (QA/QC) analyses is presented in Table 1. The GC-PID/ELCD used for soil gas analyses was calibrated using high-purity solvent-based standards obtained from certified vendors. GC-PID/ELCD calibration standards were prepared in high-purity methanol solvent. GC-PID/ELCD calibration using solvent-based standards was performed using varying injection volumes of the undiluted solvent-based standard. If necessary, stock solvent-based standards were diluted to an appropriate concentration. Diluted standards were prepared by introducing a known volume of stock solvent-based standard into a known volume of high-purity solvent.

Initial calibration was performed for 25 target compounds. The GC-PID/ELCD was calibrated using three standard injections to establish a three-point calibration curve. The lowest standard was not higher than five times the method detection limit (or 5 µg/L). The percent relative standard deviation (%RSD) of the response factor (RF) for each target compound did not exceed 20 percent except for Trichlorofluoromethane (Freon™-11), Dichlorodifluoromethane (Freon™-12), 1,1,2-Trichlorotrifluoroethane (Freon™-113), Chloroethane (CE), and Vinyl Chloride (VC), which did not exceed 30% RSD. Identification and quantitation of compounds in the field was based on calibration under the same analytical conditions as for three-point calibration.

4.6 LABORATORY CONTROL SAMPLE

A laboratory control sample (LCS) from a different source or lot number other than the initial calibration standard was used to verify the true concentration of the initial calibration standard. The LCS included 25 target compounds. The RF for each compound in the LCS (except for Freon™-11, -12, and -113, CE, and VC) did not exceed 15 percent difference from the Average Response Factor (ARF) established from the initial calibration. The RF for Freon™-11, -12, and -113, CE, and VC did not exceed 25 percent of the initial calibration.

4.7 DAILY MID-POINT CALIBRATION CHECK (HALOGENATED AND AROMATIC HYDROCARBONS)

Daily field calibration of the GC-PID/ELCD consisted of a mid-point calibration using a standard containing 25 target compounds. The daily mid-point calibration check included the 14 target compounds specified in Los Angeles Regional Water Quality Control Board (LARWQCB) requirements dated February 1997. The RF of each compound (except for Freon™-11, -12, and -113, CE, and VC) was within 15 percent of the average RF from the initial calibration. The RF for Freon™-11, -12, and -113, CE, and VC was within 25 percent of the initial calibration. If these criteria were not met, the GC-PID/ELCD was recalibrated. Daily calibration was performed prior to the first soil gas sample analysis of the day. One-point calibration was performed for all compounds detected at the site to ensure accurate quantitation. Subsequent calibration episodes, if deemed necessary, consisted of at least one injection of the standard exhibiting a similar detector response as that of samples encountered in the field.

4.8 BLANK INJECTIONS

The syringes used for soil gas sample collection were periodically filled with ambient air or high-purity carrier-grade gas from a compressed gas cylinder. The ambient air or high-purity gas was injected directly into the gas chromatograph. The blank injections served to detect potential cross-contamination of the sampling equipment and to verify the effectiveness of decontamination procedures.

4.9 DECONTAMINATION

Probe installation and sampling equipment in contact with site soil or soil gas sample streams were decontaminated prior to collection of each soil gas sample. Decontamination of probe installation equipment was performed by immersion and scrubbing in Alconox™ detergent solution, rinsing in tap-water, rinsing in VOC-free water, followed by air drying. Decontamination of soil gas sampling equipment was performed by baking at elevated temperatures (<160° Celsius) inside the GC oven.

5.0 SOIL GAS SURVEY RESULTS

Concentrations of halogenated hydrocarbons were detected in soil gas samples collected at the site. A summary of field analyses results is provided in Table 2. Field analyses reports, calibration data, and reportable limits of quantitation for halogenated and aromatic hydrocarbons are provided in Appendix B.

TABLES

TABLE 1

SUMMARY OF QUALITY ASSURANCE/QUALITY CONTROL ANALYSES FOR SOIL GAS SURVEYS

File: SGSQAQCt1

CALIBRATION AND LABORATORY CONTROL SAMPLES		
DESCRIPTION	FREQUENCY	PRECISION GOAL %RSD or %DIFF
INITIAL MULTI-POINT CALIBRATION (25 Target Compounds)	At the beginning of the soil gas survey, unless the RPDs of the initial laboratory check sample or daily mid-point calibration check samples exceed their goals.	20-30 (1)
INITIAL LABORATORY CONTROL SAMPLE (LCS) (25 Target Compounds)	At the beginning of the survey, following the initial three-point calibration.	15 (2)
DAILY MID-POINT CALIBRATION CHECK (12 Target Compounds)	At the beginning of each day.	15 (3) 25 (3)
LAST GC TEST RUN	At the end of the day if all samples from that day of analysis show non-detect (ND) results.	At least 50 % recovery (4)
FIELD CONTROL SAMPLES		
DESCRIPTION	FREQUENCY	PRECISION GOAL
BACKGROUND SAMPLE (5)	Minimum one per day.	N/A
SYRINGE BLANK (5)	Minimum one per day.	N/A

%RSD = Percent Relative Standard Deviation calculated based on the initial three-point calibration.

%DIFF = Percent Difference between the response factor obtained from the LCS, the daily mid-point calibration, or the last GC test run and the average response factor initially calculated based on the three-point calibration.

N/A = Not applicable.

(1) The %RSD goal for the initial three-point calibration will be 20 percent for all compounds except for Freon 11, Freon 12, Freon 113, chloroethane, and vinyl chloride for which the %RSD goal is 30 percent.

(2) The %DIFF goal for the LCS will be 15 percent for all target compounds.

(3) The %DIFF goal for the daily mid-point calibration check will be 15 percent for all compounds except for Freon 11, Freon 12, Freon 113, chloroethane, and vinyl chloride for which the %DIFF goal is 25 percent.

(4) A LCS at the detection limit concentration is analyzed. The recovery for each compound must be at least 50 percent.

(5) A syringe/background sample will be analyzed using ambient air. If volatile organic compounds (VOCs) are not detected, the ambient air sample will represent the background sample and syringe blank. If VOCs are detected in the ambient air sample, a syringe blank will be analyzed using ultra-high-purity helium or nitrogen gas.

TABLE 2

SUMMARY OF FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES

AMERICAN ELECTRONICS, INC.
1600 EAST VALENCIA DRIVE
FULLERTON, CALIFORNIA

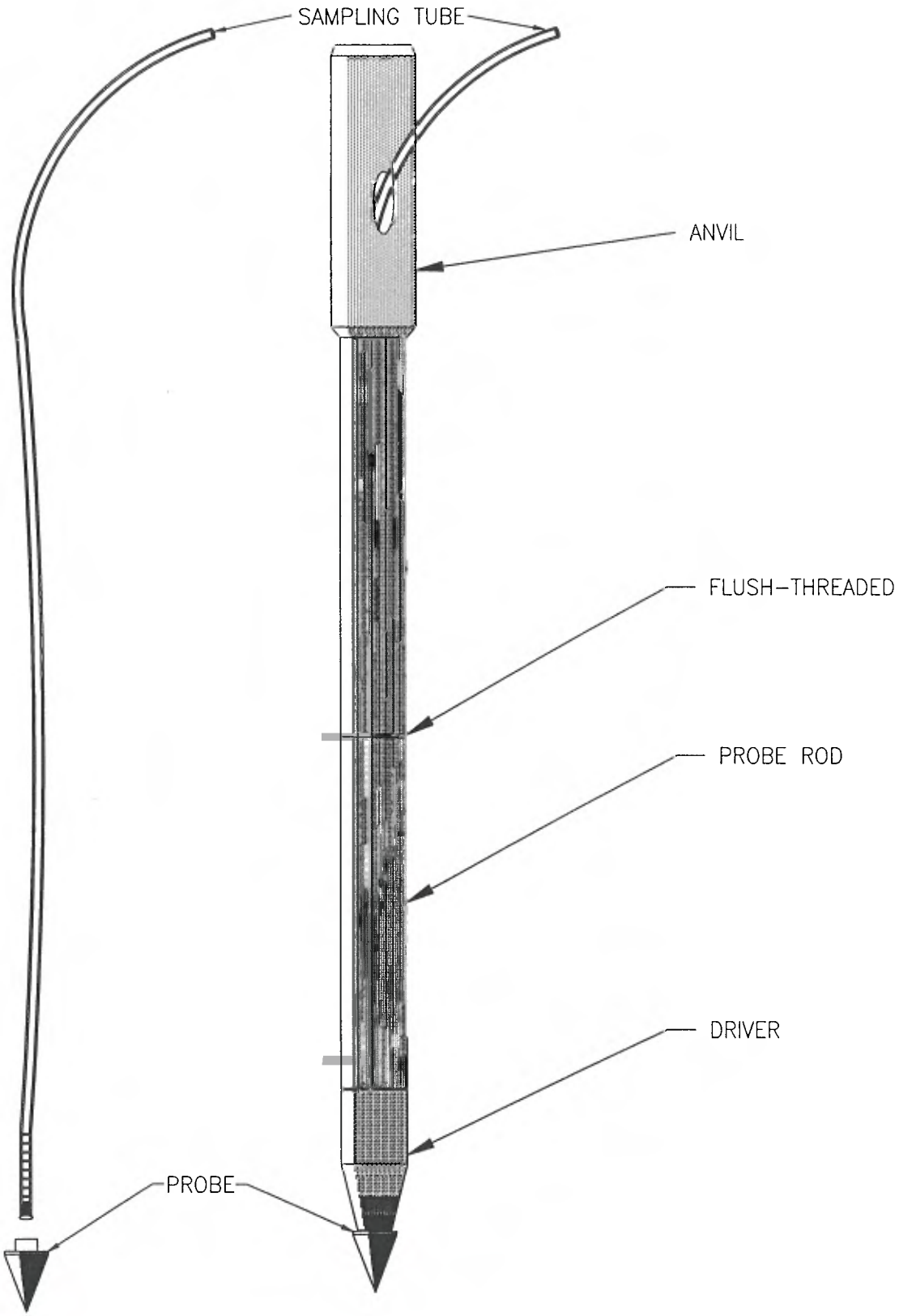
4/28/98 File 1586T2

PROBE NUMBER	DATE OF SAMPLING	PROBE DEPTH (ft)	SAMPLING EVENTS	FREON 113 (µg/L)	1,1-DCE (µg/L)	cis-1,2-DCE (µg/L)	Chloroform (µg/L)	Carbon Tetrachloride (µg/L)	TCE (µg/L)	PCE (µg/L)
SG1-7	4/28/98	7	4	ND<1	ND<1	ND<1	ND<1	ND<1	9	381
SG2-7	4/28/98	7	2	4	3	ND<1	ND<1	ND<1	61	25
SG3-7	4/28/98	7	2	7	15	11	3	5	485	34
SG4-7	4/28/98	7	1	ND<25	ND<25	ND<25	ND<25	ND<25	234	43
SG5-7	4/28/98	7	1	ND<10	ND<10	ND<10	ND<10	ND<10	44	26
SG6-7	4/28/98	7	2	44	ND<1	ND<1	ND<1	ND<1	50	29
SG7-7	4/28/98	7	1	4	ND<1	ND<1	ND<1	ND<1	5	12
SG8-7	4/28/98	7	1	8	ND<1	ND<1	ND<1	ND<1	2	5
SG9-7	4/28/98	7	1	3	ND<1	ND<1	ND<1	ND<1	2	2
SG10-7	4/28/98	7	1	39	ND<1	ND<1	ND<1	ND<1	1	26

ft = feet below grade
µg/L = micrograms per liter
ND = Not Detected; sample is below the reportable limit of quantitation.
FREON 113 = 1,1,2-Trichloro-Triflouroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
TCE = Trichloroethene
PCE = Tetrachloroethene

Note: Values shown are the highest detected in each probe within quantitation range.

FIGURES



DEDICATED PORTION OF PROBE

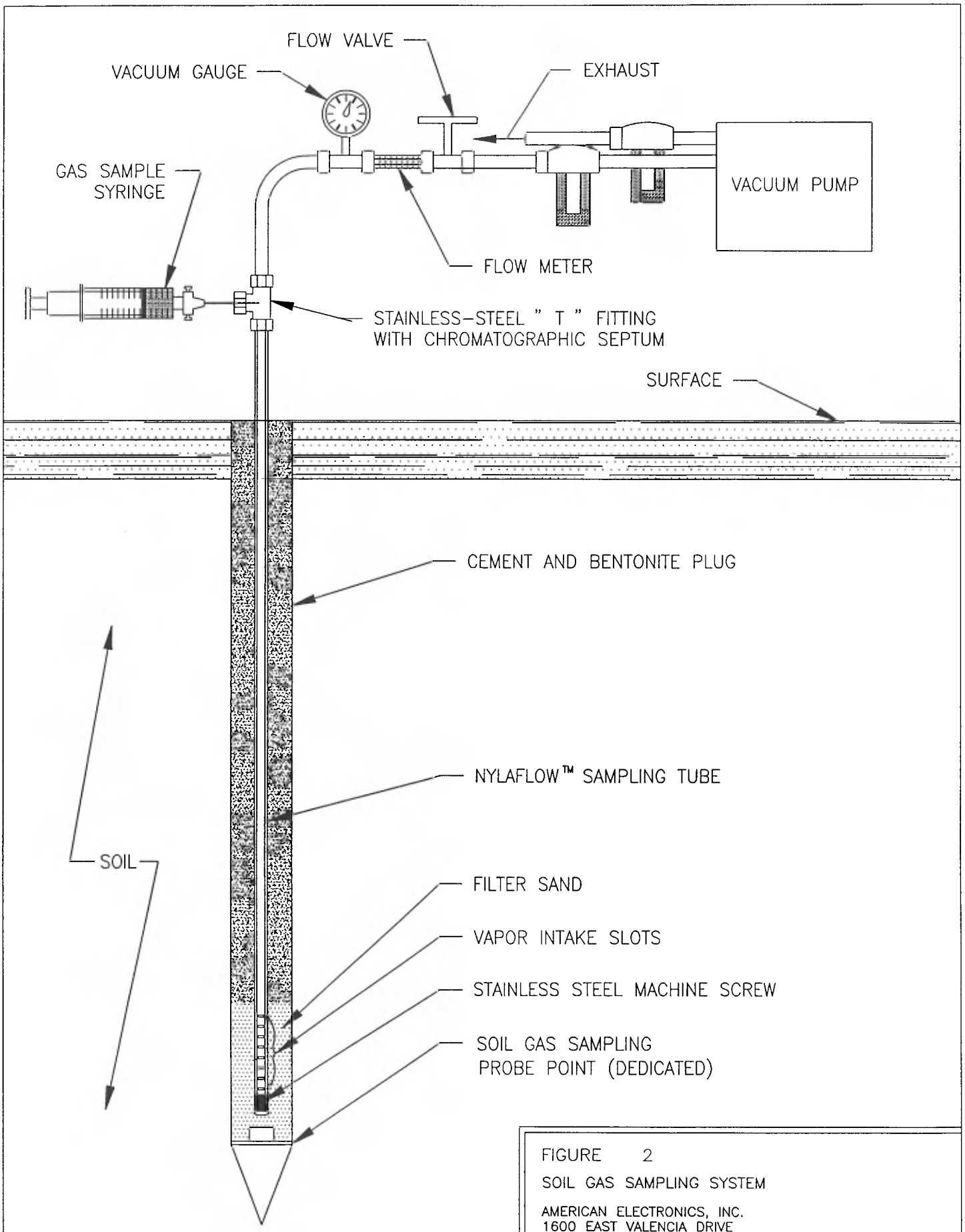
NOTE: NOT TO SCALE

FIGURE 1

SOIL GAS SAMPLING PROBE

AMERICAN ELECTRONICS, INC.
1600 EAST VALENCIA DRIVE
FULLERTON, CALIFORNIA
EST1586/SOIL GAS SURVEY REPORT
DRAWN BY: JST SCALE: AS SHOWN DATE: 5-8-98

REVPROBE.DWG



NOTE: NOT TO SCALE

FIGURE 2

SOIL GAS SAMPLING SYSTEM

AMERICAN ELECTRONICS, INC.
1600 EAST VALENCIA DRIVE
FULLERTON, CALIFORNIA
EST1586/SOIL GAS SURVEY REPORT
DRAWN BY: JST SCALE: AS SHOWN DATE: 5-8-98

REVSYS.DWG

APPENDICES

Appendix A

FACTORS AFFECTING THE GAS-PHASE DISTRIBUTION OF VOCs IN THE SUBSURFACE

FACTORS AFFECTING THE GAS-PHASE DISTRIBUTION OF VOCs IN THE SUBSURFACE

Soil and groundwater contamination by volatile organic compounds (VOCs) can often be detected by analyzing trace gases in soil just below ground surface. This technique is possible because many VOCs will volatilize and move by molecular diffusion away from source areas toward regions of lower concentrations. A gas phase concentration gradient from the source to adjacent areas is established.

The following factors affect the transport and gas phase distribution of VOCs in the subsurface.

1. The liquid-gas partitioning coefficient of the compounds of interest (the "volatility" of the compound).

2. The vapor diffusivity, which is a measure of how quickly an individual compound "spreads out" within a volume of gas.

3. Retardation of the individual compounds as they migrate in the soil gas. Retardation may be due to degradation, adsorption on the soil matrix, tortuosity of the soil profile, or entrapment in unconnected pores.

4. The presence of impeding layers, wetting fronts of freshwater, or perched water tables, between the regional water table and ground surface.

5. The presence of soil moisture around man-made structures such as clarifiers and sumps may suppress volatilization and diffusion of VOCs resulting in false negative or low soil gas concentrations.

6. The presence of contaminants from localized spills or in the ambient air.

7. Movement of soil gas in response to barometric pressure changes.

8. The preferential migration of gas through zones of greater permeability (e.g. natural lithologic variation or back-fill of underground utilities).

9. Soil temperature.

At most sites, many of these factors are unknown or poorly understood. Because of this uncertainty, soil gas sampling should be used in conjunction with other site-specific data.

Appendix B

FIELD ANALYSES RESULTS FOR HALOGENATED AND AROMATIC HYDROCARBONS

(INCLUDING CALIBRATION REPORTS, QUALITY CONTROL REPORTS, AND EXPLANATION OF REPORTABLE LIMITS OF QUANTITATION)

TABLE B-1

HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
SITE LOCATED AT 1600 EAST VALENCIA DRIVE, FULLERTON, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 4/28/98 FILE: 1586ASGRP

SAMPLE ID			SG1-7	SG1-7	SG1-7	SG1-7	SG2-7	SG2-7	SG3-7	SG3-7
DATE			4/28/98	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98
TIME			9:55	10:13	10:29	10:45	11:02	11:20	11:37	11:56
INJECTION VOLUME (µl)			500	10	10	10	500	100	500	5
PURGE VOLUME (ml)			100	100	200	400	200	200	200	200
VACUUM (in. H2O)			ND	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR			1	50	50	50	1	5	1	100
REPORTABLE LIMIT (µg/L)			1	50	50	50	1	5	1	100
COMMENTS	RT	ARF								
Dichlorodifluoromethane	4:72	5.14E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	4:97	1.13E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	5:48	1.52E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	5:77	3.26E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	6:15	2.37E+05	6.10E+01 ND<1	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50	4.34E+02 4	3.70E+01 ND<5	8.47E+02 7	0.00E+00 ND<100
1,1-Dichloroethene	6:42	3.37E+05	0.00E+00 ND<1	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50	4.62E+02 3	3.30E+01 ND<5	2.52E+03 15	0.00E+00 ND<100
Methylene chloride	6:87	4.27E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	7:15	3.43E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	7:57	4.59E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	8.50E+01 ND<1	0.00E+00 ND
cis-1,2-Dichloroethene	8:18	4.00E+05	4.40E+01 ND<1	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50	4.40E+01 ND<1	0.00E+00 ND<5	2.23E+03 11	0.00E+00 ND<100
Chloroform	8:37	6.77E+05	0.00E+00 ND<1	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50	6.30E+01 ND<1	0.00E+00 ND<5	9.21E+02 3	0.00E+00 ND<100
1,1,1-Trichloroethane	8:82	4.95E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	5.90E+01 ND<1	0.00E+00 ND
Carbon tetrachloride	9:15	2.39E+05	0.00E+00 ND<1	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50	4.90E+01 ND<1	0.00E+00 ND<5	5.72E+02 5	0.00E+00 ND<100
Benzene	9:30	3.39E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	9:23	1.20E+06	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Fluorobenzene (Surrogate)	9:47	2.41E+04	1.16E+02 96%	1.07E+02 89%	1.10E+02 91%	1.12E+02 93%	1.00E+02 83%	1.20E+02 100%	1.17E+02 97%	1.02E+02 85%
Trichloroethene	10:00	5.38E+05	2.36E+03 9	0.00E+00 ND<50	0.00E+00 ND<50	0.00E+00 ND<50	1.81E+04 67 *	3.30E+03 61	7.58E+04 282 *	1.30E+03 485
cis-1,3-Dichloropropene (Surrogate)	11:15	2.83E+05	1.78E+03 126%	1.78E+03 126%	1.73E+03 123%	1.66E+03 118%	2.05E+03 145%	1.73E+03 123%	1.75E+03 124%	1.76E+03 125%
Toluene	11:63	3.45E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloroethane	12:10	4.81E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	12:65	5.31E+05	7.25E+04 273 *	1.99E+03 375	2.02E+03 381	2.00E+03 377	3.48E+03 13	1.33E+03 25	9.03E+03 34	2.61E+02 ND<100
1,1,1,2-Tetrachloroethane	13:95	5.17E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	13:90	2.73E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta- and para-Xylene	14:00	7.89E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	14:75	2.96E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	15:60	4.82E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

Concentrations reported in micrograms per liter (µg/L)
ND = Not detected
ND< = Not detected above the reported limit of quantitation
RT = Retention time
µl = Microliter
ml = Milliliter
in. Hg = Inches of mercury
ARF = Average response factor
* = Exceeds quantitation range
NA = Not Analyzed

4/28/98

ANALYST : Ragi Abraham

REVIEWED BY : Duy Mai DM

TABLE B-1

HALOGENATED AND AROMATIC HYDROCARBONS
FIELD ANALYSES RESULTS FOR SOIL GAS SAMPLES
SITE LOCATED AT 1600 EAST VALENCIA DRIVE, FULLERTON, CALIFORNIA
25-TARGET COMPOUND LIST

PID/ELCD #1 4/28/98 FILE: 1586ASGRP

SAMPLE ID			SG4-7	SG5-7	SG6-7	SG6-7	SG7-7	SG8-7	SG9-7	SG10-7
DATE			4/28/98	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98	4/28/98
TIME			12:16	12:34	12:53	13:11	13:26	13:45	14:03	14:20
INJECTION VOLUME (µl)			20	50	500	100	500	500	500	500
PURGE VOLUME (ml)			200	200	200	200	200	200	200	200
VACUUM (in. H2O)			ND	ND	ND	ND	ND	ND	ND	ND
DILUTION FACTOR			25	10	1	5	1	1	1	1
REPORTABLE LIMIT (µg/L)			25	10	1	5	1	1	1	1
COMMENTS	RT	ARF								
Dichlorodifluoromethane	4:72	5.14E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Vinyl chloride	4:97	1.13E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Chloroethane	5:48	1.52E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Trichlorofluoromethane	5:77	3.26E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloro-trifluoroethane	6:15	2.37E+05	0.00E+00 ND<25	3.40E+01 ND<10	9.49E+03 80	1.04E+03 44	5.13E+02 4	9.09E+02 8	3.33E+02 3	4.67E+03 39
1,1-Dichloroethene	6:42	3.37E+05	0.00E+00 ND<25	0.00E+00 ND<10	0.00E+00 ND<1	0.00E+00 ND<5	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1
Methylene chloride	6:87	4.27E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
trans-1,2-Dichloroethene	7:15	3.43E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1-Dichloroethane	7:57	4.59E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
cis-1,2-Dichloroethene	8:18	4.00E+05	0.00E+00 ND<25	0.00E+00 ND<10	0.00E+00 ND<1	0.00E+00 ND<5	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1
Chloroform	8:37	6.77E+05	0.00E+00 ND<25	0.00E+00 ND<10	0.00E+00 ND<1	0.00E+00 ND<5	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1
1,1,1-Trichloroethane	8:82	4.95E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Carbon tetrachloride	9:15	2.39E+05	0.00E+00 ND<25	0.00E+00 ND<10	0.00E+00 ND<1	0.00E+00 ND<5	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1	0.00E+00 ND<1
Benzene	9:30	3.39E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,2-Dichloroethane	9:23	1.20E+06	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Fluorobenzene (Surrogate)	9:47	2.41E+04	9.40E+01 78%	1.08E+02 90%	1.02E+02 85%	1.08E+02 90%	1.06E+02 88%	9.80E+01 81%	1.00E+02 83%	1.01E+02 84%
Trichloroethene	10:00	5.38E+05	2.51E+03 234	1.19E+03 44	9.37E+03 35	2.68E+03 50	1.36E+03 5	4.38E+02 2	6.08E+02 2	3.74E+02 1
cis-1,3-Dichloropropene (Surrogate)	11:15	2.83E+05	1.74E+03 123%	1.75E+03 124%	2.29E+03 162%	1.70E+03 120%	1.68E+03 119%	1.60E+03 113%	1.72E+03 122%	1.46E+03 103%
Toluene	11:63	3.45E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2-Trichloroethane	12:10	4.81E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Tetrachloroethene	12:65	5.31E+05	4.58E+02 43	6.94E+02 26	1.53E+03 6	1.55E+03 29	3.19E+03 12	1.22E+03 5	4.15E+02 2	6.79E+03 26
1,1,1,2-Tetrachloroethane	13:95	5.17E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
Ethylbenzene	13:90	2.73E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
meta- and para-Xylene	14:00	7.89E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
ortho-Xylene	14:75	2.96E+04	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND
1,1,2,2-Tetrachloroethane	15:60	4.82E+05	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND	0.00E+00 ND

Concentrations reported in micrograms per liter (µg/L)
ND = Not detected
ND< = Not detected above the reported limit of quantitation
RT = Retention time
µl = Microliter
ml = Milliliter
in. Hg = Inches of mercury
ARF = Average response factor
* = Exceeds quantitation range
NA = Not Analyzed

4/28/98

TABLE B-2
QUALITY ASSURANCE/QUALITY CONTROL REPORT
SUBJECT SITE, CALIFORNIA

PID/ELCD #1 - 4/28/98 — 1586AQAQC

TARGET COMPOUNDS		February 23, 1998								April 28, 1998				
		THREE-POINT CALIBRATION					LCS			MID-POINT			LAST RUN	
STANDARD CONC. (µg/L)		5000	5000	**20000**			5000		**BLANK**	**5000**		**BLANK**	**5000**	
INJECTION VOLUME(uL)		0.50	**1.00**	**1.00**			1.00		**500**	**1.00**		**500**	**0.20**	
COMPOUND/WEIGHT(µg)	**RT**	0.0025	**0.0050**	**0.0200**	**ARF**	%RSD	0.0050	RPD		**0.0050**	**RPD**		**0.0010**	**%REC**
Dichlorodifluoromethane	4:72	104	228	1336			209							
CF		4.17E+04	4.57E+04	6.68E+04	5.14E+04	26	4.18E+04	-19	ND	0.00E+00	NA	ND	0.00E+00	NA
Vinyl chloride	4:97	350	587	1641			626							
CF		1.40E+05	1.17E+05	8.20E+04	1.13E+05	26	1.25E+05	11	ND	0.00E+00	NA	ND	0.00E+00	NA
Chloroethane	5:48	261	807	3818			765							
CF		1.04E+05	1.61E+05	1.91E+05	1.52E+05	29	1.53E+05	0	ND	0.00E+00	NA	ND	0.00E+00	NA
Trichlorofluoromethane	5:77	718	1969	5914			1816							
CF		2.87E+05	3.94E+05	2.96E+05	3.26E+05	18	3.63E+05	12	ND	0.00E+00	NA	ND	0.00E+00	NA
1,1,2-Trichloro-trifluoroethane	6:15	488	1402	4705			1240			953				
CF		1.95E+05	2.80E+05	2.35E+05	2.37E+05	18	2.48E+05	5	ND	1.91E+05	-20	ND	0.00E+00	NA
1,1-Dichloroethene	6:42	695	1940	6922			1769			1780				
CF		2.78E+05	3.88E+05	3.46E+05	3.37E+05	16	3.54E+05	5	ND	3.56E+05	6	ND	0.00E+00	NA
Methylene chloride	6:87	964	2307	8681			2088							
CF		3.85E+05	4.61E+05	4.34E+05	4.27E+05	9	4.18E+05	-2	ND	0.00E+00	NA	ND	0.00E+00	NA
trans-1,2-Dichloroethene	7:15	727	1851	7391			1661			1556				
CF		2.91E+05	3.70E+05	3.70E+05	3.43E+05	13	3.32E+05	-3	ND	3.11E+05	-9	ND	0.00E+00	NA
1,1-Dichloroethane	7:57	955	2379	10380			2140			2280				
CF		3.82E+05	4.76E+05	5.19E+05	4.59E+05	15	4.28E+05	-7	ND	4.56E+05	-1	ND	0.00E+00	NA
cis-1,2-Dichloroethene	8:18	927	2100	8187			1985			2042				
CF		3.71E+05	4.20E+05	4.09E+05	4.00E+05	6	3.97E+05	-1	ND	4.08E+05	2	ND	0.00E+00	NA
Chloroform	8:37	1459	3514	14911			3105			3589				
CF		5.84E+05	7.03E+05	7.46E+05	6.77E+05	12	6.21E+05	-8	ND	7.18E+05	6	ND	0.00E+00	NA
1,1,1-Trichloroethane	8:82	989	2555	11549			2292			2632				
CF		3.95E+05	5.11E+05	5.77E+05	4.95E+05	19	4.58E+05	-7	ND	5.26E+05	6	ND	0.00E+00	NA
Carbon tetrachloride	9:15	652	1222	4253			1139							
CF		2.61E+05	2.44E+05	2.13E+05	2.39E+05	10	2.28E+05	-5	ND	0.00E+00	NA	ND	0.00E+00	NA
Benzene (PID)	9:30	74	184	704			171			175				
CF		2.97E+04	3.69E+04	3.52E+04	3.39E+04	11	3.42E+04	1	ND	3.50E+04	3	ND	0.00E+00	NA
1,2-Dichloroethane	9:23	2922	7061	20670			6421			6032				
CF		1.17E+06	1.41E+06	1.03E+06	1.20E+06	16	1.28E+06	7	ND	1.21E+06	0	ND	0.00E+00	NA
Fluorobenzene (Surrogate)	9:47	56	126	245			0							
CF		2.25E+04	2.52E+04	2.45E+04	2.41E+04	6	0.00E+00	NA	ND	0.00E+00	NA	ND	0.00E+00	NA
Trichloroethene	10:00	1182	2787	11680			2422			2883				
CF		4.73E+05	5.57E+05	5.84E+05	5.38E+05	11	4.84E+05	-10	ND	5.77E+05	7	ND	0.00E+00	NA
cis-1,3-Dichloropropene (Surrogate)	11:15	651	1511	2849			0							
CF		2.60E+05	3.02E+05	2.85E+05	2.83E+05	7	0.00E+00	NA	ND	0.00E+00	NA	ND	0.00E+00	NA
Toluene (PID)	11:63	84	175	702			165			168				
CF		3.35E+04	3.51E+04	3.51E+04	3.45E+04	3	3.29E+04	-5	ND	3.36E+04	-3	ND	0.00E+00	NA
1,1,2-Trichloroethane	12:10	1070	2617	9841			2235			2721				
CF		4.28E+05	5.23E+05	4.92E+05	4.81E+05	10	4.47E+05	-7	ND	5.44E+05	13	ND	0.00E+00	NA
Tetrachloroethene	12:65	1135	2750	11783			2329			2684				
CF		4.54E+05	5.50E+05	5.89E+05	5.31E+05	13	4.66E+05	-12	ND	5.37E+05	1	ND	0.00E+00	NA
1,1,1,2-Tetrachloroethane	13:95	1167	2803	10492			2524							
CF		4.67E+05	5.61E+05	5.25E+05	5.17E+05	9	5.05E+05	-2	ND	0.00E+00	NA	ND	0.00E+00	NA
Ethylbenzene (PID)	13:90	61	136	604			124							
CF		2.44E+04	2.73E+04	3.02E+04	2.73E+04	11	2.49E+04	-9	ND	0.00E+00	NA	ND	0.00E+00	NA
meta and para-Xylene (PID)	14:00	179	410	1660			391			388				
CF		7.18E+04	8.20E+04	8.30E+04	7.89E+04	8	7.81E+04	-1	ND	7.76E+04	-2	ND	0.00E+00	NA
ortho-Xylene (PID)	14:75	70	149	621			141			138				
CF		2.80E+04	2.99E+04	3.11E+04	2.96E+04	5	2.81E+04	-5	ND	2.76E+04	-7	ND	0.00E+00	NA
1,1,2,2-Tetrachloroethane	15:60	1125	2635	9363			2404							
CF		4.50E+05	5.27E+05	4.68E+05	4.82E+05	8	4.81E+05	0	ND	0.00E+00	NA	ND	0.00E+00	NA

LCS = Laboratory Control Sample
mg/L = Micrograms per Liter
mL = Microliters
mg = Microgram
RT = Retention Time

ARF = Average Response Factor
%RSD = Percent Relative Standard Deviation
RPD = Relative Percent Difference
%REC = Percent Recovery

CF = Calibration Factor
ND = Not Detected
NA = Not Applicable
PID = Photo-ionization Detector

ANALYST: Ragi Abraham

REVIEWED BY: Duy Mai

TABLE B-3

ENVIRONMENTAL SUPPORT TECHNOLOGIES, INC.

SOIL GAS SURVEYS

REPORTABLE LIMITS OF QUANTITATION FOR HALOGENATED AND AROMATIC HYDROCARBONS

The Reportable Limit of Quantitation for Halogenated and Aromatic Hydrocarbons is 1.0 µg/L when the injection volume is 500 µL. Reportable limits for lesser injection volumes are listed below.

Injection Volume (µL)	Reportable Limit (µg/L)
500	1.0
250	2.0
200	2.5
100	5.0
80	6.3
60	8.3
50	10.0
40	12.5
20	25.0
10	50.0
5	100.0
1	500.0

SUBSURFACE INVESTIGATION REPORT

TO DETERMINE THE EXTENT OF GROUNDWATER CONTAMINATION

-----o-----

AMERICAN ELECTRONICS, INC.

1600 VALENCIA DRIVE

FULLERTON, CALIFORNIA

-----o-----

Prepared by

RAY E. LEWIS CONSULTING ENGINEERS, INC

459 HOLLY STREET

LAGUNA BEACH, CALIFORNIA

(714) 497-1580

RAY E. LEWIS CONSULTING ENGINEERS, INC.
A California Corporation

459 HOLLY STREET
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June 30, 1989

California Regional Water Quality Control Board
Santa Ana Region
6809 Indiana Avenue - Suite 200
Riverside, CA 92506

Attention: Mr. Robert Holub, Chief
Ground Water Investigation Section

Subject: Subsurface Investigation Report
American Electronics, Inc.
1600 Valencia Drive
Fullerton, CA 92631

Dear Sir:

Transmitted herewith is the report on the subsurface investigation as requested by your office of the abovementioned industry. Although soil contamination was found at the southwest corner of the property, there is not conclusive evidence at this time to indicate that this industry is a major contributor to the groundwater problem in the area. It is my recommendation that the soil contamination as found be removed in the near future and that the industry cooperate with your office by quarterly sampling of the three wells to provide additional information in your efforts to determine the major source(s) of the contamination in the area.

It is interesting to note the high levels of nitrates detected in all three wells on the site. This type of contamination may be of interest to you as well as the City and the Orange County Water District.

I will be glad to meet with you and your staff after you have had a chance to review this report. If you have any questions, please do not hestate to call me.

Very truly yours,

Ray E. Lewis, P.E.

cc: Mr. Richard F.Holland
American Electronics, Inc.

TABLE OF CONTENTS

Executive Summary

Introduction 1

Purpose of Report 2

Installation of Monitoring Wells 4

Development of Wells and Water Sampling 5

Assessment of Subsurface Investigation 9

TABLES

Table 1 Monitoring Well No. BP-1 6

Table 2 Monitoring Well No. BP-2 7

Table 3 Monitoring Well No. BP-3 8

APPENDIX A

Photograghs of Monitoring Well Installation
Figures 1 through 8

APPENDIX B

Survey notes for location of monitoring wells
Sieve analysis of soil to determine well screen sizing
Laboratory analysis of soil samples
Laboratory analysis of water samples

APPENDIX C

Well data of four wells in vicinity
OCWD GC analysis for volatile organics
Area map of soil gas survey by OCWD
Groundwater Contour Map - November 1, 1988

INSIDE POCKET OF REPORT

Survey of AEI property locating monitoring wells

EXECUTIVE SUMMARY

Ray E. Lewis, P.E. of Ray E. Lewis Consulting Engineers, Inc. was retained by American Electronics, Inc. (AEI) of Fullerton to conduct a subsurface investigation on their site pursuant to a request by the Regional Water Quality Control Board - Santa Ana Region (RWQCB). This subsurface investigation as requested by the RWQCB was based on evidence of contamination detected on the property of AEI and because of the RWQCB desire to locate the source(s) of contamination which are affecting drinking water wells in the area.

Three monitoring wells were installed with soil samples taken during the well drilling operation. After the installation of the wells, water samples were taken to determine the extent of contamiantion of the groundwaters in the area.

Based on the results of this subsurface investigation contained in this report and data collected from other agencies, soil contamination was found to exist at the southwesterly corner of AEI's property possibly from past operations. Ground water contamination was also detected in all three wells installed. Some of the contamination may be from the contaminated soil detected on site, but it is evident that some of the contamination is coming from other sources of site.

American Electronics, Inc. appears to be a well-managed facility with a high respect for environmnetal compliance. The manufacturing operations are cleanly run and there is a clear awareness of environmental concerns and desire for compliance.

It is therefore recommended that the following be considered by the RWQCB in this matter to help mitigate the contamination of the groundwaters in this area:

1. *That quarterly water samples be taken from each of the three monitoring wells commencing during the month of July, 1989 (three months after the initial water sampling program. This program should terminate one year from the date of this report unless it is determined that further sampling and analysis would help in this mitigation program. All sampling and analysis shall be reported to the RWQCB.*

2. *That within 90 days of this report, that AEI submit to the RWQCB a program to mitigate the soil contamination observed in the upper 50 feet of the property at the southwest corner of th site. In-situ removal may be one of the better methods to be considered.*

3. *That the results of the Orange County Water District survey be coordinated with any investigation conducted on the site of AEI.*

4. *That AEI cooperate with the RWQCB in their efforts to determine the source(s) of the contamination which shall include the removal of the soils contamination on their property.*

INTRODUCTION

GENERAL

American Electronics, Inc. was founded in 1945 and presently has five operating divisions in the electrical, electronic and mechanical disciplines. The Electro-Mechanical Instruments Division (E.M.I.) specializes in pancake and standard single and multi-speed resolvers, fractional horsepower AC and DC motors and stepper motors. These products are used in satellites, missiles, ships, aircraft and radar systems, oil well instrumentation packages, medical, geothermal research and other similar applications where the environments range from the vacuum and extreme cold of outer space to the high pressures and temperatures of oil and geothermal applications thousands of feet below the earth's surface.

The Precision Power Division produces alternators, generators and subsystems for aerospace, military, industrial and commercial applications. Some of the units produced include the motor generator set for the Minuteman Missile and the prime power unit for the military's ground to air defense system.

The Quadrant Engineering Division is responsible for the machining of state-of-the-art lofted structural members, hydraulic and fuel valves and other components meeting the stringent needs of the aircraft and spacecraft industry. A preburner valve machined from Inconel 718 billet is used in the Space Shuttle program.

The D/B Cameras Division manufactures electronically actuated film surveilance cameras. Both 16mm and 35mm film surveilance cameras are manufactured for installations in banks, savings and loans and other financial institutions, retail and fast food stores, hotels, motels and other business which wants to deter crime and help law enforcement agencies.

The Dressen-Barnes Electronics Division specializes in the engineering design and manufacture of custom high reliability linear and switching AC and DC power supplies for military and commercial uses. Some military applications include navigation, communication, and fire control for shipboard and ground support equipment.

Presently, American Electronics occupies the facility located in Fullerton which has a 100,000 square foot plant on a site of approximately 5.85 acres. American Electronics Inc. (AEI) has occupies this site since 1960. Prior to the construction of the existing facility the site was used for agriculture purposes (citrus grove).

PURPOSE OF REPORT

In March, 1987, the Regional Water Quality Control Board- Santa Ana Region (RWQCB) notified AEI that results from the sampling of wells in the geographic area that organic contaminants were present in the ground waters. A questionaire was requested from AEI which was completed and returned on April, 8 1987, which included a listing of all known organic compounds including solvents, degreasers, cleaning agents, etc. which may have or presently being used by the industry. This source investigation program was in accordance with AB 1803, enacted by the State legislature in 1983.

In a letter dated October 26, 1988 the RWQCB requested a subsurface investigation by AEI to determine the extent of the contamination migration. This letter set forth certain requirements which was to be instituted by AEI and a work plan was to be submitted to the RWQCB on or before December 1, 1988. This work plan was to include the following:

1. *Plot map of the facility*

2. *List the total quantity of chemicals used and the wastes generated*

3. *Note any treatment or disposal methods used at the facility*

4. *Obtain representative soil samples from on site soil borings in areas where discharges may have occurred*

5. *Install a minimum of three ground water monitoring wells to determine ground water gradient and the quality of the water up and down gradient of the site*

6. *Provide a report of the investigation findings*

7. *Provide a description of quality assurance and quality control procedures.*

On November 14, 1988, Ray E. Lewis, P.E. of Ray E. Lewis Consulting Engineers, Inc. (REL) entered into a professional contract to provide the necessary information requested by the RWQCB. Subsequent to this professional contract, the following has been performed:

A. *A work plan was submitted by REL to the RWQCB on December 13, 1988 for their review and comment.*

B. *On December 23, 1988, the RWQCB responded to the aforementioned work plan with basic concurrence with minor additions and corrections.*

C. *On February 6, 1989, a request for proposals was sent to several qualified contractors who were known to be competent in the installation of monitoring wells in accordnace with the requirements of the regulatory agencies. Because of conflicting work loads, only one qualified contractor submitted a bid for consideration. AEI,*

based on the recommendation of REL, awarded a contract to H-F Drilling, Inc. of Fullerton on March 15, 1989. The basis of the award was not because of company had submitted the only responsive bid to do the work but because of the firm's experience in this type of work. The firm presented project experience which included work with CALTRANS, US Air Force, Morton Thiokol, Montgomery Engineers, Leighton and Associates, and the Metro Rail Consultants of Los Angeles. The project manager for the work was Mr. Grayson R. Walker a Registered Civil Engineer as well as a Registered Geotechnical Engineer in the state of California and had over eleven years experience in conducting and managing geotechnical and hazardous waste drilling programs. Other members of the firms who were envolved with the AEI project included:

Kenneth Law - Fifteen years experience as driller and tool pusher using cable tool, mud and air rotary, and hollow stem auger drill rigs.

Manuel Marquez - Seven years experience with hollow stem auger and rotary drill rigs. Conducted numerous drilling projects involving hazardous waste site assessment and remediation including soil and bedrock sampling and groundwater monitoring and extraction well construction.

D. The installation of the three monitoring wells was commenced on March 22, 1989 and was completed on April 5, with the final collection of the water samples for analysis.

This report is the initial report on the investigation and evaluation of the potential contamination of the ground waters affecting the drinking water supplies in the area and any influence, if any, from the activities associated with the operations of the AEI facility.

INSTALLATION OF MONITORING WELLS

The following is a highlight of the monitoring well installation:

1. *The location of the three monitoring wells were presented to the RWQCB for their concurrence. Well designated as BP-3 was initially to be located on the westerly side of AEI's main building approximately 250 feet southerly from the centerline of Valencia Avenue in a common access driveway serving both AEI and the industry adjacent and to the west. However, it was later determined that AEI did not have ownership to this access roadway and the monitoring well BP-3 was relocated to the northwest corner of AEI's property in a parking lot area. Monitoring well BP-1 was located in the southwest corner of the site in the immediate area where the RWQCB observed contamination from soil vapor monitoring devices in the summer of 1988. Monitoring well BP-2 was installed in the northeast corner of the site near the intersection of Valencia Avenue and Acacia Street. After installation of the three monitoring well, a survey was conducted to fix the exact location of the wells. A copy of the survey is included in the Appendix of this Report.*

2. *In accordance with agreed procedures with the RWQCB, all wells were drilled using a hollow-stem auger with a 6 5/8" hollow auger bit. All wells were drilled to approximately 140 feet below surface to penetrate the existing ground water table in the area.*

3. *Soil samples were taken a prescribed intervals using a split tube sampler with a thin wall liner. The sampler was driven at the prescribed intervals using the Standard Penetration Test as setforth in the A.S.T.M. standards. This standard specifies a 140 lb. weight falling freely 30" to drive a 2" O.D. x 1-3/8" I.D. sampler a distance of one foot. The sampler was driven continously for 18 inches with blow counts recorded for each 6 inches. Tables 1,2 and 3 record the blows and the soil type observed during the drilling operation. The split tube sampler collected three 6-inch sleeve soil samples at each predetermined depth. The 6-inch sleeve at the driving end of the sampler was immediately cap and stored in a ice cooled chest. All samples collected during the drilling operation were delivered to the laboratory for analysis within 30 minutes after collection.*

4. *Sieve analysis was performed to determine the well screen sizing. A copy of the sieve analysis is included in the Appendix of this Report. Based on this analysis, a well screen was selected which has horizontal slots with the following specifications:*

slot size = 0.002 inches (1/32")	*slots/row/ft = 42*
slot opening/row = 0.840 sq. inches	*no. of slots/row = 6*
slot opening/foot = 5.04 sq. inches	*lenght of screen = 20 feet*

5. The well screen was set to extend approximately 15-18 feet into the groundwater. Gravel pack extended approximately 5 feet above the slotted screen with 3 to 4 feet of bentonite above the gravel pack. From the top of the bentonite to the surface, neat cement grout seal was tremied betwenn the bore hole annular space and the well casing.

6. BP-1 was drilled on March 22, BP-3 on March 27, and BP-2 on March 30, 1989. Drilling operation on BP-3 was interrupted because of interference with a high pressure fire water service which was broken after drilling approximatley 6 feet. This well was relocated approximately 10 feet southerly to avoid underground interference. All wells including the installation of the concrete cap and monitoring well cover were completed by March 31, 1989.

DEVELOPMENT OF WELLS AND WATER SAMPLING

The following is a summary of the well development and the water sampling:

1. On April 5, operation was started to develop the monitoring wells and to take water samples for analysis. A surge block was used in each well. A picture of the solid surge block used is included in the Appendix of this Report.

2. A six-foot bailer was used to bail approximately 4 to 5 well volumes before any sampling of the water was done. The water removed during the initial purging program was cloudy and contained very fine colloidal particles. BP-1 was developed initially and water in well was allowed to settle for approximatley one hour before sample were taken for analysis. The samples taken for analysis were also cloudy and contained very fine colloidal particles.

3. BP-2 was the next well to be developed and water samples taken for analysis. After the initial purging, the water was allowed to stand for 15 minutes before water samples were taken. Both the initial purging and the water samples taken contained very fine colloidal particles similar to the water observed in BP-1.

4. No initial purging was done on well BP-3 bacause of the fine particles observed in the other two wells. However, the very fine colloidal particles were also observed even with the water not being disturbed for a period of five days.

5. After collection of the water samples each well cap was was placed on the casing and the manhole screw cap was secured to prevent unauthorized entry.

TABLE NO. 1

American Electornics, Inc.
Monitoring Well No. BP-1

Date Drilled - March 22, 1989

Surface Elevation - 178.37

Depth to Groundwater - 128.1 ft

Groundwater Elevation - 50.27

Depth Interval (feet below ground surface)			Standard Penetration First 6"	Second 6"	Third 6"	Description
5		*	4	3	4	Brown, clayey silt
10		*	3	6	7	"
15		*	5	6	8	"
20		*	12	15	20	Brown,Sandy silt
25		*	4	7	9	Dark brown silty clay
30			3	4	7	"
35			4	5	14	"
40			5	7	10	"
45			5	7	10	"
50	(1)	*	8	12	16	Brown, Clayey fine silt
55			3	5	12	Dark brown clay
60			15	15	21	Brown clayey silt
65			18	28	28	Clayey w/ med. sand
70			25	30	30	"
75			9	11	16	"
80			10	11	20	"
85			18	40	50	Lt. brown med. sand
90			14	15	24	"
95	(2)		10	10	20	"
100		*	5	5	8	Dark brown clayey silt
105			9	13	27	Brown clayey, med.sand
110			20	63	80	Medium sand
115			60	125	--	Med. sand w/ cobbles
120		*	80	90	80	"
125			25	60	70	"
130		*	45	45	--	Medium sand w/ silt
135			--	--	--	--
140		*	--	--	--	--

*NOTES! * denotes level soil sample taken*
(1) soil increased approx. 5 degrees warmer at this level
(2) slight indication of pearched water at this level

TABLE NO. 2

American Electronics, Inc.
Monitoring Well No. BP-2

Date Drilled - March 30, 1989

Surface Elevation - 183.45

Depth to Groundwater - 132.7 ft

Groundwater Elevation - 50.75

Depth Interval (feet below ground surface)		Standard Penetration First 6"	Second 6"	Third 6"	Description
5	*	3	7	10	Brown, sandy silt
10	*	4	9	12	"
15	*	4	10	10	"
20	*	4	10	10	"
25	*	5	7	13	"
50	*	4	6	7	"
100	*	17	30	35	Brown, fine to med. sand

*NOTES! * Denotes level soil samples taken*

Relocated approx. 15 feet southerly from initial location because of underground and overhead utility interference

TABLE NO. 3

American Electronics, Inc.
Monitoring Well No. BP-3

Date Drilled - March 27, 1989

Surface Elevation - 181.12

Depth to Groundwater - 131.4 ft

Groundwater Elevation - 49.72

Depth Interval (feet below ground surface)		Standard Penetration First 6"	Second 6"	Third 6"	Description
5	*	4	5	7	Brown, clayey silt
10	*	4	5	9	"
15	*	4	4	6	"
20	*	6	6	9	"
25	*	4	6	10	"
50	*	4	16	16	Tan, fine silty clay
100	*	40	35	35	Brown, fine to med. sand

*NOTES! *Denotes level soil samples taken*

Relocated from initial location because of right-of-way and utility interference

ASSESSMENT OF SUBSURFACE INVESTIGATION

In addition to the installation of the three monitoring wells, the soils sampling and the analysis of water samples, contacts were made with representatives of the Orange County Water District and the City of Fullerton Water Department. The following information was obtained from these agencies:

Orange County Water District - The District is presently conducting an extensive soil gas survey in this portion of Fullerton and Anaheim. A copy of the survey area is included in the Appendix of this Report. The final report on this survey will not be available until late summer, 1989. A groundwater contour map dated November 1, 1988 was also obtained which show the AEI site at the 50-foot contour level which was confirmed by measurement. Copies of OCWD GC analysis for volatile organics for four wells within a one mile radius of the AEI site was also obtained. A brief summary of these analysis are as follows:

1. *WELL NO. 4S/10W-1F 1 - Anaheim Well #26*
   Located approximately one mile southeasterly from AEI site
   Chloroform and Tetrachloroethylene (PCE) detected
   EC @ 25 C = 946
   Date of sample = 2/13/89

2. *WELL NO. 3S/10W - 35R1 - Fullerton Kimberly No. 2*
   Located approximately 2000 feet southeasterly from the AEI site
   Chloroform, Trichloroethylene (TCE) and PCE detected
   Date of sample = 2/28/89

3. *WELL NO. 3S/10W - 35N1 - Fullerton Kimberly No. 1*
   Located approximately 1350 feet southwesterly from the AEI site
   Chloroform and PCE detected
   Date of sample = 10/31/88, 11/28/88 & 1/30/89

4. *WELL NO. 3S/10W - 35K1 - Fullerton Firestation No. 13*
   Located approximatley 300 feet southeasterly from the AEI site
   Chloroform and Toluene detected
   Date of sample = 1/30/89 & 2/28/89

City of Fullerton - The following well operating data was obtained:

WELL - FULLERTON FIRESTATION NO. 13

Date	3/9/89	4/3/89	5/15/89
Grnd Elev.	180.00	180.00	180.00
Depth to WS	137.00	132.00	134.00
Pumping WS	160.00	157.00	155.00
Static Elev	43.00	48.00	46.00
Pumping Elev	20.00	23.00	25.00

WELL - FULLERTON KIMBERLY #2

Date	3/9/89	4/3/89	5/15/89
Grnd Elev	161.20	161.20	161.20
Depth to WS	137.00	131.00	131.00
Pumping WS	145.00	138.00	137.00
Static Elev	45.9	51.9	51.9
Pumping Elev	16.2	23.2	24.2

No information could be obtain from Fullerton Kimberly Well #1 because the levels could not be read.

In review of all the data collected and obtained from the two agencies mentioned above, the following observations can be made:

1. *There is evidence of soil contamination in the upper 50 feet at the location of BP-1. This contamination is probably becuase of past activities of the industry but not of present procedures. There is no evidence of soil contamination at the other to well sites. These locations are in areas where no industrial activities has taken place since the agricultural lands were developed to the existing facility.*

2. *There is evidence of groundwater contamination at all three well locations with a greater degree of contamination detected at well BP-1. The groundwater gradient is to the southwest but more predominantly to the west. Groundwater contamination detected in wells BP-2 and BP-3 are assumed to be from sources outside the boundaries of the AEI property because of the groundwater gradient in the area.*

4. *In addition to the detected contamination from TCE, there is a very high concentration of nitrates observed in each of the three monitoring wells. This may be from past agriculture activities in the area and not from industrial operations.*

5. *Because of the direction of the groundwater gradient, any contamination from the AEI site may affect the City of Fullerton's Kimberly Well No. 1 and perhaps Firestation Well No. 13 because of the draw down during pumping. However, it should be noted that the contaminents detected by the OCWD in these two wells show contamination from chloroform, PCE, and toluene which where not detected at any of the wells on the AEI site. There was a trace of TCE noticed at the Kimberly Well No. 1 on 1/30/89.*

American Electric
Locate Bore holes

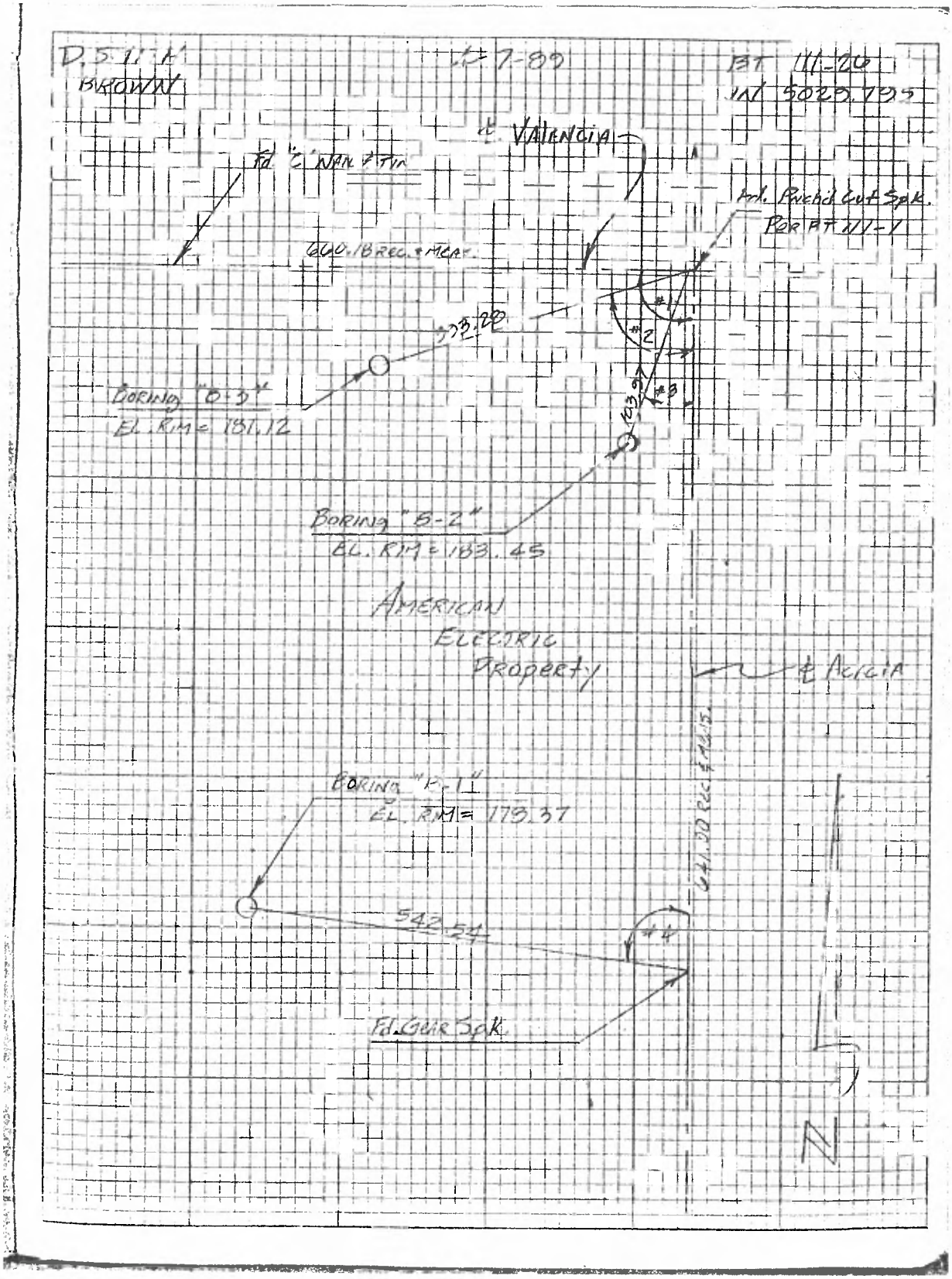
+	H.I.	−	EL.	DESC.
			181.45	BM 402-11-68
0.85	188.30			
		7.18	181.12	B-5
6.91	188.09			
		4.64	183.45	B-[illegible]
4.6[illegible]	187.51			
		6.26	181.25	TP
4.67	185.92			
		7.55	178.37	B-1
8.05	186.42			
		5.5[illegible]	180.92	TP
7.2[illegible]	188.21			
		0.75	187.46	✓ in 2 Orig. B.M.
			(+0.0)	✓

#1
1) 90-1[illegible]-35
2) 180-2[illegible]-20
M) 90-1[illegible]-41
R.C.) 90-13-39

#2
1) 79-08-35
2) 158-17-20
M) 79-08-40

#3
1) 69-20-00
2) 69-20-00
M) 34-40-00

#4
1) 88-02-30
2) 165-05-10
M) 83-02-35



D.5.11 M
BROWN
7-89
BT 111-26
IN 5029.795
℄ VALENCIA
Fd. "C" NAIL & TIN
Fd. Punch'd Cut Spk.
Per BT 111-1
660.18 REC. & MEAS.
333.28
#1
#2
#3
103.97
BORING "B-3"
EL. RIM = 181.12
BORING "B-2"
EL. RIM = 183.45
AMERICAN
ELECTRIC
PROPERTY
℄ ACACIA
BORING "B-1"
EL. RIM = 179.37
542.54
#4
Fd. GEAR Spk.
N

MECHANICAL ANALYSIS

Job No _____ Date March 23, 198

Job Name H-F Drilling, Inc.

TOTAL WET WEIGHT

Moisture _____

Wet Weight _____

Dry Weight _____

Moisture Content _____ %

TOTAL DRY WEIGHT BEFORE TEST 736.0g

BORING NO. _____

Depth, Ft. _____

Soil Descript. _____

Sieve No.	Sieve & Soil	Sieve Weight	Soil Weight	Cumulat Weight	% Retained	% Passing
4	473.0	472.8	0.2	0.2	-	100
8	488.1	483.0	5.1	5.3	0.7	99.3
16	447.6	411.1	36.5	41.8	5.67	94.33
30	590.4	393.7	196.7	238.5	32.4	67.6
50	643.5	358.6	284.9	523.4	71.1	28.9
100	429.7	332.3	97.4	620.8	84.35	15.65
200	365.0	318.6	46.4	667.2	90.65	9.35

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT

Lewis & Associates (1526)
459 Holly Street
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO. F61920-01

REPORTED 03/28/89

SAMPLE Soil Borings

RECEIVED 03/22/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton

BASED ON SAMPLE As Submitted

	BP-1 @ 5'	BP-1 @ 10'	BP-1 @ 15'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020) (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method 8010			
Tetrachloroethylene	0.98 mg/kg	1.11 mg/kg	0.28 mg/kg
Trichloroethylene	0.17 mg/kg	0.07 mg/kg	0.06 mg/kg

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/ql

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 30 days from date reported.

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CLIENT

Lewis & Associates (1526)
459 Holly Street
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO. F61920-01

REPORTED 03/28/89

SAMPLE Soil Borings

RECEIVED 03/22/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton

BASED ON SAMPLE As Submitted

	BP-1 @ 20'	BP-1 @ 25'	BP-1 @ 50'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020) (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method 8010			
Tetrachloroethylene	* ND	0.07 mg/kg	0.09 mg/kg
Trichloroethylene	* ND	0.11 mg/kg	0.14 mg/kg

* None Detected
All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/ql

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ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT

Lewis & Associates (1526)
459 Holly Street
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO. F61920-03

REPORTED 03/28/89

SAMPLE Soil Borings

RECEIVED 03/22/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton

BASED ON SAMPLE As Submitted

	BP-1 @ 100'	BP-1 @ 120'	BP-1 @ 130'	BP-1 @ 140'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020) (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method 8010	* ND	* ND	* ND	* ND

* All compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/ql

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Client: Lewis & Associates
Lab No.: F61920
Date: March 28, 1989

PURGEABLE ORGANICS - EPA METHOD 8010	LIMITS OF DETECTION
Chloromethane	10 µg/kg
Bromomethane	10 µg/kg
Dichlorodifluoromethane	10 µg/kg
Vinyl chloride	10 µg/kg
Chloroethane	10 µg/kg
Methylene chloride	10 µg/kg
Trichlorofluoromethane	10 µg/kg
1,1-Dichloroethene	10 µg/kg
1,1-Dichloroethane	10 µg/kg
trans-1,2-Dichloroethene	10 µg/kg
Chloroform	10 µg/kg
1,2-Dichloroethane	10 µg/kg
1,1,1-Trichloroethane	10 µg/kg
Carbon tetrachloride	10 µg/kg
Bromodichloromethane	10 µg/kg
1,2-Dichloropropane	10 µg/kg
trans-1,3-Dichloropropene	10 µg/kg
Trichloroethene	10 µg/kg
Dibromochloromethane	10 µg/kg
1,1,2-Trichloroethane	10 µg/kg
cis-1,3-Dichloropropene	10 µg/kg
2-Chloroethylvinyl ether	10 µg/kg
Bromoform	10 µg/kg
1,1,2,2-Tetrachloroethane	10 µg/kg
Tetrachloroethene	10 µg/kg
Chlorobenzene	10 µg/kg
1,3-Dichlorobenzene	10 µg/kg
1,2-Dichlorobenzene	10 µg/kg
1,4-Dichlorobenzene	10 µg/kg

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900 FAX 714/538-1209

CLIENT

Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO F63034-01
REPORTED 04/06/89

SAMPLE Soil
RECEIVED 03/30/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton
As Submitted

BASED ON SAMPLE

	BP-2 @ 05'	BP-2 @ 10'	BP-2 @ 15'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl-Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020)(mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method (8010)	None Detected	None Detected	None Detected

All compounds were None Detected, see attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/hl

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CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO F63034-02
REPORTED 04/06/89

SAMPLE Soil
RECEIVED 03/30/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton
As Submitted

BASED ON SAMPLE

	BP-2 @ 20'	BP-2 @ 25'	BP-2 @ 50'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl-Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020)(mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method (8010)	None Detected	None Detected	None Detected

All compounds were None Detected, see attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/hl

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CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO F63034-03
REPORTED 04/06/89

SAMPLE Soil
IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton
BASED ON SAMPLE As Submitted

RECEIVED 03/30/89

	BP-2 @ 100'	
Total Hydrocarbons (TPH - DHS)	ND<10	mg/kg
Benzene	ND< 0.05	mg/kg
Toluene	ND< 0.05	mg/kg
Ethyl-Benzene	ND< 0.1	mg/kg
Total Xylenes (8020)	ND< 0.1	mg/kg
EPA Method (8010)	None Detected	

All compounds were None Detected, see attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/hl

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Client: Lewis & Associates
Lab # : F63034
Date : April 6, 1989

PURGEABLE ORGANICS - EPA METHOD 8010	LIMITS OF DETECTION
Chloromethane	10 µg/kg
Bromomethane	10 µg/kg
Dichlorodifluoromethane	10 µg/kg
Vinyl chloride	10 µg/kg
Chloroethane	10 µg/kg
Methylene chloride	10 µg/kg
Trichlorofluoromethane	10 µg/kg
1,1-Dichloroethene	10 µg/kg
1,1-Dichloroethane	10 µg/kg
trans-1,2-Dichloroethene	10 µg/kg
Chloroform	10 µg/kg
1,2-Dichloroethane	10 µg/kg
1,1,1-Trichloroethane	10 µg/kg
Carbon tetrachloride	10 µg/kg
Bromodichloromethane	10 µg/kg
1,2-Dichloropropane	10 µg/kg
trans-1,3-Dichloropropene	10 µg/kg
Trichloroethene	10 µg/kg
Dibromochloromethane	10 µg/kg
1,1,2-Trichloroethane	10 µg/kg
cis-1,3-Dichloropropene	10 µg/kg
2-Chloroethylvinyl ether	10 µg/kg
Bromoform	10 µg/kg
1,1,2,2-Tetrachloroethane	10 µg/kg
Tetrachloroethene	10 µg/kg
Chlorobenzene	10 µg/kg
1,3-Dichlorobenzene	10 µg/kg
1,2-Dichlorobenzene	10 µg/kg
1,4-Dichlorobenzene	10 µg/kg

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806 North Batavia - Orange, California 92668 - 714/771-6900 FAX 714/538-1209

CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO F62080-01
REPORTED 04/03/89

SAMPLE Soil
RECEIVED 03/27/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton
As Submitted

BASED ON SAMPLE

	BP-3 @ 05'	BP-3 @ 10'	BP-3 @ 15'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl-Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020)(mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method (8010)	None Detected	None Detected	None Detected

All compounds were None Detected, see attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/hl

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C-1 10M

ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900 FAX 714/538-1209

CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

Attn: Ray E. Lewis, President

LAB NO F62080-02
REPORTED 04/03/89

SAMPLE Soil
RECEIVED 03/27/89

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton
As Submitted

BASED ON SAMPLE

	BP-3 @ 20'	BP-3 @ 25'	BP-3 @ 50'
Benzene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05	ND< 0.05
Ethyl-Benzene (mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
Total Xylenes (8020)(mg/kg)	ND< 0.1	ND< 0.1	ND< 0.1
EPA Method (8010)	None Detected	None Detected	None Detected

All compounds were None Detected, see attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

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CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

Attn: Ray E. Lewis

LAB NO F62080-03
REPORTED 04/03/89
RECEIVED 03/27/89

SAMPLE Soil

IDENTIFICATION American Electronics
1600 E. Valencia, Fullerton
As Submitted

BASED ON SAMPLE

	BP-3 @ 100'	BP-3 @ 140'
Benzene (mg/kg)	ND< 0.05	ND< 0.05
Toluene (mg/kg)	ND< 0.05	ND< 0.05
Ethyl-Benzene (mg/kg)	ND< 0.1	ND< 0.1
Total Xylenes (8020)(mg/kg)	ND< 0.1	ND< 0.1
EPA Method (8010)	None Detected	None Detected

All other compounds were None Detected, see attached list.

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C-1 10M

Client: Lewis & Associates
Lab # : F62080
Date : April 3, 1989

PURGEABLE ORGANICS - EPA METHOD 8010	LIMITS OF DETECTION
Chloromethane	0.01 mg/kg
Bromomethane	0.01 mg/kg
Dichlorodifluoromethane	0.01 mg/kg
Vinyl chloride	0.01 mg/kg
Chloroethane	0.01 mg/kg
Methylene chloride	0.01 mg/kg
Trichlorofluoromethane	0.01 mg/kg
1,1-Dichloroethene	0.01 mg/kg
1,1-Dichloroethane	0.01 mg/kg
trans-1,2-Dichloroethene	0.01 mg/kg
Chloroform	0.01 mg/kg
1,2-Dichloroethane	0.01 mg/kg
1,1,1-Trichloroethane	0.01 mg/kg
Carbon tetrachloride	0.01 mg/kg
Bromodichloromethane	0.01 mg/kg
1,2-Dichloropropane	0.01 mg/kg
trans-1,3-Dichloropropene	0.01 mg/kg
Trichloroethene	0.01 mg/kg
Dibromochloromethane	0.01 mg/kg
1,1,2-Trichloroethane	0.01 mg/kg
cis-1,3-Dichloropropene	0.01 mg/kg
2-Chloroethylvinyl ether	0.01 mg/kg
Bromoform	0.01 mg/kg
1,1,2,2-Tetrachloroethane	0.01 mg/kg
Tetrachloroethene	0.01 mg/kg
Chlorobenzene	0.01 mg/kg
1,3-Dichlorobenzene	0.01 mg/kg
1,2-Dichlorobenzene	0.01 mg/kg
1,4-Dichlorobenzene	0.01 mg/kg

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806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

LAB NO. F63355-01
REPORTED 04/18/89

SAMPLE Water
RECEIVED 04/05/89
IDENTIFICATION American Electronics
BASED ON SAMPLE As Submitted to Our Mobile Laboratory

	BP-1	BP-2	BP-3
Electrical Conductivity (μmhos/cm)	1,730	1,750	1,700
Temperature	23.9°C	26.7°C	29.2°C
pH	7.45	7.36	7.39

Inorganic Chemical Analysis

Arsenic	0.002 mg/l	0.007 mg/l	ND<0.001 mg/l
Barium	0.11 mg/l	0.35 mg/l	0.15 mg/l
Cadmium	ND<0.004 mg/l	ND<0.004 mg/l	ND<0.004 mg/l
Chromium, Total	0.03 mg/l	0.09 mg/l	0.03 mg/l
Lead	0.006 mg/l	0.01 mg/l	ND<0.001 mg/l
Mercury	0.001 mg/l	ND<0.0005 mg/l	ND<0.0005 mg/l
Nitrate	130.7 mg/l	121.4 mg/l	109.8 mg/l
Nitrogen	29.5 mg/l	27.4 mg/l	24.8 mg/l
Selenium	0.004 mg/l	0.01 mg/l	ND<0.001 mg/l
Silver	ND<0.007 mg/l	0.03 mg/l	ND<0.007 mg/l
Fluoride	0.37 mg/l	0.36 mg/l	0.37 mg/l

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CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

LAB NO. F63355-02
REPORTED 04/18/89

SAMPLE Water
RECEIVED 04/05/89
IDENTIFICATION American Electronics
BASED ON SAMPLE As Submitted to Our Mobile Laboratory

EPA Method 602	BP-1A	BP-1B	BP-2ê
Benzene	ND<0.0005 mg/l	ND<0.0005 mg/l	ND<0.0005 mg/l
Toluene	ND<0.001 mg/l	ND<0.001 mg/l	ND<0.001 mg/l
Ethyl Benzene	ND<0.002 mg/l	ND<0.002 mg/l	ND<0.002 mg/l
Total Xylenes	ND<0.002 mg/l	ND<0.002 mg/l	ND<0.002 mg/l
EPA Method 601			
Trichloroethylene	0.29 mg/l	0.21 mg/l	0.04 mg/l

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

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RAW/ql

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ASSOCIATED LABORATORIES
806 North Batavia - Orange, California 92668 - 714/771-6900

CLIENT
Lewis & Associates (1526)
459 Holly St.
Laguna Beach, CA 92651

LAB NO. F63355-03
REPORTED 04/18/89

SAMPLE Water
RECEIVED 04/05/89
IDENTIFICATION American Electronics
BASED ON SAMPLE As Submitted to Our Mobile Laboratory

EPA Method 602	BP-2B	BP-3A	BP-3δ
Benzene	ND<0.0005 mg/l	ND<0.0005 mg/l	ND<0.0005 mg/l
Toluene	ND<0.001 mg/l	ND<0.001 mg/l	ND<0.001 mg/l
Ethyl Benzene	ND<0.002 mg/l	ND<0.002 mg/l	ND<0.002 mg/l
Total Xylenes	ND<0.002 mg/l	ND<0.002 mg/l	ND<0.002 mg/l
EPA Method 601			
Trichloroethylene	0.03 mg/l	0.04 mg/l	0.04 mg/l

All other compounds were None Detected. See attached list.

ASSOCIATED LABORATORIES

Robert A. Webber

RAW/ql

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Client: Lewis & Associates
Lab No.: F63355
Date: April 18, 1989

PURGEABLE ORGANICS - EPA METHOD 601	LIMITS OF DETECTION
Chloromethane	0.01 mg/l
Bromomethane	0.01 mg/l
Dichlorodifluoromethane	0.01 mg/l
Vinyl chloride	0.01 mg/l
Chloroethane	0.01 mg/l
Methylene chloride	0.01 mg/l
Trichlorofluoromethane	0.01 mg/l
1,1-Dichloroethene	0.01 mg/l
1,1-Dichloroethane	0.01 mg/l
trans-1,2-Dichloroethene	0.01 mg/l
Chloroform	0.01 mg/l
1,2-Dichloroethane	0.01 mg/l
1,1,1-Trichloroethane	0.01 mg/l
Carbon tetrachloride	0.01 mg/l
Bromodichloromethane	0.01 mg/l
1,2-Dichloropropane	0.01 mg/l
trans-1,3-Dichloropropene	0.01 mg/l
Trichloroethene	0.01 mg/l
Dibromochloromethane	0.01 mg/l
1,1,2-Trichloroethane	0.01 mg/l
cis-1,3-Dichloropropene	0.01 mg/l
2-Chloroethylvinyl ether	0.01 mg/l
Bromoform	0.01 mg/l
1,1,2,2-Tetrachloroethane	0.01 mg/l
Tetrachloroethene	0.01 mg/l
Chlorobenzene	0.01 mg/l
1,3-Dichlorobenzene	0.01 mg/l
1,2-Dichlorobenzene	0.01 mg/l
1,4-Dichlorobenzene	0.01 mg/l

106

SWN: 4S/10W-1F 1 8,17
WPFN: 74-01-4B
OID: Anaheim Well #26
USE: MUN

OWNER: City of Anaheim
ADDRESS: 518 S. Anaheim Blvd.
Anaheim, CA 92505 Att: Utilities Dir.
PHONE:

DRILLED BY: M. W. Archer
ADDRESS: Anaheim, CA
DATE DRILLED: 1926
LOG ON FILE: yes

EXACT WELL LOCATION: [redacted]

DEPTH: 411' DIA: 20"
SPECIFIC DEPTH OF PERFORATIONS:
(266'-383')

KIND OF PUMP: SUBMERSIBLE Byron-Jackson
METER NO.: 78471(c) HP: 2503
FREQ. OF SAMPLING:
GR OR RP ELEVATION: 195'
RP 197.8'

REMARKS: 12" discharge

4/10-1F1 AWA

OCWD E-13

51

SWN: 3S/10W-35K1 7,16
WPFN: 33-270-14A
OID: Firestation Well #3
USE: MUN

OWNER: City of Fullerton
ADDRESS: 303 W. Commonwealth
Fullerton, Ca 92632 Attn: Larry Sears
PHONE:

DRILLED BY: Water Well Supply
ADDRESS: Santa Fe Springs, Ca.
DATE DRILLED: 4/21/64
LOG ON FILE: Yes

EXACT WELL LOCATION: [redacted]

DEPTH: 454' DIA: 18"
SPECIFIC DEPTH OF PERFORATIONS:
(351'-419')

KIND OF PUMP: U.S. Pump
METER NO.: 48090 C&S HP: 150
FREQ. OF SAMPLING:
GR OR RP ELEVATION: 180.0

REMARKS: 10" discharge Key Well #5

3/10-35K1 FUL

OCWD E-13

53

SWN: 3S/10W-35R1 7,1
WPFN: 73-12-13A
OID: Kimberly Well #2
USE: MUN

OWNER: City of Fullerton
ADDRESS: 303 W. Commonwealth
Fullerton, Ca. 92632 Attn: Larry Sears
PHONE:

DRILLED BY: Water Well Supply
ADDRESS: Norwalk, Ca
DATE DRILLED: 11/18/55
LOG ON FILE: Yes

EXACT WELL LOCATION: WA-Controlled/Critical Infrastructure - Water Assessments

DEPTH: 652' DIA: 18"
SPECIFIC DEPTH OF PERFORATIONS:
(320'-414') (620'-626')
(520'-526')
(564'-612')

KIND OF PUMP: elect. Smithway Vertical Turbine
METER NO.: 32449 HP: 150
FREQ. OF SAMPLING:
GR OR RP ELEVATION: 182.9

REMARKS: 10" discharge

3/10-35R1 FUL

OCWD E-13

52

SWN: 3S/10W-35N1 7,16
WPFN: 73-11-6A
OID: Kimberly Well #1
USE: DOM

OWNER: City of Fullerton
ADDRESS: 303 W. Commonwealth
Fullerton, Ca. 92632 Attn: Larry Sears
PHONE:

DRILLED BY: Water Well Supply
ADDRESS: Norwalk, Ca.
DATE DRILLED: 9/7/55
LOG ON FILE: Yes

EXACT WELL LOCATION: WA-Controlled/Critical Infrastructure - Water Assessments

DEPTH: 610' DIA: 12"
SPECIFIC DEPTH OF PERFORATIONS:
(339'-347')
(394'-444')
(562'-572')

KIND OF PUMP: elec Smithway Vertical Turbine
METER NO.: 8759 C&S HP: 75
FREQ. OF SAMPLING:
GR OR RP ELEVATION: 161.2

REMARKS: 8" discharge

3/10-35N1 FUL

OCWD E-13

OCWD GC ANALYSIS
FOR VOLATILE ORGANICS

4110-1F1
State Well Number
Sample Site Information:

3-89

ANAHEIM M26

DATE SAMPLED	2-13-89						
DATE ANALYZED	2-20-89						
SAMPLED BY	GR						
EPA METHOD USED FOR ANALYSIS	502.2						
CONSTITUENTS (µg/L)							
Chloromethane	ND						
Bromomethane	ND						
Vinyl Chloride	ND						
Chloroethane	ND						
Methylene Chloride	ND						
1,1 Dichloroethylene (DCE)	ND						
1,1 Dichloroethane	ND						
Chloroform	0.7						
Carbon Tetrachloride	ND						
1,2-Dichloropropane	ND						
Trichloroethylene (TCE)	ND						
1,1,2- Trichloroethane	ND						
Dibromochloromethane	ND						
Tetrachloroethylene (PCE)	3.0						
Chlorobenzene	ND						
1,2 Dichlorobenzene	ND						
1,3 Dichlorobenzene	ND						
1,4 Dichlorobenzene	ND						
Trichlorofluoromethane	ND						
t- 1,2- Dichloroethylene	ND						
1,2 Dichloroethane	ND						
1,1,1 Trichloroethane (TCA)	TR.						
Bromodichloromethane	ND						
t- 1,3-Dichloropropene	ND						
c- 1,3-Dichloropropene	ND						
Benzene	ND						
Bromoform	ND						
1,1,2,2-Tetrachloroethane	ND						
Toluene	1.5 TR						
Ethylbenzene	ND						
EC @ 25°C (µmho/cm)	—						
TOC (mg/L)	—						

ENTERED APR 10 1989

0.5 µg/L as reportable detection limit on all constituents listed on this page
Remarks on other side.

LAB:GCform:REV 10/13/88
ocwd lab-21

N.D.- non-detect
N.A.- not analyzed
TR.- Trace-constituent was seen, but below reportable detection limit.

OCWD GC ANALYSIS FOR VOLATILE ORGANICS

4/10-1F1
State Well Number
Sample Site Information: ANAHEIM #26

DATE SAMPLED	2-13-89						
DATE ANALYZED	2-20-89						
SAMPLED BY	GE						
EPA METHOD USED FOR ANALYSIS	502.2						
CONSTITUENTS (ug/L)							
Dichlorodifluoromethane	ND						
2,2-Dichloropropane	ND						
c-1,2-Dichloroethylene	ND						
Bromochloromethane	ND						
1,1-Dichloropropene	ND						
Dibromomethane	ND						
1,3- Dichloropropane	ND						
1,2-Dibromoethane	ND						
1,1,1,2-Tetrachloroethane	ND						
m-xylene	ND						
p-xylene	ND						
o-xylene	ND						
Styrene	ND						
Isopropylbenzene	ND						
1,2,3- Trichloropropane	ND						
n-Propylbenzene	ND						
Bromobenzene	ND						
1,3,5-Trimethylbenzene	ND						
2- Chlorotoluene	ND						
4- Chlorotoluene	ND						
tert-Butylbenzene	ND						
1,2,4-Trimethylbenzene	ND						
sec-Butylbenzene	ND						
p-Isopropyltoluene	ND						
n-Butylbenzene	ND						
1,2-Dibromo-3-Chloropropane	ND						
1,2,4-Trichlorobenzene	ND						
Hexachlorobutadiene	ND						
Naphthalene	ND						
1,2,3-Trichlorobenzene	ND						
EC @ 25°C (µmho/cm)	946						
TOC (mg/L)	0.9						

ug/L as reportable detection limit on all constituents listed on this page

Remarks on other side.

LAB:GCform:REV 10/13/88
ocwd lab-21

N.D.-non-detect
N.A.-not analyzed
TR. Trace-constituent was seen, but below reportable detection limit.

OCWD GC ANALYSIS FOR VOLATILE ORGANICS

3S/10W-35R1
STATE WELL NUMBER

SAMPLE SITE INFORMATION:
FULLERTON
KIMBERLY NO.2

DATE SAMPLED	2-28-89						
DATE ANALYZED	3-8-89						
SAMPLED BY	GW						
EPA METHOD USED FOR ANALYSIS	502.2						
CONSTITUENTS (ug/L)							
Chloromethane	ND						
Bromomethane	ND						
Vinyl Chloride	ND						
Chloroethane	ND						
Methylene Chloride	ND						
1,1 Dichloroethylene (DCE)	ND						
1,1 Dichloroethane	ND						
Chloroform	1.4						
Carbon Tetrachloride	ND						
1,2-Dichloropropane	ND						
Trichloroethylene (TCE)	0.7						
1,1,2- Trichloroethane	ND						
Dibromochloromethane	ND						
Tetrachloroethylene (PCE)	3.3						
Chlorobenzene	ND						
1,2 Dichlorobenzene	ND						
1,3 Dichlorobenzene	ND						
1,4 Dichlorobenzene	ND						
Trichlorofluoromethane	ND						
t- 1,2- Dichloroethylene	ND						
1,2 Dichloroethane	ND						
1,1,1 Trichloroethane (TCA)	ND						
Bromodichloromethane	ND						
t- 1,3-Dichloropropene	ND						
c- 1,3-Dichloropropene	ND						
Benzene	ND						
Bromoform	ND						
1,1,2,2-Tetrechloroethane	ND						
Toluene	ND						
Ethylbenzene	ND						
EC @ 25°C (µmho/cm)	—						
TOC (mg/L)	—						

FIELD REMARKS:
2-28-89: SAMPLE OBTAINABLE ONLY FROM SPIGOT 5' SOUTHEAST OF WELL

0.5 µg/L as reportable detection limit on all constituents listed on this page
TR - Trace constituent was seen but below reportable detection limit
N.D. - Not Detected
N.A. - Not Analyzed

Lab-21 (10-88)

RECEIVED
MAR 20 1989

OCWD GC ANALYSIS
FOR VOLATILE ORGANICS

3/10 - 35N1
State Well Number

Sample Site Information:
KIMBERLY #1, FULLERTON

DATE SAMPLED	10-31-88	11-28-88	1-30-89
DATE ANALYZED	11-7-88	12-11-88	2-3-89
SAMPLED BY	DS	DS	GW
EPA METHOD USED FOR ANALYSIS	502.2	502.2	502.2
CONSTITUENTS (µg/L)			
Chloromethane	ND	ND	ND
Bromomethane	ND	ND	ND
Vinyl Chloride	ND	ND	ND
Chloroethane	ND	ND	ND
Methylene Chloride	ND	ND	ND
1,1 Dichloroethylene (DCE)	ND	ND	ND
1,1 Dichloroethane	ND	ND	ND
Chloroform	1.4	1.3	2.3
Carbon Tetrachloride	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND
Trichloroethylene (TCE)	ND	ND	TR
1,1,2- Trichloroethane	ND	ND	ND
Dibromochloromethane	ND	ND	ND
Tetrachloroethylene (PCE)	TR	0.6	0.5
Chlorobenzene	ND	ND	ND
1,2 Dichlorobenzene	ND	ND	ND
1,3 Dichlorobenzene	ND	ND	ND
1,4 Dichlorobenzene	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND
t- 1,2- Dichloroethylene	ND	ND	ND
1,2 Dichloroethane	ND	ND	ND
1,1,1 Trichloroethane (TCA)	ND	ND	ND
Bromodichloromethane	ND	ND	ND
t- 1,3-Dichloropropene	ND	ND	ND
c- 1,3-Dichloropropene	ND	ND	ND
Benzene	ND	ND	ND
Bromoform	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND
Toluene	ND	ND	ND
Ethylbenzene	ND	ND	ND
EC @ 25°C (µmho/cm)	—	—	—
TOC (mg/L)	—	—	—

ENTERED APR 10 1989

0.5 µg/L as reportable detection limit on all constituents listed on this page
Remarks on other side.

LAB:GCform:REV 10/13/88
ocwd lab-21

N.D.- non-detect
N.A.- not analyzed
TR.- Trace-constituent was seen, but below reportable detection limit.

OCWD GC ANALYSIS FOR VOLATILE ORGANICS

3/10-35N1
State Well Number
Sample Site Information:

KIMBERLY MI, FULLERTON

DATE SAMPLED	10-31-88	11-28-88	1-30-89				
DATE ANALYZED	11-9-88	12-11-88	2-3-89				
SAMPLED BY	DS	DS	GW				
EPA METHOD USED FOR ANALYSIS	502.2	502.2	502.2				
CONSTITUENTS (µg/L)							
Dichlorodifluoromethane	ND	ND	ND				
2,2-Dichloropropane	ND	ND	ND				
c-1,2-Dichloroethylene	ND	ND	ND				
Bromochloromethane	ND	ND	ND				
1,1-Dichloropropene	ND	ND	ND				
Dibromomethane	ND	ND	ND				
1,3- Dichloropropane	ND	ND	ND				
1,2-Dibromoethane	ND	ND	ND				
1,1,1,2-Tetrachloroethane	ND	ND	ND				
m-xylene	ND	ND	ND				
p-xylene	ND	ND	ND				
o-xylene	ND	ND	ND				
Styrene	ND	ND	ND				
Isopropylbenzene	ND	ND	ND				
1,2,3- Trichloropropane	ND	ND	ND				
n-Propylbenzene	ND	ND	ND				
Bromobenzene	ND	ND	ND				
1,3,5-Trimethylbenzene	ND	ND	ND				
2- Chlorotoluene	ND	ND	ND				
4- Chlorotoluene	ND	ND	ND				
tert-Butylbenzene	ND	ND	ND				
1,2,4-Trimethylbenzene	ND	ND	ND				
sec-Butylbenzene	ND	ND	ND				
p-Isopropyltoluene	ND	ND	ND				
n-Butylbenzene	ND	ND	ND				
1,2-Dibromo-3-Chloropropane	ND	ND	ND				
1,2,4-Trichlorobenzene	ND	ND	ND				
Hexachlorobutadiene	ND	ND	ND				
Naphthalene	ND	ND	ND				
1,2,3-Trichlorobenzene	ND	ND	ND				
EC @ 25°C (µmho/cm)	1090	1125	1102				
TOC (mg/L)	0.6	0.7	0.7				

µg/L as reportable detection limit on all constituents listed on this page

Remarks on other side.

LAB:GCform:REV 10/13/88
ocwd lab-21

N.D.-non-detect
N.A.-not analyzed
TR. Trace-constituent was seen, but below reportable detection limit.

OCWD GC ANALYSIS
FOR VOLATILE ORGANICS

3/10 - 35K1
State Well Number
Sample Site Information:

FIRESTATION #13, FULLERTON

DATE SAMPLED	10-31-88	11-28-88	1-30-89	2-28-89			
DATE ANALYZED	11-9-88	12-11-88	2-3-89	3-1-89			
SAMPLED BY	DS	DS	GW	GW			
EPA METHOD USED FOR ANALYSIS	502.2	502.2	502.2	502.2			
CONSTITUENTS (µg/L)							
Chloromethane	ND	ND	ND	ND			
Bromomethane	ND	ND	ND	ND			
Vinyl Chloride	ND	ND	ND	ND			
Chloroethane	ND	ND	ND	ND			
Methylene Chloride	ND	ND	ND	ND			
1,1 Dichloroethylene (DCE)	ND	ND	ND	ND			
1,1 Dichloroethane	ND	ND	ND	ND			
Chloroform	0.6	TR	1.0	0.6			
Carbon Tetrachloride	ND	ND	ND	ND			
1,2-Dichloropropane	ND	ND	ND	ND			
Trichloroethylene (TCE)	ND	ND	ND	ND			
1,1,2- Trichloroethane	ND	ND	ND	ND			
Dibromochloromethane	ND	ND	ND	ND			
Tetrachloroethylene (PCE)	TR	ND	ND	ND			
Chlorobenzene	ND	ND	ND	ND			
1,2 Dichlorobenzene	ND	ND	ND	ND			
1,3 Dichlorobenzene	ND	ND	ND	ND			
1,4 Dichlorobenzene	ND	ND	ND	ND			
Trichlorofluoromethane	ND	ND	ND	ND			
t- 1,2- Dichloroethylene	ND	ND	ND	ND			
1,2 Dichloroethane	ND	ND	ND	ND			
1,1,1 Trichloroethane (TCA)	ND	ND	ND	ND			
Bromodichloromethane	ND	ND	ND	ND			
t- 1,3-Dichloropropene	ND	ND	ND	ND			
c- 1,3-Dichloropropene	ND	ND	ND	ND			
Benzene	ND	ND	ND	ND			
Bromoform	ND	ND	ND	ND			
1,1,2,2-Tetrachloroethane	ND	ND	ND	ND			
Toluene	ND	ND	ND	2.6*			
Ethylbenzene	ND	ND	ND	ND			
EC @ 25°C (µmho/cm)	—	—	—	—			
TOC (mg/L)	—	—	—	—			

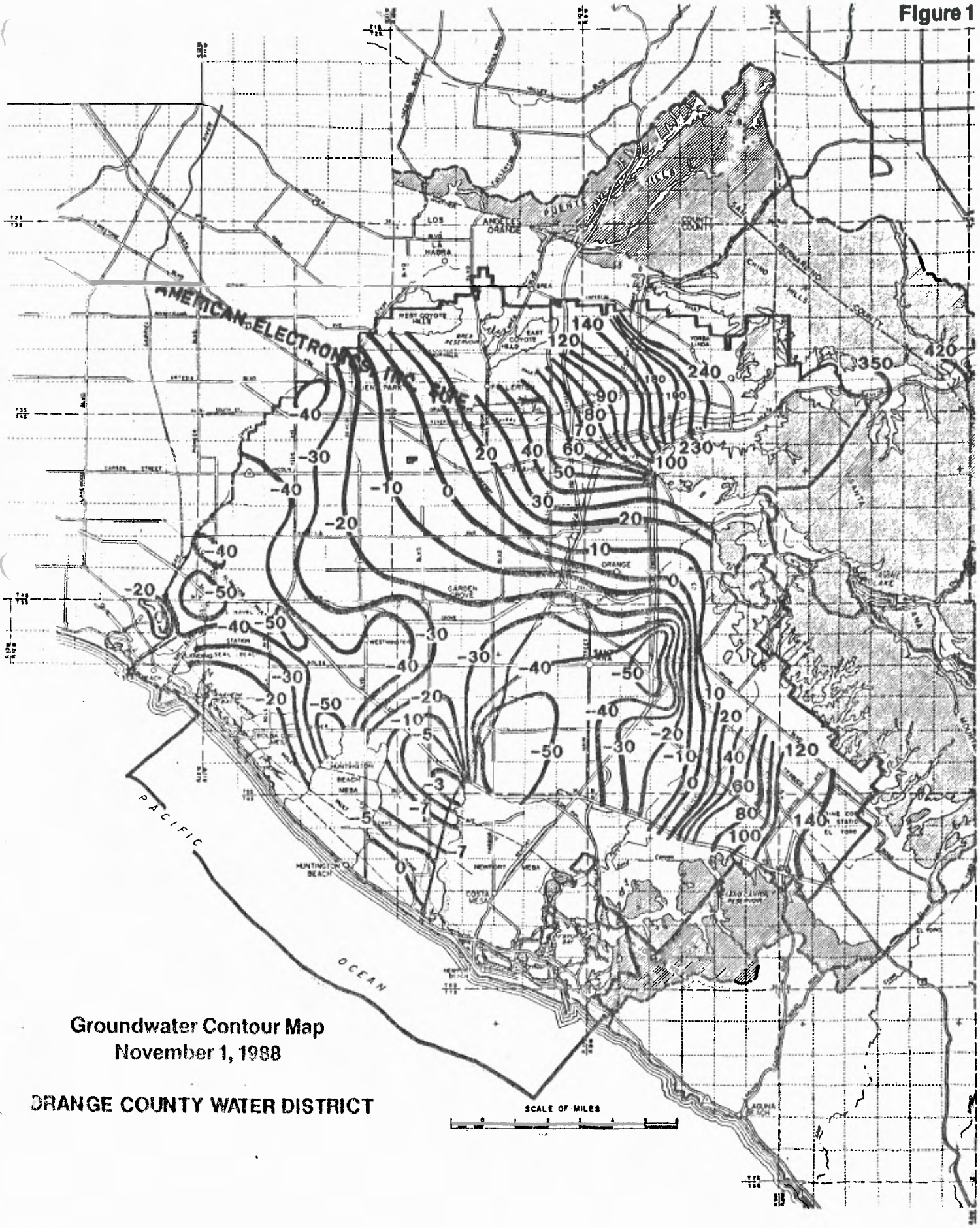
0.5 µg/L as reportable detection limit on all constituents listed on this page
Remarks on other side.

LAB:GCform:REV 10/13/88
ocwd lab-21

N.D.- non-detect
N.A.- not analyzed
TR.- Trace-constituent was seen, but below reportable detection limit.

ENTERED APR 10 1989

Figure 1



Groundwater Contour Map
November 1, 1988

ORANGE COUNTY WATER DISTRICT

FULLERTON
Fullerton Jr College
Wilshire Jr High Sch
AMERICAN ELECTRONICS INC. SITE
COMMONWEALTH
UNION AVE
NUTWOOD
ATCHISON
SANTA FE
Fullerton
Richman Sch
Woodcrest Sch
Shopping Center
Drive-in Theater
FREEWAY
Raymond Retarding Basin
St Anthony
Sycamore Jr High Sch
Pearson Park
Shopping Center
WILLOW
Anaheim High Sch
CALIF STATE AT FULLERTON

OCWD GC ANALYSIS
FOR VOLATILE ORGANICS

3/10-35K1
State Well Number

Sample Site Information:

FIRESTATION #13, FULLERTON

DATE SAMPLED	10-31-88	11-28-88	1-30-89	2-28-89			
DATE ANALYZED	11-4-88	12-11-88	2-3-89	3-1-89			
SAMPLED BY	DS	DS	GW	GW			
EPA METHOD USED FOR ANALYSIS	502.2	502.2	502.2	502.2			
CONSTITUENTS (µg/L)							
Dichlorodifluoromethane	ND	ND	ND	ND			
2,2-Dichloropropane	ND	ND	ND	ND			
c-1,2-Dichloroethylene	ND	ND	ND	ND			
Bromochloromethane	ND	ND	ND	ND			
1,1-Dichloropropene	ND	ND	ND	ND			
Dibromomethane	ND	ND	ND	ND			
1,3- Dichloropropane	ND	ND	ND	ND			
1,2-Dibromoethane	ND	ND	ND	ND			
1,1,1,2-Tetrachloroethane	ND	ND	ND	ND			
m-xylene	ND	ND	ND	ND			
p-xylene	ND	ND	ND	ND			
o-xylene	ND	ND	ND	ND			
Styrene	ND	ND	ND	ND			
Isopropylbenzene	ND	ND	ND	ND			
1,2,3- Trichloropropane	ND	ND	ND	ND			
n-Propylbenzene	ND	ND	ND	ND			
Bromobenzene	ND	ND	ND	ND			
1,3,5-Trimethylbenzene	ND	ND	ND	ND			
2- Chlorotoluene	ND	ND	ND	ND			
4- Chlorotoluene	ND	ND	ND	ND			
tert-Butylbenzene	ND	ND	ND	ND			
1,2,4-Trimethylbenzene	ND	ND	ND	ND			
sec-Butylbenzene	ND	ND	ND	ND			
p-Isopropyltoluene	ND	ND	ND	ND			
n-Butylbenzene	ND	ND	ND	ND			
1,2-Dibromo-3-Chloropropane	ND	ND	ND	ND			
1,2,4-Trichlorobenzene	ND	ND	ND	ND			
Hexachlorobutadiene	ND	ND	ND	ND			
Naphthalene	ND	ND	ND	ND			
1,2,3-Trichlorobenzene	ND	ND	ND	ND			
EC @ 25°C (µmho/cm)	1134	1172	1146	1154			
TOC (mg/L)	0.1	0.8	0.7	1.0			

0.5 µg/L as reportable detection limit on all constituents listed on this page except DBCP.

Remarks on other side.

N.D.-non-detect
N.A.-not analyzed
TR. Trace-constituent was seen, but below reportable detection limit.

LAB:GCform:REV 10/13/88
ocwd lab-21

BACTERIOLOGY
WATER TESTING
HAZARDOUS WASTE TESTING
CALIF. DHS CERTIFIED
PHONE (714) 684-1881
LABORATORIES
3215 CHICAGO AVE.

ESTABLISHED 1906
EDWARD S. BABCOCK & SONS, INC.
P.O. BOX 432
RIVERSIDE, CALIFORNIA 92502

07/15/88

To: Regional W.Q.C.B. #8
6809 Indiana Ave. Suite 200
Riverside, CA
92506
Attn:

Lab No. 880617-337
Invoice No. 91555

Sample Marked: AE 201,202 American Electronics Anaheim Soil

	Submitted	Sampled
By	TP	TDP
Date	06/17/88	06/17/88
Time	16:25	14:50

Purgeable Halocarbons and Aromatics

EPA Method 8010 only

Parameter	Results(µg/kg)	Parameter	Results(µg/kg)
Benzene	NA	trans-1,2-Dichloroethene	ND
Bromodichloromethane	ND	1,2-Dichloropropane	ND
Bromoform	ND	cis-1,3-Dichloropropene	ND
Bromomethane	ND	trans-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	Ethyl benzene	NA
Chlorobenzene	ND	Methylene chloride	ND
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
2-Chloroethylvinyl ether	ND	Tetrachloroethene	13
Chloroform	ND	Toluene	NA
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,2-Dichlorobenzene	ND	Trichloroethene	1.2
1,3-Dichlorobenzene	ND	Trichlorofluoromethane	ND
1,4-Dichlorobenzene	ND	Vinyl chloride	ND
Dichlorodifluoromethane	ND		
1,1-Dichloroethane	ND		
1,2-Dichloroethane	ND		
1,1-Dichloroethene	ND		

ND=None detected, detection limit: 1.0µg/kg NI=Not identifiable
Date analysis completed: 07/08/88
Notes: NA = Not Analyzed in EPA Method 8010.

cc:

EDWARD S. BABCOCK & SONS, INC.

PETREX

PETREX FINGERPRINT TECHNIQUE©

JUL 26 1988

KUB 7/26
RLH ✓ 7/27
TDP
M
KS 8/3

July 22, 1988

Mr. Tom Peltier
Regional Water Quality Control Board
6809 Indiana Avenue, Suite 200
Riverside, CA 92506

Dear Mr. Peltier:

Enclosed are spectra and a table of the observed chlorinated compounds chloroform ($CHCL_3$), TCE, CCL_4, and PCE_2 as well as benzene, toluene, and xylenes/ethylbenzene. These time calibration samples are associated with Project 357K. All samples, with the exception of Samples 302 and 401, appear to be quite loaded. It would be advisable to leave the soil gas surveys associated with samples 302 and 401 on site for a longer period of time, and perhaps send in another time calibration sample if possible. Soil gas surveys associated with the other time calibration samples are ready to be retrieved from the field and analyzed.

If you have any questions, please feel free to call.

Very truly yours,

PETREX

Stephen P. Trimble

Stephen P. Trimble
Chemist

/dm
encl.

605 Parfet Street Suite 100 Lakewood, Colorado 80215
Office: (303) 238-0090 Fax: (303) 238-2522

PETREX LABORATORY REPORT

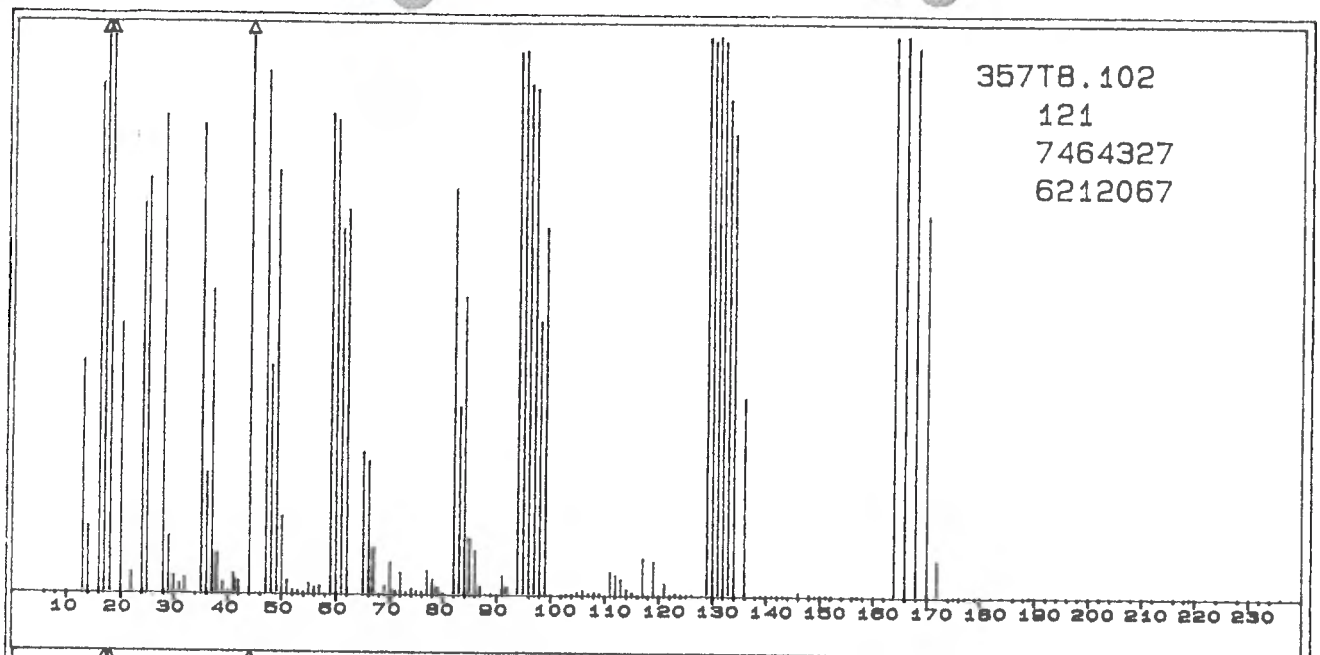
Client: Mr. Tom Peltier
CA Regional Water Quality
Control Board
6809 Indiana Avenue, #200
Riverside, CA 92506

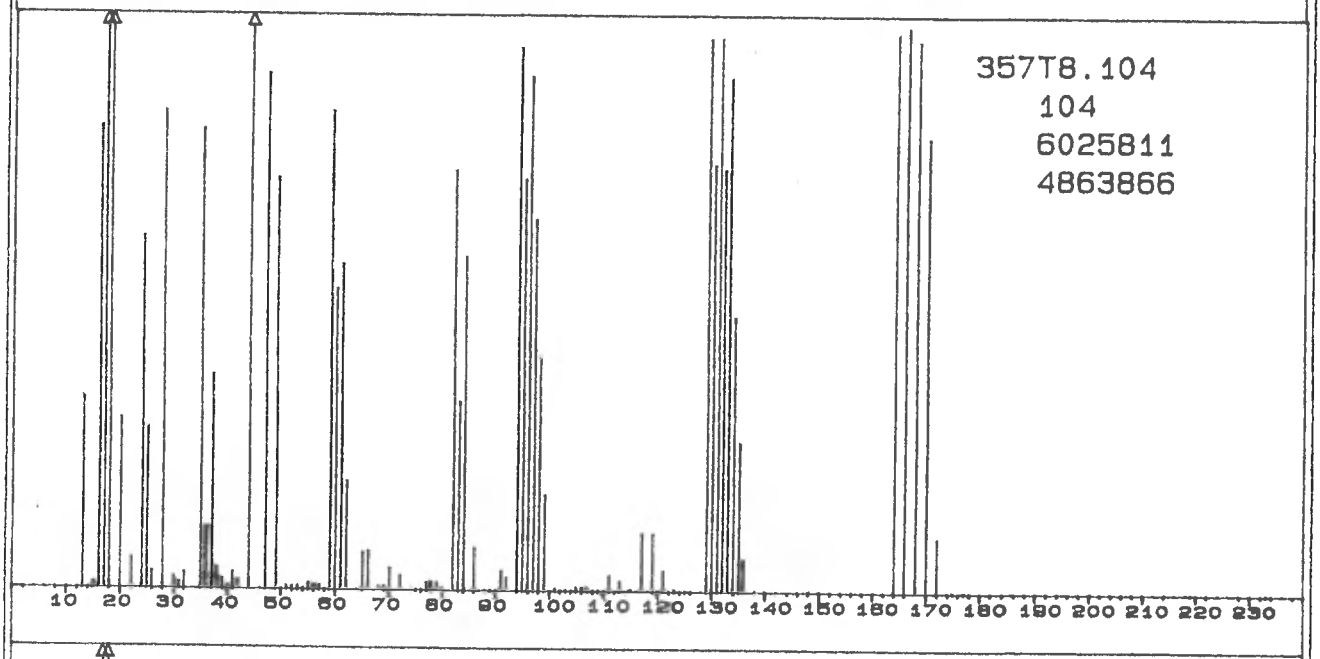
Sample Type: Petrex Soil Gas
Date: July 22, 1988
Job#: 357K

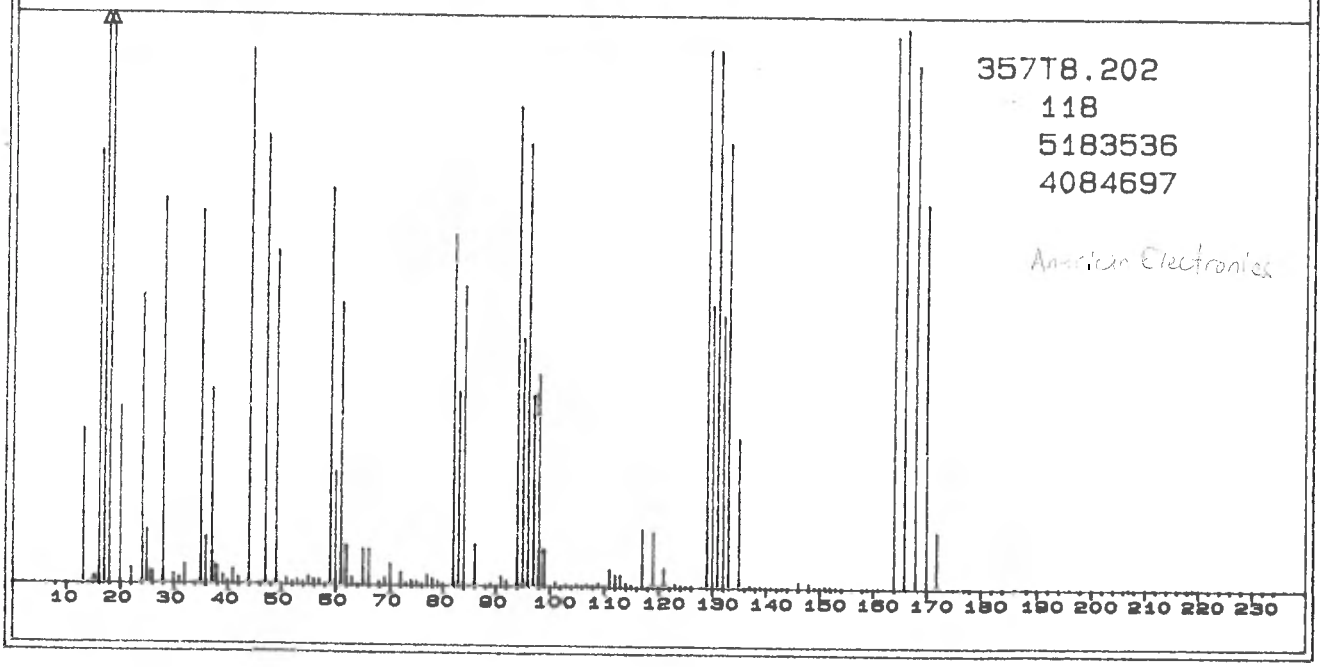
Analytical Results (Ion Counts)

Sample	Chloroform CHCL3	TCE	PCE	CCL4	BENZENE	TOLUENE	XYLENES
102	ND	228598	230297	15529	5980	3232	2009
104	ND	167884	219756	22759	3279	4951	1330
202	ND	115026	224013	23697	2342	1920	246
302	54282	ND	7084	ND	4712	7192	942
401	ND	ND	1552	ND	16065	24527	ND
501	ND	124022	231458	88818	4530	5622	11417

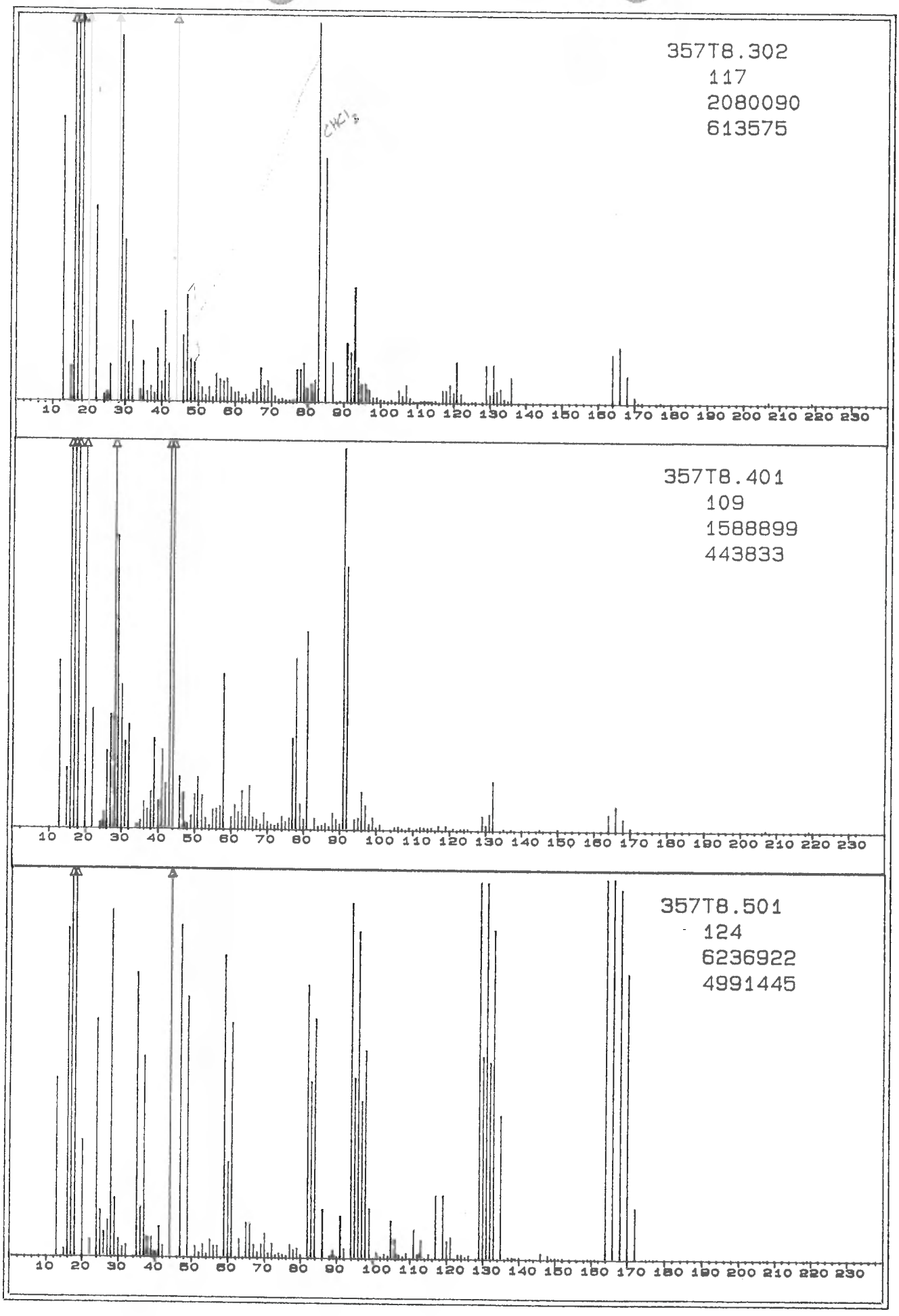
Highlighted = American Electronics







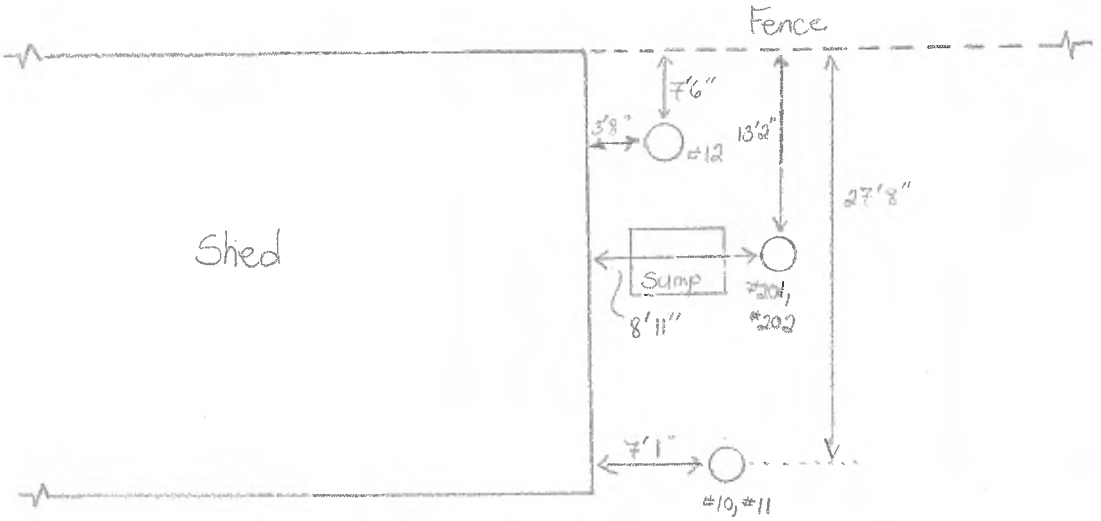
American Electronics


357T8.302
117
2080090
613575
CHCl3
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230
357T8.401
109
1588899
443833
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230
357T8.501
124
6236922
4991445
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230

American Electronics

6/17/88
2:00 p.m.

Petrex tube placement map - not to scale



#10, #11 6/17/88

Petrex sample tubes American Electronics

#12 sample tube at top 6/17/88
#201,202 time tubes at center
American Electronics

California State Department Of Health Services
Southern California Laboratory - SWQIS Lab 1 5091
Volatile Organic Chemicals

American Electronics

LAB SAMPLE ID NO.: 808-2431

DATE REPORTED : 8/15/88 SAMPLER :

All reporting units = ug/kg (ppb) N.D. = None detected

Estimated Detection Limit For All Constituents = 5.0 ppb

METHOD USED : EPA 8240 page 1 of 2

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	
Acrolein	34210	N.D.	
Acrylonitrile	34215		
Benzene	34030		
Bromodichloromethane	32101		
Bromoform	32104		
Bromomethane	34413		
Carbon tetrachloride	32102		
Chlorobenzene	34301		
Chloroethane	34311		
2-Chloroethylvinyl ether	34576		
Chloroform	32106		
Chloromethane	34418		
Dibromochloromethane	32105		
1,2-Dichlorobenzene	34536		
1,3-Dichlorobenzene	34566		
1,4-Dichlorobenzene	34571		
Dichlorodifluoromethane	34668		
1,1-Dichloroethane	34496		
1,2-Dichloroethane	34531		
1,1-Dichloroethylene	34501		
cis-1,2-Dichloroethylene	77093		
trans-1,2-Dichloroethylene	34546		
1,2-Dichloropropane	34541		
cis-1,3-Dichloropropylene	34704		
trans-1,3-Dichloropropylene	34699		
Ethyl benzene	34371		
Ethylene dibromide	77651		
Methylene chloride	34423		
Methyl Ethyl Ketone	81595		
Methyl Isobutyl Ketone	81596		
Styrene	77128		
1,1,2,2-Tetrachloroethane	34516		

California State Department Of Health Services
Southern California Laboratory - SWQIS Lab I[illegible] 5091
Volatile Organic Chemicals

American Electronics

LAB SAMPLE ID NO.: 808-2431

DATE REPORTED : 5/15/85 SAMPLER :

All reporting units = ug/kg (ppb) N.D. = None detected

Estimated Detection Limit For All Constituents = 10 ppb

METHOD USED : EPA 8240 page 2 of 2

CONSTITUENT	STORET CODE	ANALYSIS RESULTS
Tetrachloroethylene	34475	2150
Toluene	34010	ND
1,1,1-Trichloroethane	34506	↓
1,1,2-Trichloroethane	34511	↓
Trichloroethylene	39180	8.5
Trichlorofluoromethane	34488	N.D
Vinyl chloride	39175	↓
m,p-Xylenes		↓
o-Xylene		↓

California State Department Of Health Services
Southern California Laboratory - SWQIS Lab ID No. 5091
Purgeable Halo Hydrocarbons

LAB SAMPLE ID NO.: 008-7546

DATE REPORTED : 8/15/90

METHOD USED : EPA [X] 524.2 [ ] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT X5
Bromobenzene	81555	ND	0.5
Bromochloromethane	A-012		0.5
Bromodichloromethane	32101		0.5
Bromoform	32104		0.5
Bromomethane (Methyl bromide)	34413		0.5
Carbon tetrachloride	32102		0.5
Chlorobenzene (Monochlorobenzene)	34301		0.5
Chloroethane	34311		0.5
2-Chloroethylvinyl ether	34576		1.0
Chloroform	32106		0.5
Chloromethane (Methyl Chloride)	34418		0.5
o-Chlorotoluene (2-Chlorotoluene)	A-008		0.5
p-Chlorotoluene (4-Chlorotoluene)	A-009		0.5
Dibromochloromethane	32105		0.5
Dibromomethane	77596		0.5
1,2-Dichlorobenzene (o-DCB)	34536		0.5
1,3-Dichlorobenzene (m-DCB)	34566		0.5
1,4-Dichlorobenzene (p-DCB)	34571		0.5
Dichlorodifluoromethane (Freon 12)	34668		0.5
1,1-Dichloroethane (1,1-DCA)	34496		0.5
1,2-Dichloroethane (1,2-DCA)	34531	7.6	0.5
1,1-Dichloroethylene (1,1-DCE)	34501	5.5	0.5
cis-1,2-Dichloroethylene	77093	39	0.5
trans-1,2-Dichloroethylene	34546	ND	0.5
1,2-Dichloropropane	34541		0.5
1,3-Dichloropropane	77173		0.5
2,2-Dichloropropane	77170		0.5
1,1-Dichloropropylene (1,1-Dichloropropene)	77168		0.5
cis- & trans-1,3-Dichloropropylene			0.5
Ethylene dibromide (EDB)	77651		0.5
Hexachlorobutadiene	34391		0.5
Methylene chloride (Dichloromethane)	34423		0.5
1,1,1,2-Tetrachloroethane	77562		0.5

Southern California Laboratory - SWQIS Lab ID No. 5091
Purgeable Halo Hydrocarbons

LAB SAMPLE ID NO.: 008-7546

DATE REPORTED : 8/15/90

METHOD USED : EPA [X] 524.2 [] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT X 5
1,1,2,2-Tetrachloroethane	34516	ND	0.5
Tetrachloroethylene (PCE)	34475	2.2	0.5
1,2,3-Trichlorobenzene	77613	ND	0.5
1,2,4-Trichlorobenzene	34551	↓	0.5
1,1,1-Trichloroethane (1,1,1-TCA)	34506	↓	0.5
1,1,2-Trichloroethane (1,1,2-TCA)	34511	↓	0.5
Trichloroethylene (TCE)	39180	690	0.5
1,2,3-Trichloropropane	77443	ND	0.5
Trichlorofluoromethane (Freon 11)	34488	↓	0.5
1,1,2-Trichloro-trifluoroethane (Freon 113)	81611	↓	0.5
Vinyl chloride (VC)	39175	↓	0.5

PETREX

PETREX FINGERPRINT TECHNIQUE©

AUG 18 1988

AUG 18 1988
KUB 8/18
RLH ✓
TDP
M-

August 16, 1988

Mr. Tom Peltier
Regional Water Quality Control Board
6809 Indiana Avenue, Suite 200
Riverside, CA 92506

Dear Mr. Peltier:

Enclosed please find the spectra and a table of identified compounds for your Project 357K. PCE and TCE were identified in a number of samples at a range of ion currents. Our detection limits range from a bottom line ion current of 100 counts up to 250,000 counts at the high end. Carbon tetrachloride (CCl_4) appears to be associated with the PCE. Note that as the PCE ion current increases, so does the ion current for CCl4.

There is a dichloro fragment at M/Z 111 which I have tentatively identified as trichloropropane. This identification is based strictly on the one set of fragment peaks and further testing would have to be done before positive identification could be made.

I have enclosed spectra for some chloro ethyl compounds, I hope they prove useful to you. If you should have questions, please feel free to call.

Very truly yours,

PETREX

Stephen P. Trimble

Stephen P. Trimble
Chemist

/dm
encl.

605 Parfet Street Suite 100 Lakewood, Colorado 80215
Office: (303) 238-0090 Fax: (303) 238-2522

8/22/88
TDP

PeTrex Results

American Electronics
1600 E. Valencia Drive
Fullerton, CA 92631

Sample #	PCE	CCl_4	TCP	TCE
10 (Dupe.)	243,049	40,668	48,432	ND
11	226,235	43,234	56,853	ND
12 (Blank)	ND	ND	ND	ND
201	177,442	13,470	ND	73,659
Time Cal. 202 (Pulled 7/14)	224,013	23,697	ND	115,026

Date in: 6/17/88, Date Out: 8/3/88

This site was being investigated as a possible Source of TCE in the La Palma well field. This firm is a large scale operation The PeTrex investigation was centered around a Sump in the hazardous materials storage area TCE identified in only one of three vapor probe holes. However PCE has been detected in all samples.

PETREX LABORATORY REPORT

Client: Mr. Tom Peltier
CA Regional Water Quality
Control Board
6809 Indiana Ave., #200
Riverside, CA 92506

Sample Type: Petrex Soil Gas
Date: August 15, 1988
Job#: 357K

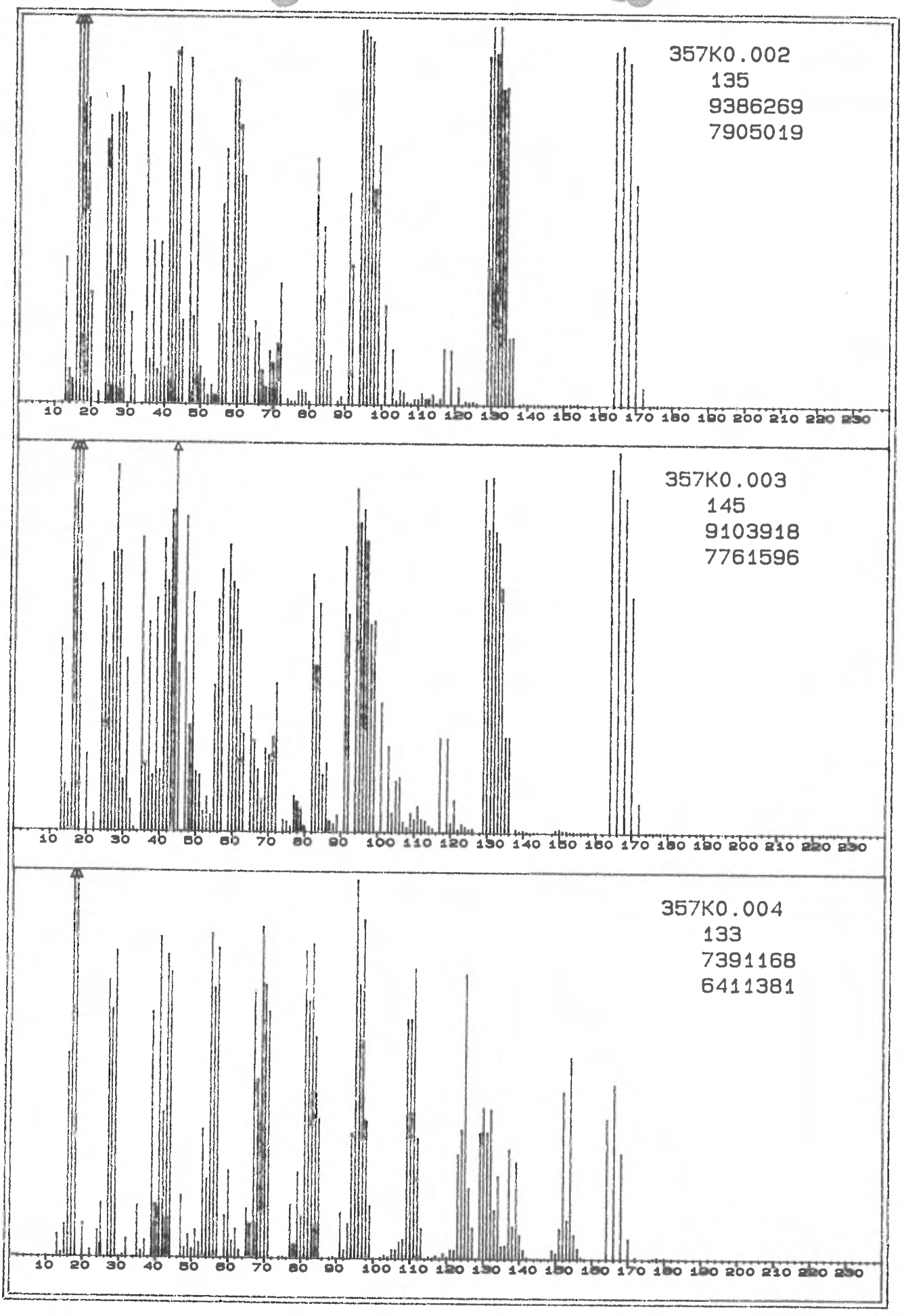
Analytical Results (Ion Counts)

SAMPLE	TCP	CCl4	TCE	PCE
2 TP = #2	ND	33731.	226605.	211696.
3 TP = #3	ND	52802.	168715.	202954.
4 TP = #4	ND	ND	88179.	81790.
5 = MM5	ND	ND	8362.**	51309.
6 = 103	29705.*	17263.	120458.	207127.
7 = 201	ND	13470.	73659.	177442.
8 = MM8	ND	ND	ND	148040.
9 = MM9	ND	ND	181480.	239669.
10 = #10	48432.*	40668.	ND	243049.
11 = #11	56853.*	43234.	ND	226235.
Blank-12 TP=#12	ND	ND	ND	ND
13 = MM10	ND	42341.	129559.	222321.
14 = MM6A	ND	ND	20477.	100382.
15 = MM6B	ND	ND	10842.	63258.
16 = 101	ND	3618.	125165.	143556.
17 = MM701	ND	11554.	47960.	159441.

* TCP - dichloro fragment based on isotope ratios and distribution, tentatively identified as Trichloropropane (TCP)

**Tentatively identified as TCE

Highlighted = American Electronics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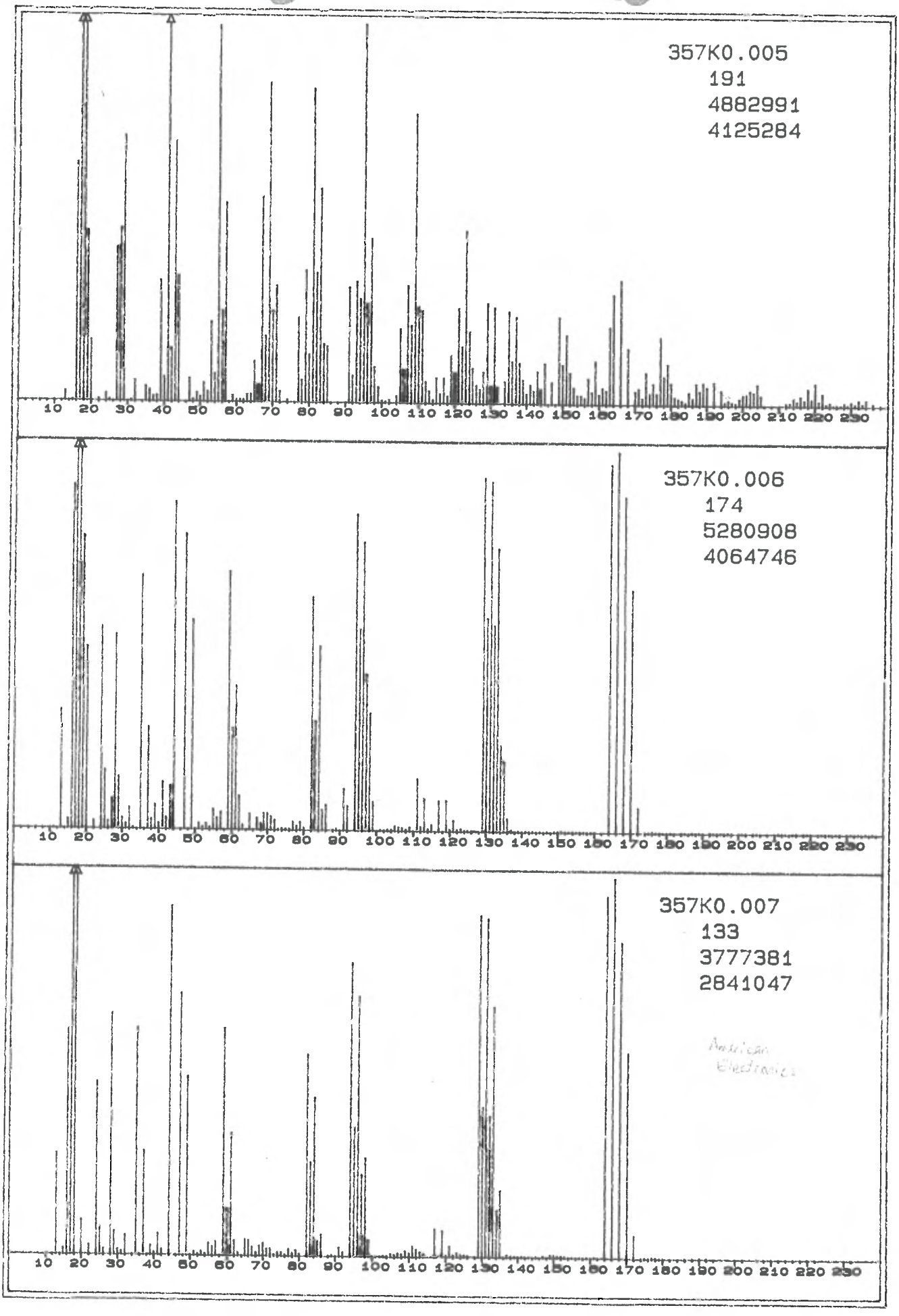
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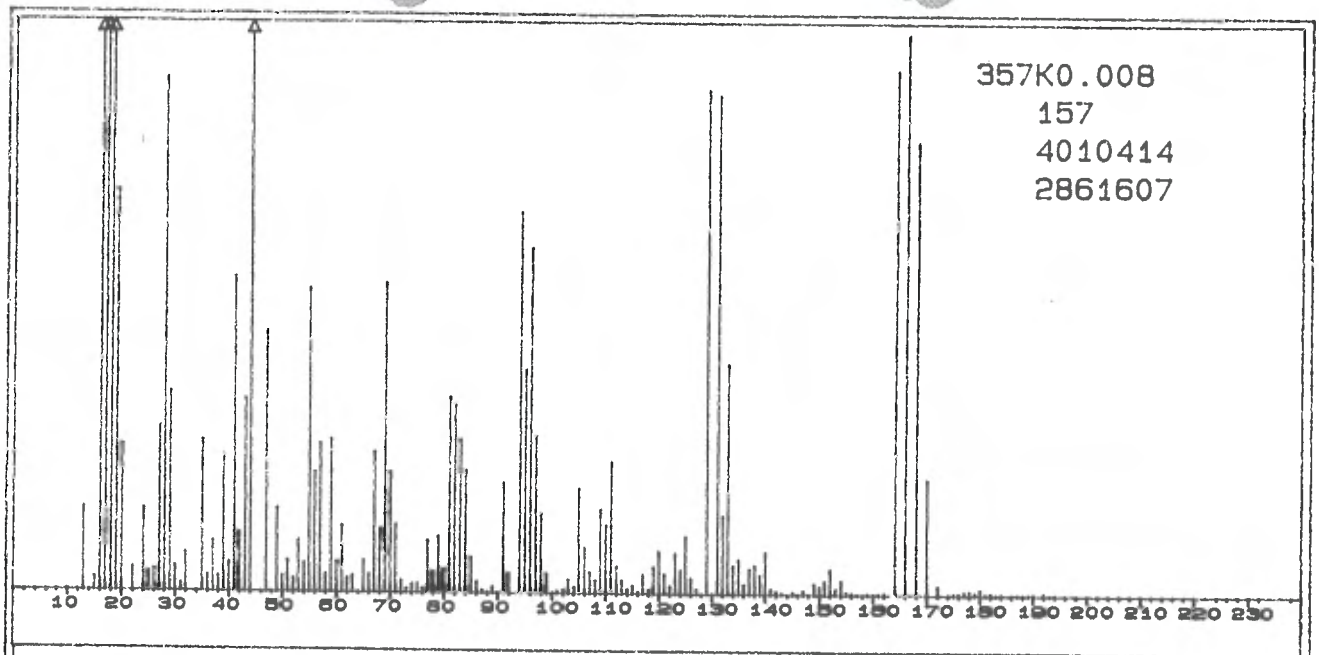
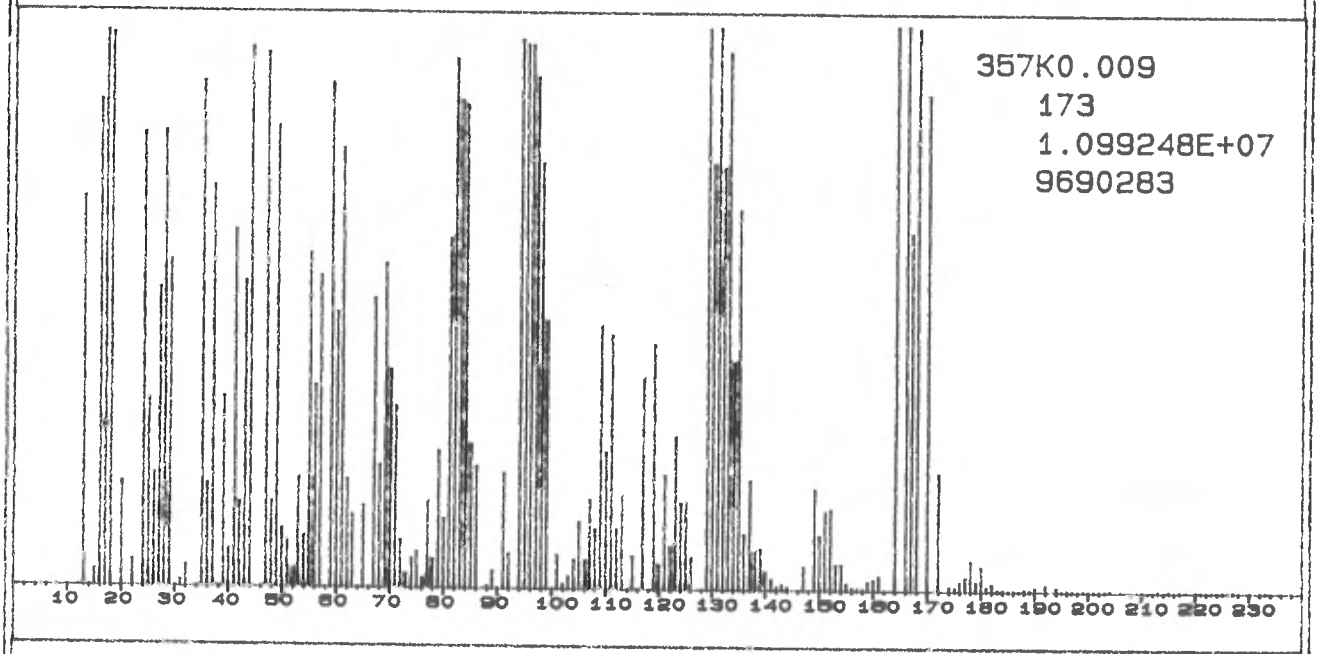
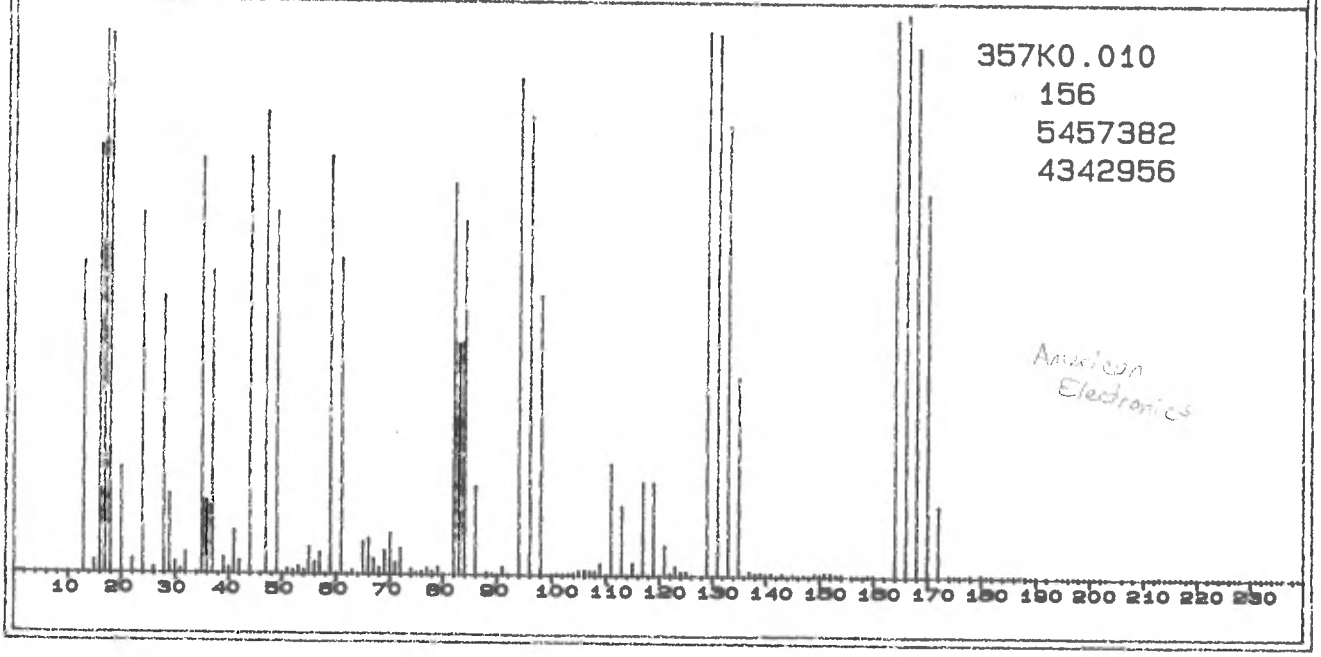
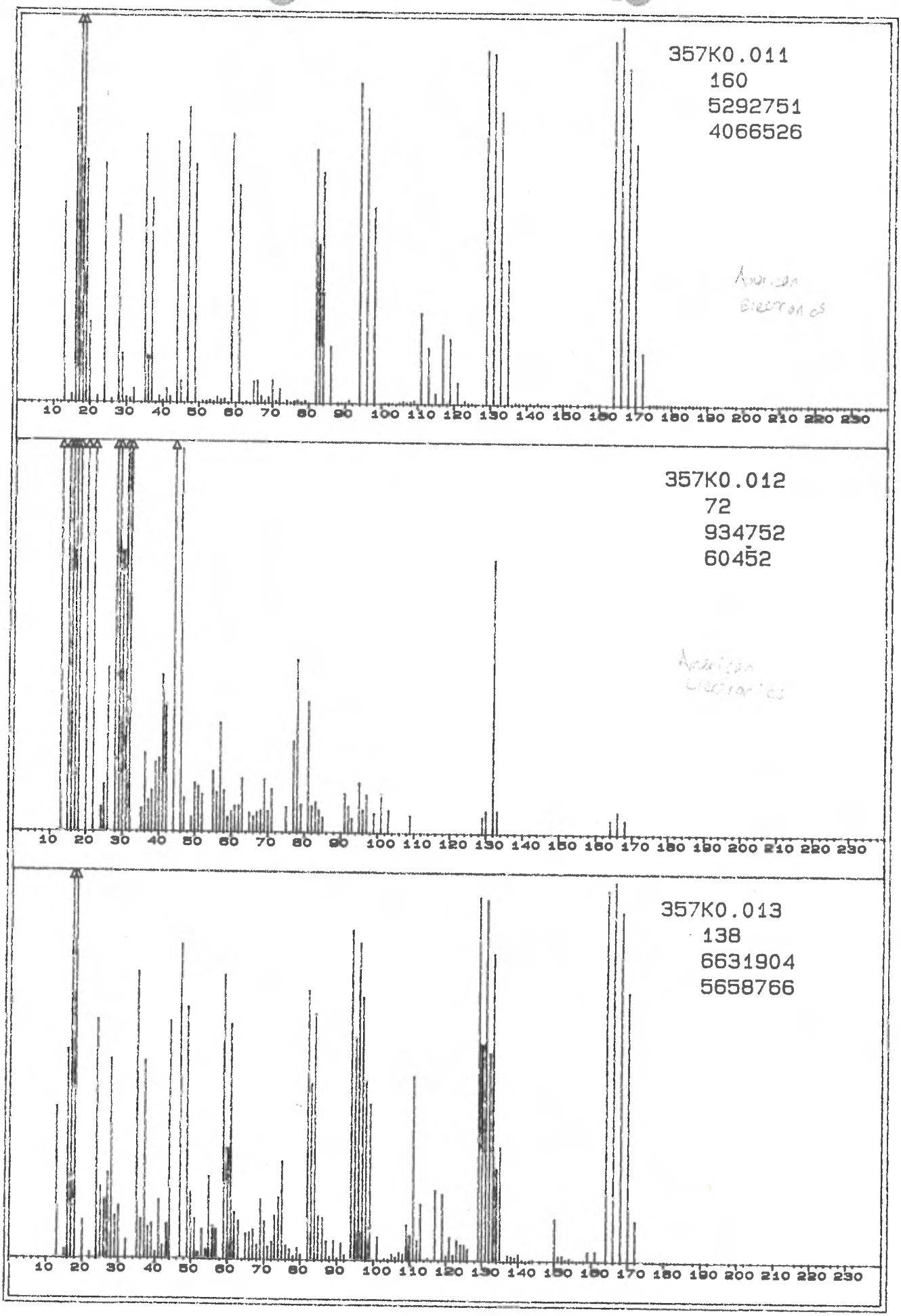






American Electronics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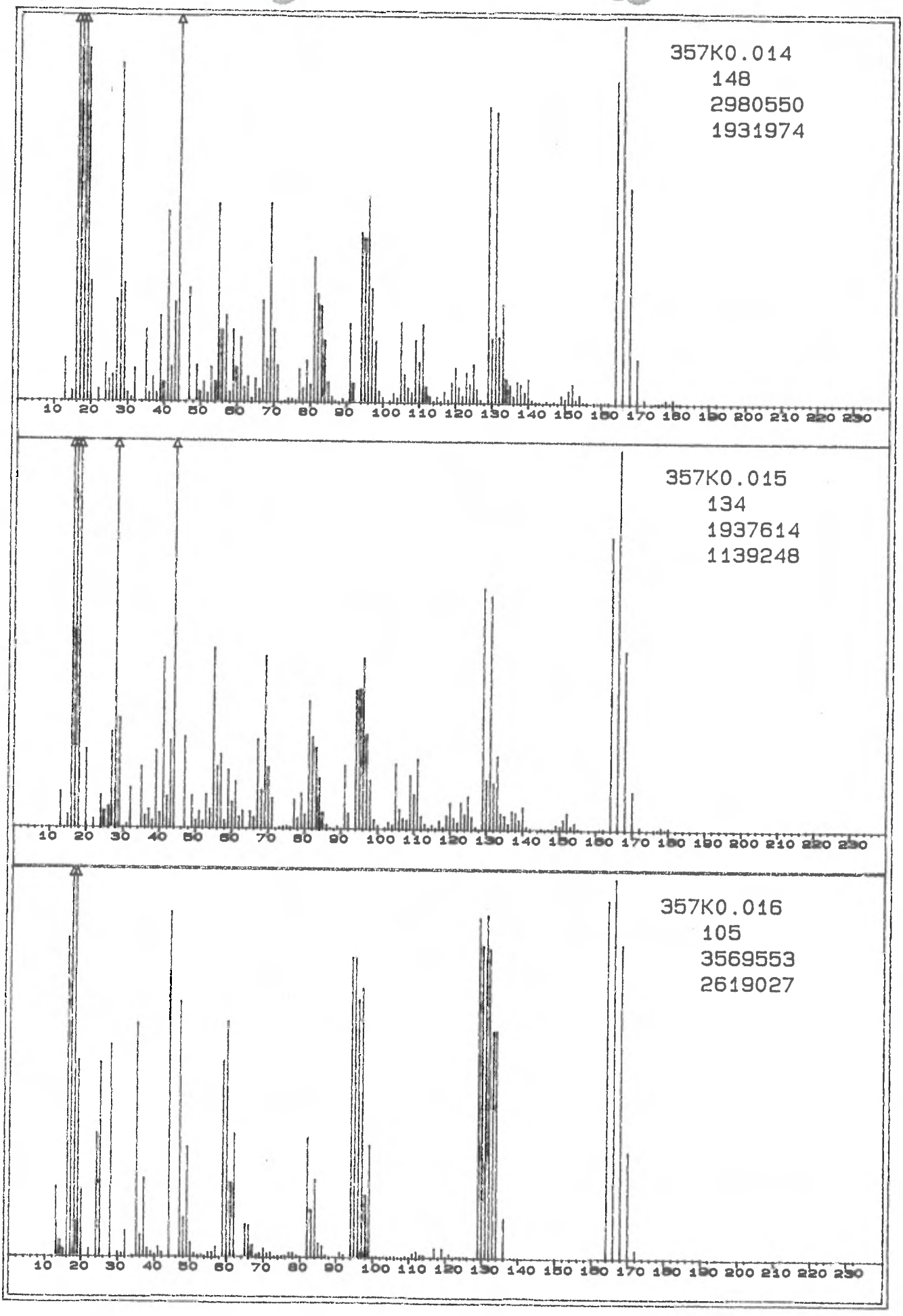
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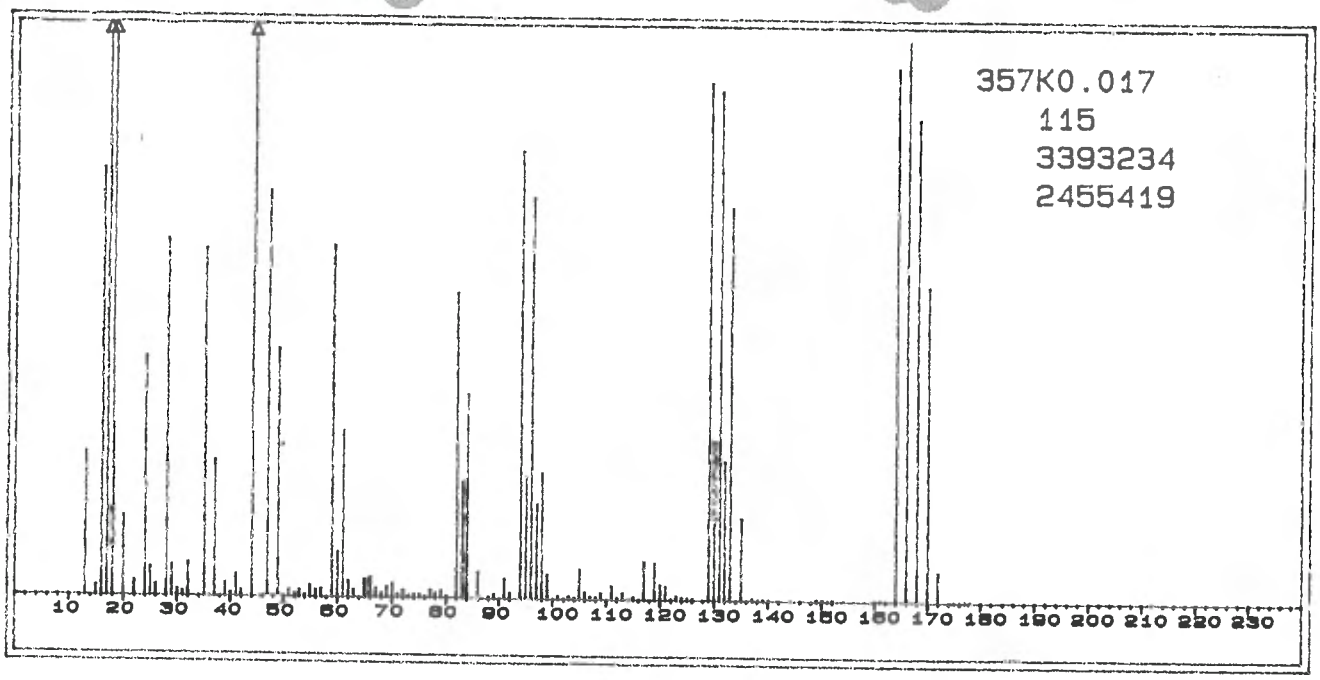
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2455419
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30 August 1991

PHASE II
SUBSURFACE INVESTIGATION FOR THE AMERICAN ELECTRONICS INC. FACILITY LOCATED AT 1600 EAST VALENCIA DRIVE IN THE CITY OF FULLERTON, CALIFORNIA

VOLUME I of II

Prepared for:

AMERICAN ELECTRONICS INC.
1600 East Valencia Drive
Fullerton, California 92631

by:

APPLIED GEOSCIENCES INC.
17321 Irvine Boulevard
Tustin, California 92680
(714) 838-8545

Michelle Corwin
Assistant Project Hydrogeologist

David M. Henry, R.G., No. 4528
California Registered Geologist

REGISTERED GEOLOGIST
DAVID M. HENRY
NO. 4528
OF CALIFORNIA

Mark S. Cousineau, R.E.A.
Associate

Project No. A901978A

EXECUTIVE SUMMARY

This report presents the results of a Phase II subsurface investigation that was conducted by Applied Geosciences Inc. for the American Electronics, Inc. (AEI), facility (site) located at 1600 East Valencia Drive in Fullerton, California. In March 1987, a chemical-use questionnaire was submitted to AEI by the Regional Water Quality Control Board - Santa Ana Region (RWQCB)as part of the Assemble Bill 1803 follow up program. In July 1988, the RWQCB collected soil-gas samples from the southwest corner of the AEI site. Analytical results of the soil-gas samples collected from the site indicated the presence of elevated concentrations of tricholorethylene (TCE) and tetrachloroethylene (PCE). In October 1988, AEI was instructed by the RWQCB to conduct a preliminary subsurface investigation (Phase I) at the site that included the installation and sampling of three groundwater monitoring wells (RWQCB, 1988). Ray E. Lewis Consulting Engineers (REL) of Laguna Beach, California, was retained by AEI to conduct the work requested by the RWQCB. The results of REL's investigation indicated the presence of volatile organic compounds (VOCs) in the soil and groundwater beneath the site. The Phase II investigation was conducted in response to the request of the Regional Water Quality Control Board - Santa Ana Region (RWQCB) to assess the extent of soil and groundwater degradation that may have resulted from previous site activities.

PHASE I INVESTIGATION

During the Phase I investigation conducted by REL, three groundwater monitoring wells (designated as BP1, BP2, and BP3) were drilled, installed, and sampled to assess the presence of VOCs in the soil and groundwater beneath the site. The results of the investigation indicated the presence of VOCs in soil samples collected from the southwestern corner of the site, and in groundwater samples collected from upgradient and downgradient wells at the site. The concentrations of VOCs were higher in the groundwater samples collected from monitoring well BP1 located in the southwestern corner of the site, relative to the other two wells located upgradient from this area.

PHASE II INVESTIGATION

The Phase II investigation conducted by Applied Geosciences Inc. involved the drilling and sampling of three soil borings (designated as SB1, SB2, and SB3) and drilling, installation, and sampling of three groundwater monitoring wells (designated as BP4, BP5, and BP6). The scope of work presented in Applied Geosciences Inc.'s workplan to conduct the investigation, dated 10 December 1990, was expanded to include the installation of off-site well BP6. Both the workplan and the installation of well BP6 were approved by the RWQCB prior to conducting the work. The soil borings were drilled to assess the lateral and vertical extent of VOCs in the southwestern portion of the site where the results of the Phase I investigation had previously indicated the presence of VOCs in soil and groundwater.

The purposes of the groundwater monitoring wells are as follows:

- Well BP4 was installed to assess the VOC concentrations in groundwater that may be migrating onto the southeastern portion of the site from off-site sources.
- Well BP5 was installed to replace well BP1, which contained only approximately 2 feet of measurable groundwater in December 1990, and to assess the vertical extent of VOCs in soil at this location of the site.
- Well BP6 was installed to evaluate the potential off-site migration and lateral extent of VOCs in soil and groundwater southwest of the site.

Soil and groundwater samples collected from the borings and wells were analyzed for VOCs in general accordance with U.S. Environmental Protection Agency (EPA) Method Nos. 8010/8020.

DISCUSSION

Results of the Phase II investigation were evaluated together with the results from the previous investigation, and the following discussions presents our interpretation of that data.

Geology

The geologic materials beneath the site generally consist of interbedded fine-grained sands, silts, and clays that are typical of fluvial depositional environments. Subtle lithologic variations appear to exist between boring locations; however, a relatively consistent lithologic unit, consisting of a clayey silt to silty clay, was encountered in each of the borings at depths of approximately 95 to 105 feet below the ground surface (BGS). Below depths of approximately 105 to 110 feet BGS, the geologic materials generally consist of coarser sands and gravels.

Hydrogeology

Groundwater beneath the site exists under unconfined conditions at a depth of approximately 140 feet BGS, which corresponds to an elevation of approximately 40 feet above mean sea level (MSL). The groundwater gradient is relatively flat (0.001 to 0.0005 foot per foot [ft/ft]), with a general flow direction to the west/southwest. The groundwater gradient appears to have fluctuated since groundwater-level measurements were first made by REL in March 1989 when a northwesterly gradient was measured. The groundwater table has also declined approximately 11 feet since then. The declining and fluctuating water table conditions are likely a result of the recent drought being experienced in the region as well as groundwater pumping in the site vicinity for municipal use.

Soil Degradation

Results of the investigation indicate that soil beneath the southwestern portion of the site and immediately southwest of the site has been impacted with VOCs. The primary VOCs detected in the soil samples are tetrachloroethylene (PCE) and trichloroethylene (TCE). The highest concentrations of PCE (approximately 1,000 parts per billion [ppb]) were detected in shallow soil samples collected from depths of approximately 5 to 10 feet BGS in the southwestern corner of the site. The highest TCE concentrations (approximately 350 ppb) were generally detected in soil samples collected from depths of less than approximately 50 feet BGS in the southwestern portion of the site. Other VOCs detected in soil samples collected from the site include benzene, toluene, ethylbenzene, xylenes, 1,1,1-trichloroethane, 1,2-dichloroethane, and carbon tetrachloride. However, the extent and concentrations of these chemicals appear to be much more limited than those of PCE and TCE.

The total VOC concentrations in the soil samples were evaluated to assess the potential that soil remediation would be warranted. In borings BP1 and BP5, total VOC concentrations detected in the soil samples collected at depths of approximately 5 to 10 feet BGS exceed approximately 1,000 ppb (or 1 part per million [ppm]). With the exception of these samples, the maximum total VOC concentrations detected in samples collected at depths ranging from approximately 5 to greater than 100 feet BGS are less than 500 ppb. It is our experience that remediation of soil containing less than 500 to 1,000 ppb of total VOCs is generally not required, depending on site-specific factors. This standard appears to be appropriate for the site-specific factors encountered at the site, namely the relatively fine-grained nature of the impacted soil, the relatively continuous fine-grained layer at approximately 95 to 105 feet BGS beneath the area of impacted soil, and the depth to groundwater of approximately 40 feet beneath the deepest horizon of impacted soil.

Groundwater Degradation

Results of the investigation indicate that the groundwater beneath the site has been impacted with VOCs. The primary VOCs detected in groundwater samples collected from the site are TCE and PCE. TCE was detected in the greatest concentrations in groundwater samples collected from wells located in the vicinity of the southwestern corner of the site (wells BP1, BP5, and BP6). Samples collected from well BP1 during Phase I contained the greatest concentrations of TCE; however, because of declining water levels, this well could not be sampled during Applied Geosciences Inc.'s investigation. TCE concentrations detected in groundwater samples collected from wells BP5 and BP6 during Phase II are much lower (70 to 80 ppb) than samples collected from well BP1 (230 to 1,500 ppb).

Groundwater samples from the upgradient monitoring wells (wells BP2 and BP3) generally contained slightly lower concentrations of TCE than those detected in wells BP5 and BP6. However, concentrations of PCE detected in the samples from wells BP2 and BP3 have generally been slightly higher than those detected in wells BP5 and BP6. Laboratory analytical results for the samples collected from these upgradient wells indicate that there is an off-site source (or sources) of VOCs in the site vicinity in our judgment.

Results of the investigation conducted at the site suggest that the site has contributed VOCs to the groundwater degradation beneath the site. This conclusion is primarily based on the previous laboratory analytical results for samples collected from well BP1 and for soil samples. However, the VOC concentrations detected in groundwater samples collected from wells BP5 and BP6 (located in the vicinity of the southwestern corner of the site) are relatively low and similar in magnitude to upgradient VOC concentrations. The relatively higher concentrations of TCE detected in groundwater samples collected from well BP1 may have been a result of sampling the very top of the water column due to the shallow depth of the screened interval of this well. In general, the impact that the site may have had on the aquifer does not appear to be great, based on the results of samples collected from wells BP5 and BP6, and it appears that there has been only a small contribution of VOCs from the site.

CONCLUSIONS

Based on the results of the investigation, current regulatory guidelines, and the professional judgment of Applied Geosciences Inc., the following conclusions have been drawn:

- Prior to approximately 1960, the primary use of the site was for agricultural purposes (citrus groves). The site was first occupied by AEI in approximately 1960 and has been used for the manufacture of electrical motor parts since that time.

- At least four facilities in the site vicinity have undergone subsurface investigations in connection with chemical usage. At least two of these facilities have been required to investigate groundwater.

- The geologic materials beneath the site generally consist of interbedded fine-grained sands, silts, and clays that are typical of fluvial depositional environments. A relatively continuous fine-grained lithologic unit is present beneath the site at a depth of approximately 95 to 105 feet BGS.

- Groundwater beneath the site exists under unconfined conditions at a depth of approximately 140 feet BGS which corresponds to an elevation of approximately 40 feet MSL. The groundwater gradient is relatively flat with a general flow direction to the west/southwest.

- Groundwater levels have declined and the groundwater gradient has fluctuated since at least 1989. The declining and fluctuating water table conditions are likely a result of the recent drought being experienced in the region, as well as groundwater pumping in the site vicinity for municipal use.

- Soil beneath the southwestern portion of the site and immediately southwest of the site has been impacted with VOCs. The primary VOCs detected in the soil samples collected during the investigation are PCE and TCE.

- Total VOC concentrations detected in the soil samples collected from the southwestern corner of the site at depths of approximately 5 to 10 feet BGS exceed approximately 1,000 ppb (or 1 ppm). With the exception of these samples, the maximum total VOC concentrations detected in samples collected at depths ranging from approximately 5 to greater than 100 feet BGS are less than 500 ppb.

- Groundwater beneath the site has been impacted with VOCs, primarily PCE and TCE.

- Laboratory analytical results for groundwater samples collected from upgradient wells at the site indicate that there is likely an off- site source (or sources) of VOCs in the site vicinity.

- Based on laboratory analytical results for groundwater samples collected from well BP1 and the results of the soil sampling data, there is a moderate to high likelihood that the site has contributed VOCs to the groundwater degradation beneath the site.

- The VOC concentrations detected in groundwater samples collected from wells BP5 and BP6 located in the vicinity of the southwestern corner of the site are relatively low and similar in magnitude to upgradient VOC concentrations.

- The relatively higher concentrations of TCE detected in groundwater samples collected from well BP1 may have been a result of sampling the very top of the water column due to the shallow depth of the screened interval of this well.

- The impact that the site may have had on the aquifer does not appear to be great, based on the results of samples collected from wells BP5 and BP6, and it appears that only a small contribution of VOCs has occurred.

RECOMMENDATION

Based on the conclusions presented in this report, current regulatory guidelines, and the professional judgment of Applied Geosciences Inc., the following recommendation is presented for your consideration:

- The wells at the site should be monitored on a quarterly basis for approximately 1 year to evaluate spatial and temporal changes in VOC concentrations and distributions.

10.0 CONCLUSIONS

Based on the results of the investigation, current regulatory guidelines, and the professional judgment of Applied Geosciences Inc., the following conclusions have been drawn:

- Prior to approximately 1960, the primary use of the site was for agricultural purposes (citrus groves). The site was first occupied by AEI in approximately 1960 and has been used for the manufacture of electrical motor parts since that time.

- At least four facilities in the site vicinity have undergone subsurface investigations in connection with chemical usage. At least two of these facilities have been required to investigate groundwater.

- The geologic materials beneath the site generally consist of interbedded fine-grained sands, silts, and clays that are typical of fluvial depositional environments. A relatively continuous fine-grained lithologic unit is present beneath the site at a depth of approximately 95 to 105 feet BGS.

- Groundwater beneath the site exists under unconfined conditions at a depth of approximately 140 feet BGS which corresponds to an elevation of approximately 40 feet MSL. The groundwater gradient is relatively flat with a general flow direction to the west/southwest.

- Groundwater levels have declined and the groundwater gradient has fluctuated since at least 1989. The declining and fluctuating water table conditions are likely a result of the recent drought being experienced in the region, as well as groundwater pumping in the site vicinity for municipal use.

- Soil beneath the southwestern portion of the site and immediately southwest of the site has been impacted with VOCs. The primary VOCs detected in the soil samples collected during the investigation are PCE and TCE.

- Total VOC concentrations detected in the soil samples collected from the southwestern corner of the site at depths of approximately 5 to 10 feet BGS exceed approximately 1,000 ppb (or 1 ppm). With the exception of these samples, the maximum total VOC concentrations detected in samples collected at depths ranging from approximately 5 to greater than 100 feet BGS are less than 500 ppb.

- Groundwater beneath the site has been impacted with VOCs, primarily PCE and TCE.

- Laboratory analytical results for groundwater samples collected from upgradient wells at the site indicate that there is likely an off- site source (or sources) of VOCs in the site vicinity.

- Based on laboratory analytical results for groundwater samples collected from well BP1 and the results of the soil sampling data, there is a moderate to high likelihood that the site has contributed VOCs to the groundwater degradation beneath the site.

- The VOC concentrations detected in groundwater samples collected from wells BP5 and BP6 located in the vicinity of the southwestern corner of the site are relatively low and similar in magnitude to upgradient VOC concentrations.

- The relatively higher concentrations of TCE detected in groundwater samples collected from well BP1 may have been a result of sampling the very top of the water column due to the shallow depth of the screened interval of this well.

- The impact that the site may have had on the aquifer does not appear to be great, based on the results of samples collected from wells BP5 and BP6, and it appears that only a small contribution of VOCs has occurred.

11.0 RECOMMENDATION

Based on the conclusions presented in this report, current regulatory guidelines, and the professional judgment of Applied Geosciences Inc., the following recommendation is presented for your consideration:

- The wells at the site should be monitored on a quarterly basis for approximately 1 year to evaluate spatial and temporal changes in VOC concentrations and distributions.

12.0 REFERENCES

Applied Geosciences Inc., 1990, Proposed subsurface investigation at the American Electronics Inc. (AEI) facility located at 1600 East Valencia Drive in the city of Fullerton, California: Letter to the Regional Water Quality Control Board - Santa Ana Region dated 10 December 1990, 3 p.

Bernhardt, C., 1990, Regional Water Quality Control Board - Santa Ana Region, groundwater engineer: oral communication.

Dames & Moore, 1990, Groundwater quality assessment, 1818 E. Rosslynn Avenue, Fullerton, California: Unpublished report dated 13 September 1990, 12 p.

Department of Water Resources (DWR), 1967, Progress report on groundwater geology of the coastal plain of Orange County: Published report dated July 1967.

DWR. See Department of Water Resources.

E&GE. See Environmental & General Engineering.

APPLIED GEOSCIENCES INC.
Environmental Consultants

17321 Irvine Boulevard
Tustin, CA 92680
Tel. 714/734-0303
Fax 714/734-0510

31 August 1995
A901978G

American Electronics, Inc.
1600 East Valencia Drive
Fullerton, California 92631

Attention: Mr. Richard F. Holland

Subject: CLOSURE INVESTIGATION FOR THE AMERICAN ELECTRONICS, INC. FACILITY LOCATED IN FULLERTON, CALIFORNIA.

Dear Mr. Holland:

Enclosed please find two copies of the above-referenced report. Should you have any questions, please feel free to contact me.

With regards,
APPLIED GEOSCIENCES INC.

William Weaver

Will Weaver
Assistant Project Manager

APPLIED GEOSCIENCES INC.
Environmental Consultants

17321 Irvine Boulevard
Tustin, CA 92680
Tel. 714/734-0303
Fax 714/734-0510

31 August 1995
A901978G

California Regional Water Quality Control Board
Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, California 92507-2409

Attention: Mr. Augustine Anijielo

SUBJECT: CLOSURE INVESTIGATION FOR THE AMERICAN ELECTRONICS INC. FACILITY LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report presents the results of a closure investigation conducted at the American Electronics, Inc. facility (site), located at 1600 East Valencia Drive, Fullerton, California (Figure 1). The work summarized in this report was conducted to assess the completion of the soil remediation being conducted at the site. The scope of the work was proposed in a workplan dated 4 May 1995, which was approved by the Regional Water Quality Control Board (RWQCB) in a letter dated 5 July 1995 from the RWQCB to Mr. Richard Holland, President of American Electronics, Inc.

BACKGROUND

A preliminary subsurface investigation was conducted at the site by Ray E. Lewis Consulting Engineers, Inc. (REL) during 1989 in order to assess the presence of VOCs in the soil and groundwater beneath the site. The investigation involved drilling, installing, and sampling of three groundwater monitoring wells. Results of the investigation indicated the presence of VOCs, primarily tetrachloroethylene (PCE) and trichloroethylene (TCE), in the soil and groundwater beneath the southwestern portion of the site. REL reported concentrations of PCE and TCE in the soil up to 1,100 micrograms per kilogram (μg/kg), in a soil sample collected from boring BP-1 (REL, 1989).

A subsurface investigation was conducted at the site by Applied Geosciences Inc. in 1991 in order to assess the lateral and vertical extent of VOCs in the southwestern portion of the site that had been reported by REL during their preliminary investigation. The investigation involved drilling and sampling of three soil borings, and drilling, installing, and sampling of three groundwater monitoring wells. Results of this investigation indicated the presence of VOCs, primarily PCE and TCE, in the shallow soil beneath the southwestern portion of the site and to the immediate southwest of the site. Concentrations of PCE and TCE up to 1,100 μg/kg were reported in a soil sample collected from boring BP-5 (Applied Geosciences Inc., 1991).

The RWQCB, in a response letter to Richard F. Holland, President of American Electronics, Inc. dated October 25, 1991, expressed the following concerns: the lateral and vertical extent of soil impacted by VOCs had not yet been fully assessed; the impacted soil could be a source of TCE and PCE in the groundwater; the nature and extent of impacted groundwater should be more accurately assessed with additional groundwater data; and that groundwater level measurements, and calculated gradients and flow directions, had displayed inconsistent results (RWQCB, 1991a).

To assess the issue of impacted soil at the site Applied Geosciences Inc. proposed conducting a soil-gas survey and advancing soil borings at the site to further assess the lateral and vertical extent of VOC impacted soil. The scope of the additional work was approved by the RWQCB in a letter dated 20 December 1991 from the RWQCB to Mr. Richard F. Holland, President of American Electronics, Inc. (RWQCB, 1991b).

A soil-gas survey was conducted at the southwestern portion of the site on 19 and 20 December 1991. The soil-gas survey consisted of advancing 29 soil-gas probes to depths ranging from approximately 8 to 10 feet below ground surface (BGS) and analyzing one gas sample from each location. The soil gas samples were analyzed for PCE, TCE, 1,1,1-trichloroethane (1,1,1-TCA), and total volatile petroleum hydrocarbons (TVPH). Of the 30 samples collected in the survey, all 30 had detectable concentrations of 1,1,1-TCA, TCE, PCE and an unknown compound that is reported as 1,1-dichloroethylene (1,1-DCE). Although most of the concentrations were relatively low, the presence of relatively high concentrations of total VOCs (greater than 1,000 micrograms per liter μg/L) was reported in the area adjacent to the former chemical storage area in the vicinity of soil gas sample locations SG-9 and SG-21; on the NTS property in sample location SG-23; and approximately 60 feet to the northeast of the former chemical storage area in sample location SG-15.

Based on the results of the soil-gas survey, four soil borings were drilled to depths of approximately 20 feet BGS. The soil boring locations were selected based upon the locations of the highest total VOC concentrations observed during the soil-gas survey. The purpose of these borings was to assess the lateral and vertical extent of VOCs in the shallow soil at the southwestern portion of the site that was encountered during the previous subsurface investigations conducted by REL (1989) and Applied Geosciences Inc. (1991). Soil samples were analyzed for VOCs in general accordance with Environmental Protection Agency (EPA) Method No. 8021. One sample from each of the soil borings was analyzed by a RWQCB-

selected laboratory for VOCs in general accordance with EPA Method No. 8010. The results indicated PCE and TCE were present at concentrations up to 3,500 μg/kg in a soil sample collected from boring SB-6. The results of the soil-gas survey and the soil borings were presented in a report prepared by Applied Geosciences Inc. dated 18 March 1992 (Applied Geosciences Inc., 1992).

The RWQCB had continually requested that remedial efforts be conducted on the impacted soil on the southwestern portion of the site despite receiving approval from the Orange County Health Care Agency (OCHCA) that no action was necessary to protect public health (RWQCB, 1991c, 1992, and 1994a). In order to comply with the RWQCB requests, Applied Geosciences Inc. proposed remediating impacted soil at the site using a vapor extraction system (VES). A VES conceptual system design was presented in a 14 April 1994 letter addressed to American Electronics, Inc. and forwarded to the RWQCB for review (Applied Geosciences Inc., 1994). The RWQCB, in a letter dated 23 May 1994, approved the plan to install and operate the proposed system (RWQCB, 1994b). The VES was assembled and installed at the site during the period from June to October 1994.

The VES startup and initial operations covered the period from 13 October through 15 November 1994 (approximately 34 days), and the results of the startup activities were presented in a progress report dated 4 January 1995 (Applied Geosciences Inc., 1995a). The system operated continuously on a 24-hour-per-day basis, with the exception of three downtime periods. As a condition of the SCAQMD permit, the system was required to be shut down during the weekend hours of the first two weeks of operation because the facility is closed on the weekends and there was no one present to monitor the system. The system was also shut down at the end of the startup period in order to regenerate the carbon canisters. Monitoring of the system was conducted daily for the first two weeks of operation and once a week for the remaining two weeks. The results of the laboratory analyses indicated that detectable concentrations of chlorinated hydrocarbons, namely PCE and TCE, were present in the vapor stream extracted from the subsurface soils. The initial concentrations of PCE and TCE for the sample collected at system startup were reported at 640 and 570 μg/L, respectively. The concentrations were observed to decrease during the startup period and the concentrations of PCE and TCE for the final sample collected at the end of the startup period were reported at 39 and 55 μg/L, respectively.

The VES start-up and first quarter of operations covered the period from 13 October through 31 January 1995 (approximately 110 days) and the results were presented in a progress report dated 23 March 1995 prepared by Applied Geosciences Inc.(Applied Geosciences Inc., 1995b). As discussed above, the initial concentrations of PCE and TCE for the samples collected at system start-up were reported at 640 and 570 μg/L, respectively. The concentrations were observed to decrease steadily during the first quarter of operation, and the concentrations of PCE and TCE for the final sample collected at the end of the quarter were reported at 13 and 11 μg/L, respectively, which represents a greater than 90 percent reduction in VOC concentration in the extracted vapors. Based upon those observations, it appeared that the remediation efforts were proceeding ahead of schedule, and the system was shut down for approximately 2 weeks

prior to the sampling on 4 April 1995 in order to "pulse" the system. The 4 April 1995 analytical results were reported at concentrations of only 19 and 31 μg/L for PCE and TCE, respectively (Table 1). The two previous rounds of sampling had reported concentrations of 13 and 10 μg/L for PCE, and 11 and 14 μg/L for TCE. The results indicated that there was no significant increase in concentrations after pulsing of the system.

Based on the results obtained from the first quarter of operation and the sampling conducted on 4 April 1995, Applied Geosciences Inc. proposed to conduct this subsurface investigation to document the completion of the remedial efforts at the site. The RWQCb had previously discussed a cleanup criteria for VOCs at the site at 1,000 μg/kg. The scope of work presented for this investigation was submitted to the RWQCB and was subsequently approved by the RWQCB in a letter dated 5 July 1995 from the RWQCB to Mr. Richard F. Holland, President of American Electronics, Inc. (RWQCB, 1995).

OBJECTIVE

The objective of the work summarized in this report was to assess whether remedial efforts have been completed at the site.

SCOPE OF WORK

The scope of work developed to meet the objective included advancing 3 soil borings to depths of up to 15 feet BGS in areas that had reported concentrations in excess of 1,000 μg/kg from previous investigations; borings BP-5, SB-4, and SB-6 (Figure 1).

SUBSURFACE INVESTIGATION

Soil Borings

Three soil borings (designated CB-1, CB-2, and CB-3) were advanced at the site in the approximate locations shown in Figure 1. The soil boring locations were selected based upon the locations of the areas that had reported concentrations in excess of 1,000 μg/kg from previous investigations conducted at the site. Soil boring CB-1 was advanced in the vicinity of previous soil boring SB-6 where PCE and TCE were detected at concentrations up to 3,500 and 150 μg/kg (3,650 μg/kg total VOCs), respectively, in a sample collected from approximately 7.5 feet BGS; soil boring CB-2 was advanced in the vicinity of soil boring BP-5 where PCE and TCE were detected at concentrations up to 1,100 and 140 μg/kg (1,240 μg/kg total VOCs), respectively, in a soil sample collected from approximately 5 feet BGS; and CB-3 was advanced in the vicinity of SB-4 where PCE and TCE were detected at concentrations up to 1,490 and 40 μg/kg (1,530 μg/kg total VOCs), respectively, in a sample collected from approximately 12.5 feet BGS.

The soil borings were advanced on 18 July 1995 using a hand-auger. Two of the three borings (CB-1 and CB-3) were advanced to depths of approximately 15 feet BGS, while soil boring CB-2 was advanced to a depth of approximately 13 feet BGS at which point the hand-auger drill-bit sheared off and could not be retrieved from the boring. Soil samples were collected during drilling operations at approximately 5, 10, and 15 feet BGS with the exception of CB-2 where the 15 foot sample was not collected. Soil samples were used for lithologic logging, and all of the samples were used for chemical analyses, as illustrated in Table 1. The procedures used for advancing the hand-augers and soil sampling are presented in Appendix A. Upon completion of each boring, the borings were backfilled with a bentonite and sand mixture to the approximate ground surface and capped at the ground surface with an asphalt patch.

Lithologies encountered during drilling were recorded on a log for each boring (Appendix B). The general lithologies encountered consisted of alternating clayey silts and silty sands to a depth of approximately 15 feet BGS, which are consistent with the findings of the previous subsurface investigations.

ANALYTICAL RESULTS

Soil samples collected during the investigation were analyzed for VOCs in general accordance with Environmental Protection Agency (EPA) Method No. 8010. Analytical results are summarized in Table 1, and the laboratory reports and chain-of-custody documents are presented in Appendix C.

The results of the sampling indicated that only detectable concentrations of PCE and TCE were present in the samples analyzed. The maximum concentration of PCE reported was 17 μg/kg in a sample collected from soil boring CB-1 at a depth of approximately 15 feet BGS. PCE was not detected in the samples collected from this boring at depths of approximately 5 and 10 feet BGS. PCE was reported at concentrations of 7 and 14 μg/kg in samples collected from soil boring CB-2 at a depths of approximately 5 and 10 feet BGS, respectively. PCE was reported at a concentration of 6.3 μg/kg in a sample collected from soil boring CB-3 at a depth of approximately 15 feet BGS. PCE was not detected in the samples collected from this boring at depths of approximately 5 and 10 feet BGS.

The maximum reported concentration of TCE was 74 μg/kg in a sample collected from soil boring CB-2 at a depth of 10 feet BGS. TCE was detected at a concentration of 6.9 μg/kg in the sample collected from this boring at a depth of approximately 5 feet BGS. TCE was reported at a concentration of 12 μg/kg in a sample collected from soil boring CB-1 at a depth of approximately 15 feet BGS. TCE was not detected in the samples collected from this boring at depths of approximately 5 and 10 feet BGS. TCE was not detected in any of the three samples collected from soil boring CB-3.

A summary of the VOCs that were detected in the soil samples analyzed is shown in Table 1. Laboratory analytical results reported that total VOC concentrations did not exceed 1,000 μg/kg in the soil samples collected during this phase of the investigation.

TABLE 1
LABORATORY ANALYTICAL RESULTS FOR SOIL SAMPLES

Boring Number	Depth (feet)[A]	Chlorinated Hydrocarbons		
		PCE[B] ug/kg[C]	TCE[D] ug/kg	Total VOC[E] ug/kg
CB-1	5	<5.0[F]	<5.0	<10.0
	10	<5.0	<5.0	<10.0
	15	17	12	29
CB-2	5	7.0	6.9	13.9
	10	14	74	88
CB-3	5	<5.0	<5.0	<10.0
	10	<5.0	<5.0	<10.0
	15	6.3	<5.0	6.3

A Depth is in feet below ground surface.
B PCE = Tetrachloroethene.
C ug/kg = microgram per kilogram.
D TCE = Trichloroethene.
E Total VOC = Total volatile organic compounds.
F The less than symbol denotes that the compound was not detected above the detection limit shown.

DISCUSSION

Subsurface Investigation

The results of the soil sampling indicated that PCE and TCE were present in the soil samples analyzed at concentrations up to 17 and 74 μg/kg, respectively. The highest total VOC concentration was 88 μg/kg in a soil sample collected soil boring CB-2 at a depth of approximately 10 feet BGS. The soil samples were collected in areas previously identified to be impacted with total VOC at concentrations up to 3,650 μg/kg. This represents a 97 percent reduction in VOC concentrations beneath the site. Because these concentrations are orders of magnitude less than the cleanup criteria of 1,000 μg/kg established for this investigation, it is our professional judgment that the remediation of soil is complete.

CONCLUSIONS

Based on the results of the investigation, current regulatory guidelines, and the professional judgment of Applied Geosciences Inc., the following conclusions have been drawn:

- Residual VOC concentrations are well below the cleanup criteria of 1,000 μg/kg; and
- Remediation of the soil is complete.

RECOMMENDATIONS

Based on the conclusions presented in this report, current regulatory guidelines, and the professional judgement of Applied Geosciences Inc., the following recommendations are presented for your consideration:

- No further action regarding the formerly impacted soil at the site is necessary;
- A no further action letter should be issued by the RWQCB for soil at the site; and
- The VES operations should be discontinued and the system dismantled.

Should you have any questions regarding the information contained in this letter report, please feel free to contact us at your convenience.

Very truly yours,
APPLIED GEOSCIENCES INC.

Jeffrey S. Pyle
Staff Geologist

William Weaver
Project Manager

Jon Lovegreen, C.E.G.
Certified Engineering Geologist
No. EG 1164

ATTACHMENTS

Table 1:	Laboratory Analytical Results for Soil Samples
Figure 1:	Site Vicinity Map
Figure 2:	Site Plan Showing Boring Locations
Appendix A:	Field Procedures
Appendix B:	Boring Logs
Appendix C:	Laboratory Reports and Chain-of-Custody Documents

REFERENCES

Applied Geosciences Inc., 1991, Phase II subsurface investigation for the American Electronics Inc. facility located at 1600 East Valencia Drive in the city of Fullerton, California: dated 30 August 1991.

_____, 1992, Additional subsurface investigation and first quarterly round of groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California: Unpublished report dated 18 March 1992.

_____, 1994, Vapor extraction system (VES) conceptual design and plan to install and operate a vapor extraction system at the American Electronics Inc. facility in Fullerton, California: Unpublished report dated 14 April 1994.

_____, 1995a, System startup and progress report for the vapor extraction remediation project at the American Electronics Inc. facility located at 1600 East Valencia Drive, Fullerton, California: Unpublished report dated 4 January 1995.

_____, 1995b, Quarterly vapor extraction system (VES) progress report and fourth round of semiannual groundwater monitoring for the American Electronics facility located in Fullerton, California: Unpublished report dated 23 March 1995.

Ray E. Lewis Consulting Engineers, Inc. (REL), 1989, subsurface investigation to determine the extent of contaminant migration: Unpublished report dated 30 June 1989, 10 p.

Region Water Quality Control Board - Santa Ana Region (RWQCB), 1991a, Letter to Richard F. Holland, President of American Electronics, Inc.: Dated 25 October 1991.

_____, 1991b, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 20 December 1991.

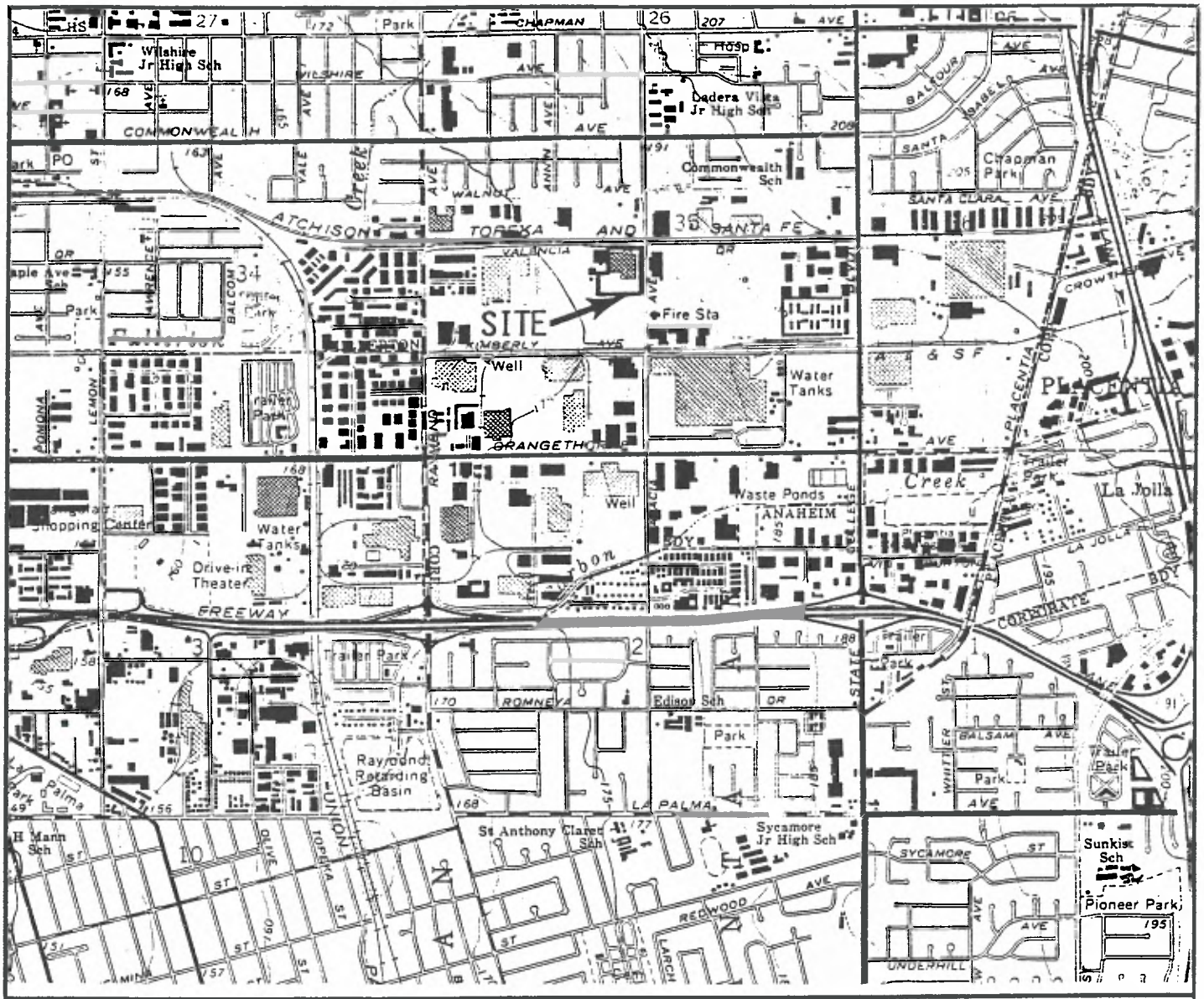
_____, 1991c, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 26 December 1991.

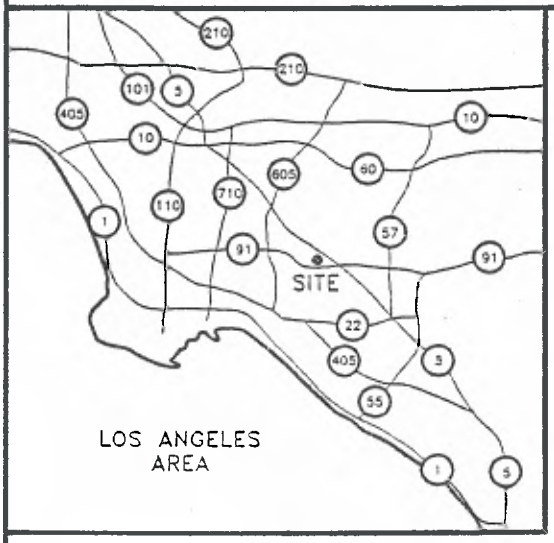
_____, 1992, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 22 June 1992.

_____, 1994a, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 22 June 1994.

_____, 1994b, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 23 May 1994.

_____, 1995, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 5 July 1995.





NORTH

0 ½ 1

SCALE, MILES

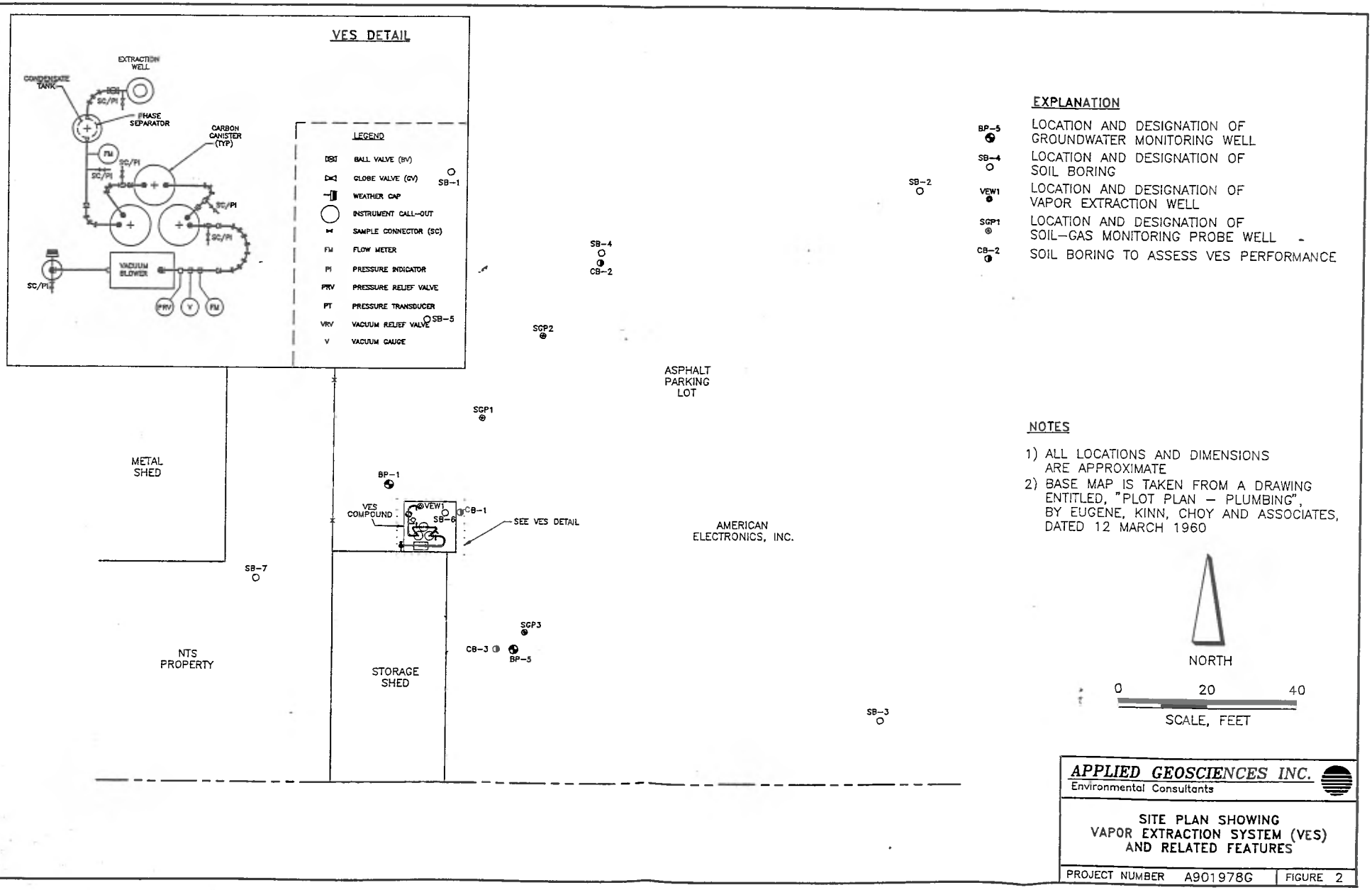
NOTE

BASE MAP IS TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA–ORANGE CO., 7.5–MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

APPLIED GEOSCIENCES INC.
Environmental Consultants

SITE VICINITY MAP

PROJECT NUMBER A901978G | FIGURE 1



APPLIED GEOSCIENCES INC.
Environmental Consultants

SITE PLAN SHOWING
VAPOR EXTRACTION SYSTEM (VES)
AND RELATED FEATURES

PROJECT NUMBER A901978G | FIGURE 2

APPENDIX A

FIELD PROCEDURES

APPENDIX A

SUMMARY OF FIELD PROCEDURES

Hand-Augering Procedures

1. Hand-augered borings were advanced to depths of up to approximately 15 feet BGS.

2. Hand-augered samples were collected using a slide-hammer-style hand sampler and 4-inch-long stainless-steel sample tubes.

3. Hand-augering equipment was washed between borings in an Alconox solution (an inorganic detergent), followed by two tapwater rinses and a final deionized-water rinse.

4. Soil samples were collected at depths of approximately 5, 10, and 15 feet BGS.

5. Immediately after sample collection, the ends of the sample tubes were covered with Teflon and capped with PVC end caps.

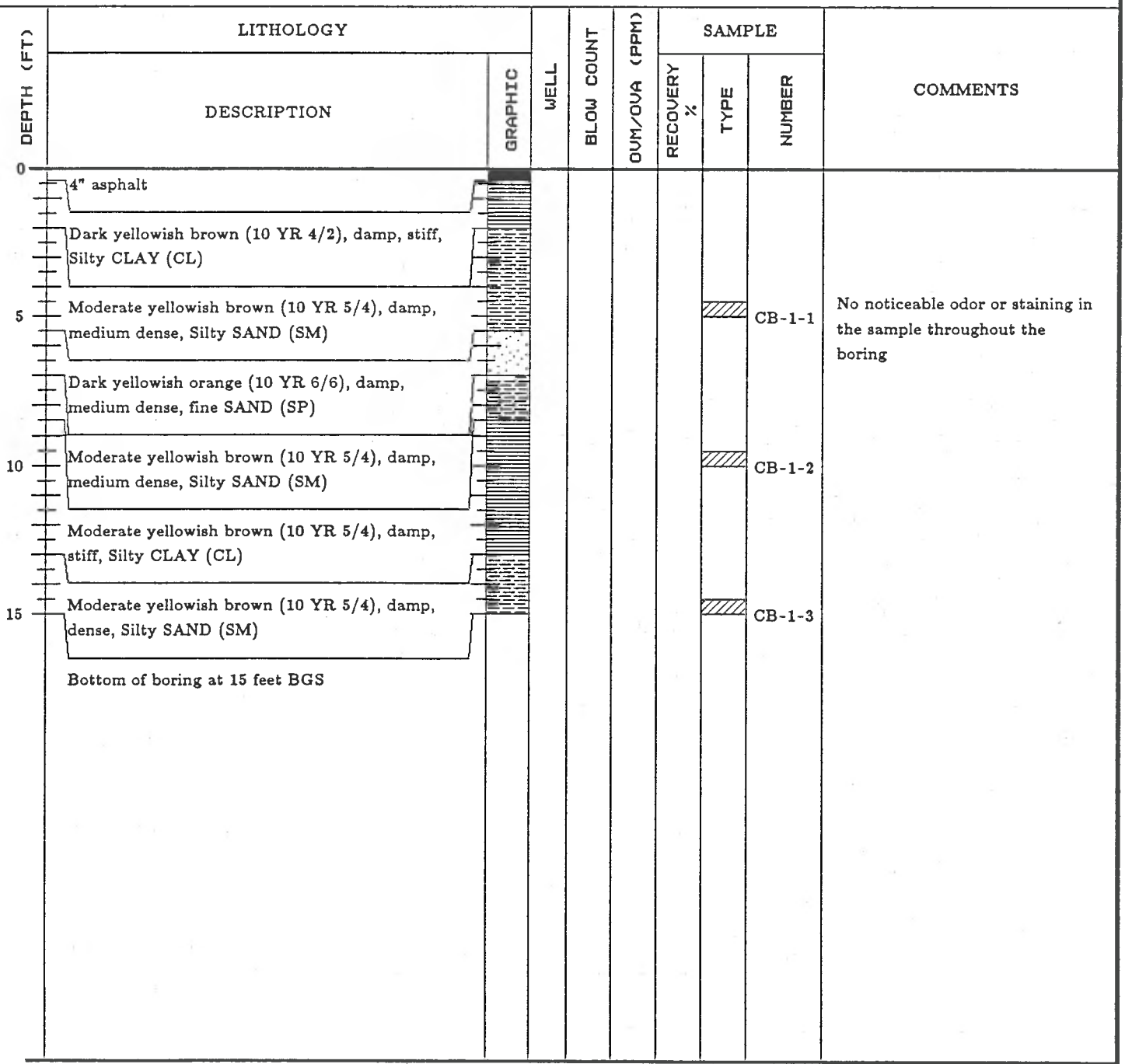
6. Soil cuttings from the hand augering were placed in DOT-approved 55-gallon barrels and stored on-site pending disposal disposition. The barrels were labeled with the boring designation from which the soil was collected, date, emergency contact, and project number.

7. Hand-augered borings were backfilled to approximately 0.5 foot BGS with a 3 to 1 mixture of sand and bentonite, and were completed to ground surface with asphalt.

APPENDIX B

BORING LOGS

PROJECT ▷ AMERICAN ELECTRONICS	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ A901978G
LOGGED BY ▷ JEFF PYLE		START DATE ▷ 18 July 1995
CHECKED BY ▷ JON LOVEGREEN		COMPLETION DATE ▷ 18 July 1995
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ N/A
DRILLING EQUIPMENT ▷ HAND AUGER		
BORING DEPTH (FT) ▷ 15.0	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial: Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A TO N/A
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ N/A
BACKFILL MATERIAL ▷ SAND AND BENTONITE CHIPS		



BORING DESIGNATION		PAGE NUMBER	FIGURE NUMBER
CB-1	BORING LOG	1 OF 1	

PROJECT ▷ AMERICAN ELECTRONICS	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ A901978G
LOGGED BY ▷ JEFF PYLE		START DATE ▷ 18 July 1995
CHECKED BY ▷ JON LOVEGREEN		COMPLETION DATE ▷ 18 July 1995
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ N/A
DRILLING EQUIPMENT ▷ HAND AUGER		
BORING DEPTH (FT) ▷ 13.0	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial: Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A TO N/A
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ N/A
BACKFILL MATERIAL ▷ SAND AND BENTONITE CHIPS		

DEPTH (FT)	LITHOLOGY DESCRIPTION	GRAPHIC	WELL	BLOW COUNT	OVM/OVA (PPM)	SAMPLE RECOVERY %	SAMPLE TYPE	SAMPLE NUMBER	COMMENTS
0	4" asphalt								
	Dark yellowish brown (10 YR 4/2), damp, stiff, CLAY (CL)								
5	Moderate yellowish brown (10 YR 5/4), damp, stiff, Sandy SILT (ML)							CB-2-1	No noticeable odor or staining in the sample throughout the boring
	Dark yellowish orange (10 YR 6/6), damp, medium dense, Silty SAND (SM)								
10	Dark yellowish orange (10 YR 6/2), damp, dense, fine SAND (SP)							CB-2-2	
	Moderate yellowish brown (10 YR 5/4), damp, stiff, Silty CLAY (CL)								
	Moderate yellowish brown (10 YR 5/4), damp, stiff, Sandy SILT (ML)								No recovery, auger sheared off post
	Bottom of boring at 13 feet BGS								

BORING DESIGNATION	BORING LOG	PAGE NUMBER	FIGURE NUMBER
CB-2		1 OF 1	

PROJECT ▷ AMERICAN ELECTRONICS	APPLIED GEOSCIENCES INC.	PROJECT NUMBER ▷ A901978G
LOGGED BY ▷ JEFF PYLE		START DATE ▷ 18 July 1995
CHECKED BY ▷ JON LOVEGREEN		COMPLETION DATE ▷ 18 July 1995
GROUND SURFACE ELEVATION DATUM (FT-MSL) ▷		DRILLING COMPANY ▷ N/A
DRILLING EQUIPMENT ▷ HAND AUGER		
BORING DEPTH (FT) ▷ 15.0	WELL DEPTH (FT) ▷ N/A	WATER DEPTH (FT)-Initial: Completion:
WELL MATERIALS ▷ N/A		WELL SCREEN INTERVAL (FT) ▷ N/A TO N/A
WELL CASING ELEVATION (FT-MSL) ▷ N/A		OVM/OVA ▷ N/A
BACKFILL MATERIAL ▷ SAND AND BENTONITE CHIPS		

DEPTH (FT)	LITHOLOGY DESCRIPTION	GRAPHIC	WELL	BLOW COUNT	OVM/OVA (PPM)	SAMPLE RECOVERY %	SAMPLE TYPE	SAMPLE NUMBER	COMMENTS
0	4" asphalt								
	6" SAND with cobbles								
	Dark yellowish brown (10 YR 4/2), damp, stiff, Silty CLAY (CL)								
5								CB-3-1	Some charcoal fragments noted from 2 to 4 feet BGS
	Moderate yellowish brown (10 YR 5/4), damp, stiff, Sandy SILT (ML)								
	Dark yellowish orange (10 YR 6/6), damp, dense, Silty SAND (SM)								
10								CB-3-2	
	Dark yellowish orange (10 YR 6/6), damp, dense, fine SAND (SP)								
	Moderate yellowish brown (10 YR 5/4), damp, stiff, Silty CLAY (CL)								
15								CB-3-3	
	Moderate yellowish brown (10 YR 5/4), damp, stiff, Sandy SILT (ML)								
	Dark yellowish orange (10 YR 6/6), damp, dense, Silty SAND (SM)								
	Bottom of boring at 15 feet BGS								

BORING DESIGNATION	BORING LOG	PAGE NUMBER	FIGURE NUMBER
CB-3		1 OF 1	

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

RECEIVED
JUL 2 8 1995
APPLIED GEOSCIENCES INC.

ORANGE COAST ANALYTICAL THANKS YOU FOR YOUR BUSINESS

THE FOLLOWING PAGES ARE THE ANALYSIS REPORT

ON THE SAMPLES YOU REQUESTED.

IF YOU HAVE ANY QUESTIONS REGARDING THIS REPORT

PLEASE FEEL FREE TO CONTACT US.

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB1-1
Laboratory Sample #: 95070254
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	25	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	20	N.D.
Methylene chloride	25	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*107*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, RB1-2
Laboratory Sample #: 95070255
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	25	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	20	N.D.
Methylene chloride	25	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*108*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB1-3
Laboratory Sample #: 95070256
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*	
Bromodichloromethane	5.0	N.D.	
Bromoform	5.0	N.D.	
Bromomethane	5.0	N.D.	
Carbon tetrachloride	5.0	N.D.	
Chlorobenzene	5.0	N.D.	
Chlorodibromomethane	5.0	N.D.	
Chloroethane	10	N.D.	
2-Chloroethyl vinyl ether	25	N.D.	
Chloroform	5.0	N.D.	
Chloromethane	10	N.D.	
1,2-Dichlorobenzene	10	N.D.	
1,3-Dichlorobenzene	10	N.D.	
1,4-Dichlorobenzene	10	N.D.	
1,1-Dichloroethane	5.0	N.D.	
1,2-Dichloroethane	5.0	N.D.	
1,1-Dichloroethene	5.0	N.D.	
Trans 1,2-Dichloroethene	5.0	N.D.	
1,2-Dichloropropane	5.0	N.D.	
cis-1,3-Dichloropropene	5.0	N.D.	
trans-1,3-Dichloropropene	20	N.D.	
Methylene chloride	25	N.D.	
1,1,2,2-Tetrachloroethane	5.0	N.D.	
Tetrachloroethene	5.0	17	<---
1,1,1-Trichloroethane	5.0	N.D.	
1,1,2-Trichloroethane	5.0	N.D.	
Trichloroethene	5.0	12	<---
Trichlorofluoromethane	5.0	N.D.	
Vinyl chloride	5.0	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*102*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB2-1
Laboratory Sample #: 95070257
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*	
Bromodichloromethane	5.0	N.D.	
Bromoform	5.0	N.D.	
Bromomethane	5.0	N.D.	
Carbon tetrachloride	5.0	N.D.	
Chlorobenzene	5.0	N.D.	
Chlorodibromomethane	5.0	N.D.	
Chloroethane	10	N.D.	
2-Chloroethyl vinyl ether	25	N.D.	
Chloroform	5.0	N.D.	
Chloromethane	10	N.D.	
1,2-Dichlorobenzene	10	N.D.	
1,3-Dichlorobenzene	10	N.D.	
1,4-Dichlorobenzene	10	N.D.	
1,1-Dichloroethane	5.0	N.D.	
1,2-Dichloroethane	5.0	N.D.	
1,1-Dichloroethene	5.0	N.D.	
Trans 1,2-Dichloroethene	5.0	N.D.	
1,2-Dichloropropane	5.0	N.D.	
cis-1,3-Dichloropropene	5.0	N.D.	
trans-1,3-Dichloropropene	20	N.D.	
Methylene chloride	25	N.D.	
1,1,2,2-Tetrachloroethane	5.0	N.D.	
Tetrachloroethene	5.0	7.0	<---
1,1,1-Trichloroethane	5.0	N.D.	
1,1,2-Trichloroethane	5.0	N.D.	
Trichloroethene	5.0	6.9	<---
Trichlorofluoromethane	5.0	N.D.	
Vinyl chloride	5.0	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*96*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB2-2
Laboratory Sample #: 95070258
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*	
Bromodichloromethane	5.0	N.D.	
Bromoform	5.0	N.D.	
Bromomethane	5.0	N.D.	
Carbon tetrachloride	5.0	N.D.	
Chlorobenzene	5.0	N.D.	
Chlorodibromomethane	5.0	N.D.	
Chloroethane	10	N.D.	
2-Chloroethyl vinyl ether	25	N.D.	
Chloroform	5.0	N.D.	
Chloromethane	10	N.D.	
1,2-Dichlorobenzene	10	N.D.	
1,3-Dichlorobenzene	10	N.D.	
1,4-Dichlorobenzene	10	N.D.	
1,1-Dichloroethane	5.0	N.D.	
1,2-Dichloroethane	5.0	N.D.	
1,1-Dichloroethene	5.0	N.D.	
Trans 1,2-Dichloroethene	5.0	N.D.	
1,2-Dichloropropane	5.0	N.D.	
cis-1,3-Dichloropropene	5.0	N.D.	
trans-1,3-Dichloropropene	20	N.D.	
Methylene chloride	25	N.D.	
1,1,2,2-Tetrachloroethane	5.0	N.D.	
Tetrachloroethene	5.0	14	<---
1,1,1-Trichloroethane	5.0	N.D.	
1,1,2-Trichloroethane	5.0	N.D.	
Trichloroethene	5.0	74	<---
Trichlorofluoromethane	5.0	N.D.	
Vinyl chloride	5.0	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*113*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB3-1
Laboratory Sample #: 95070259
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	25	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	20	N.D.
Methylene chloride	25	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*103*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB3-2
Laboratory Sample #: 95070260
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*
Bromodichloromethane	5.0	N.D.
Bromoform	5.0	N.D.
Bromomethane	5.0	N.D.
Carbon tetrachloride	5.0	N.D.
Chlorobenzene	5.0	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	25	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	5.0	N.D.
1,2-Dichloropropane	5.0	N.D.
cis-1,3-Dichloropropene	5.0	N.D.
trans-1,3-Dichloropropene	20	N.D.
Methylene chloride	25	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
Tetrachloroethene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	5.0	N.D.
Trichloroethene	5.0	N.D.
Trichlorofluoromethane	5.0	N.D.
Vinyl chloride	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*101*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Will Weaver
17321 Irvine Blvd.
Tustin, CA 92680

Client Project ID: American Electronics
Client Project #: A901978G

Sample Description: Soil, CB3-3
Laboratory Sample #: 95070261
Laboratory Reference #: AGI 6151

Sampled : 07-18-95
Received: 07-19-95
Analyzed: 07-24-95
Reported: 07-26-95

VOLATILE ORGANIC COMPOUNDS (EPA 8010)

ANALYTE	*DETECTION LIMIT ug/kg*	*SAMPLE RESULTS ug/kg*	
Bromodichloromethane	5.0	N.D.	
Bromoform	5.0	N.D.	
Bromomethane	5.0	N.D.	
Carbon tetrachloride	5.0	N.D.	
Chlorobenzene	5.0	N.D.	
Chlorodibromomethane	5.0	N.D.	
Chloroethane	10	N.D.	
2-Chloroethyl vinyl ether	25	N.D.	
Chloroform	5.0	N.D.	
Chloromethane	10	N.D.	
1,2-Dichlorobenzene	10	N.D.	
1,3-Dichlorobenzene	10	N.D.	
1,4-Dichlorobenzene	10	N.D.	
1,1-Dichloroethane	5.0	N.D.	
1,2-Dichloroethane	5.0	N.D.	
1,1-Dichloroethene	5.0	N.D.	
Trans 1,2-Dichloroethene	5.0	N.D.	
1,2-Dichloropropane	5.0	N.D.	
cis-1,3-Dichloropropene	5.0	N.D.	
trans-1,3-Dichloropropene	20	N.D.	
Methylene chloride	25	N.D.	
1,1,2,2-Tetrachloroethane	5.0	N.D.	
Tetrachloroethene	5.0	6.3	<---
1,1,1-Trichloroethane	5.0	N.D.	
1,1,2-Trichloroethane	5.0	N.D.	
Trichloroethene	5.0	N.D.	
Trichlorofluoromethane	5.0	N.D.	
Vinyl chloride	5.0	N.D.	

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Surrogate Recovery	*%*
1,4-Dichlorobutane	*114*

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Q C D A T A R E P O R T

Analysis: Volatile Organic Compounds (EPA 8010)

Date of Analysis: 07/24/95

Laboratory Sample No: 95070254

Laboratory Reference No: AGI 6151

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
1,1-Dichloroethane	0.0	20	20	20	100	100	0
Trichloroethene	0.0	20	22	24	110	120	9
Tetrachloroethene	0.0	20	22	22	110	110	0

Definition of Terms:

R1 Results of First Analysis

SP Spike Concentration Added to Sample

MS Matrix Spike Results

MSD Matrix Spike Duplicate Results

PR1 Percent Recovery of MS: {(MS - R1) / SP } X 100

PR2 Percent Recovery of MSD: {(MSD - R1) / SP } X 100

RPD Relative Percent Difference: {(MS - MSD)/(MS + MSD)} X 2 X 100

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

Applied Geosciences Inc.

Chain of Custody

29B Technology Drive, Suite 100
Irvine, California 92718
(714) 453-8545
(714) 453-0510 FAX

Project Name: AMERICAN ELECTRONICS

Project Number: A9019786

Project Manager: WILLIAM WEAVER

Laboratory Name: ORANGE COAST ANALYTICAL

Method of Shipment:

Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas__ Diesel__	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs 8010 EPA ~~8260 / 8240~~	VOCs EPA 8021	BNAs EPA 8270				
CB1-1		5	7-18-95	X			X						X						
CB1-2		10		X			X						X						
CB1-3		15		X			X						X						
CB2-1		5		X			X						X						
CB2-2		10		X			X						X						
CB3-1		5		X			X						X						
CB3-2		10		X			X						X						
CB3-3		15		X			X						X						

Remarks:

Turnaround Time

- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

	Date	Time		Date	Time
Relinquished by sampler	7-18-95	4:30	Received by		
Relinquished by	7-19-95	12:20	Received by		
Relinquished by			Received by laboratory	7/19/95	12:20PM

California Regional Water Quality Control Board
Santa Ana Region

Winston H. Hickox
Secretary for Environmental Protection

Internet Address: http://www.swrcb.ca.gov/rwqcb8
3737 Main Street, Suite 500, Riverside, California 92501-3348
Phone (909) 782-4130 - FAX (909) 781-6288

Gray Davis
Governor

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.swrcb.ca.gov/rwqcb8.

October 30, 2003

Mr. Jim Heiser
American Electronics, Inc.
C/o Ducommun, Inc.
111 West Ocean Blvd., Suite 900
Long Beach, CA 90802

Mr. Peter Desforges
President
Wohl/Cypress, LLC
C/o Wohl Investment Company
2402 Michelson Dr., Suite170
Irvine, CA 92612

DISCONTINUATION OF MONITORING AND DECOMMISSIONING OF WELLS, AMERICAN ELECTRONICS, INC., 1600 EAST VALENCIA DRIVE, FULLERTON, CA

Dear Mr. Heiser and Mr. Desforges:

On June 20, 1996, a no further action letter was issued for the groundwater at this site. This letter was conditioned upon maintenance of existing monitoring wells BP-2, BP-3, BP-4 and BP-8, and annual monitoring of these wells for at least two years. Previously, on April 19, 1996, a no further action letter was issued for the cleanup of soil at this site.

Annual monitoring of wells BP-2, BP-3, BP-4 and BP-8 was conducted in November 1996 and December 1997. The December 1997 report indicates that trichloroethene (TCE), tetrachloroethene (PCE), and 1,1-dichloroethene (DCE) were detected at maximum concentrations of 22, 90 and 3.1 micrograms per liter (µg/l), respectively. Toluene was reported at concentrations ranging from 19 to 29 µg/l and 1,2-dichloroethane (DCA) was detected at concentrations ranging from 2.5 to 5.2 µg/l. Toluene appears to have been introduced as a lab contaminant and 1,2-DCA has been detected only sporadically in these wells in the past. The time versus concentration charts indicate that the concentrations appear to go through minor fluctuations but are generally consistent over the last seven years and seem to have leveled out.

Based upon the data provided to us, you may discontinue monitoring of these wells and you may decommission these wells. Please be aware that the wells must be decommissioned according to

the approved State and County requirements and standards for water wells. A report of decommissioning of the wells must be submitted within 30 days of completion of activity.

If you have any questions, please contact me at (909) 782-3252, or you may call Ann Sturdivant, Chief of our SLIC/DoD Section, at (909) 782-4904.

Sincerely,

Maneck G. Chichgar
Associate Engineering Geologist

cc: Roy Herndon, OCWD

C: Data/Maneck/Am Elec Decomm Wells

RAY E. LEWIS CONSULTING ENGINEERS, INC.

A California Corporation

459 HOLLY STREET
LAGUNA BEACH, CA 92651
(714) 497-1580

NOV 28 1990

KVB	11/28
RLH	11/28
CAB	11/28

November 24, 1990

Mr. Robert L. Holub
Chief - Groundwater Investigation Section
California Regional Water Quality Control Board
6809 Indiana Avenue - Suite 200
Riverside, California 92508

Subject: Revised Plan of Action - American Electronics, Inc.
1600 Valencia Avenue, Fullerton California

Dear Sir:

As requested, this office has amended the Revised Plan of Action as previously submitted to your office to determine the extent of the contamination of the groundwaters in the vicinity of the subject industry as outlined below:

ADDITIONAL MONITORING WELLS

Included with this transmittal are Figures Nos. 1 through 7 which are described as follows:

Figure No. 1 - This is a Groundwater Contour Map dated November 1, 1988 as published by the Orange County Water District. This contour map generally shows a southwesterly gradient from the subject property.

Figure No. 2 - This is a groundwater contour map of the subject property drawn from the monitoring well groundwater measurements taken in March, 1989. These measurements indicate a northwesterly gradient of the groundwaters.

Figure No. 3 - This groundwater contour map of AEI property is based on the monitoring well measurements taken in August of this year. This indicates a southwesterly gradient.

Figure No. 4 - This is a map of the area in the vicinity of AEI site indicating the locations of two industries where subsurface investigations have been conducted recently, i.e., at 800 South Raymond Avenue and at 1818 Rosslynn Avenue.

Figure No. 5 - This is groundwater contour map of the property located at 1818 Rosslynn Avenue which is approximately one-quarter mile southeasterly from the AEI property. This map indicates a northwesterly groundwater gradient.

Figure No. 6 - This is a groundwater contour map of the property located at 800 S. Raymond which is approximately 0.6 mile southwesterly from the AEI site. This map also indicates a northwesterly gradient for the groundwater flow.

Figure No. 7 - This is a map from the Orange County Water District which was contained in a letter to you dated November 16, 1988. In this letter from the OCWD regarding the Prout Properties located at 2424 E. Fender Avenue, Nira Yamachika stated that "... Site SVS #110 is located southwesterly and downgradient of Prout site..". This would indicate that the groundwater gradient in the area is to the southwest.

Based on these groundwater gradient determinations, it is difficult at this time to be specific as to the groundwater gradient for the location of the proposed off-site monitoring well. The off-site well may be located on the property adjacent and to the west of the AEI site or on the property of Yokahama Tire Company to the south of AEI. Therefore, I am proposing that two new monitoring wells designated as BP-4 and BP-5 be installed at this time. After these wells have been installed that groundwater depths be measured in all the on-site wells before we proceed to install the monitoring well off-site. AEI has committed to the off-site well but wants to be sure of the location.

In addition to the two new monitoring wells, two additional boring will be made which will extend to groundwater which is approximately at a depth of 140 feet. Soil sampling will be done as indicated in the Revised Plan submitted to your office on August 16, 1990.

ANALYSIS OF SAMPLES

This office will be assisted by David McElwain & James Soukup from Schaefer Dixon Associates. In recent discussions with these individuals, they have suggested that headspace readings of VOC's be recorded using an organic analyzer (OVA)

flame ionization detector to serve as a screening tool allowing field assessment of the presence of VOCs in the soil. Four to six soil samples per borehole will be submitted for chemical analysis of VOCs. Selected soil samples will be analyzed for permeability. Chemical analysis of the soil samples will be conducted by Associated Laboratories. This laboratory will be responsible for transporting the soil samples to the lab for analysis through proper change of custody procedures. Any physical soil analysis will be performed by Schaefer Dixon Associates.

SCHEDULE

After approval of the amended revision to the Revised Plan of Action, the drilling crews will be scheduled to install the two new monitoring wells and the soil borings as indicated. The third off-site monitoring well will not be scheduled until the proper location has been agreed on by both AEI and your office. Anticipating your approval during the week of November 26, the drilling operation will commence the beginning of the following week. Your office will be notifies 48-hours prior to the commencement of drilling.

If you have any questions, p[lease do not hesitate to call me.

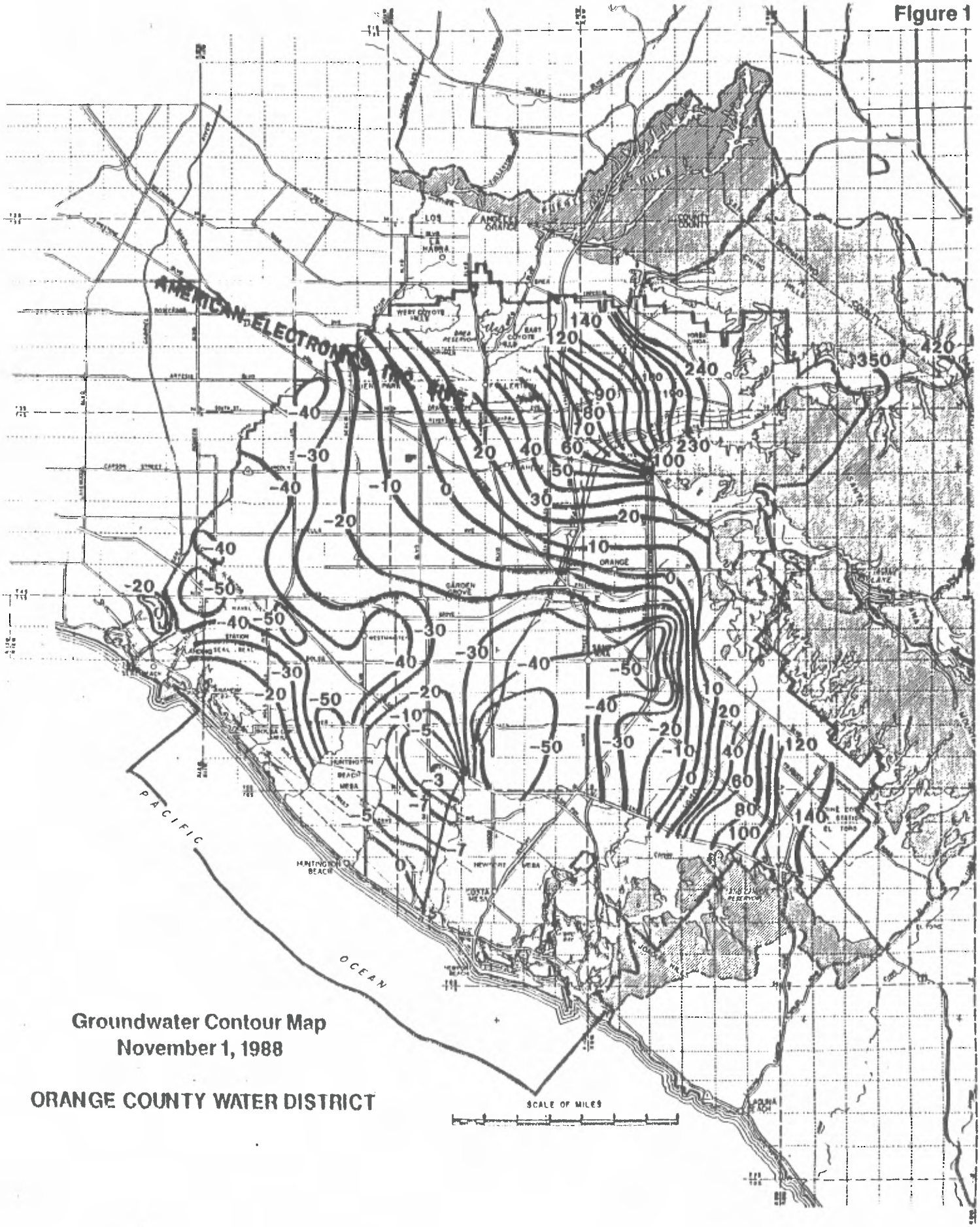
Very truly yours,

Ray E. Lewis, P.E.

cc: Mr. Richard Holland

Encl.

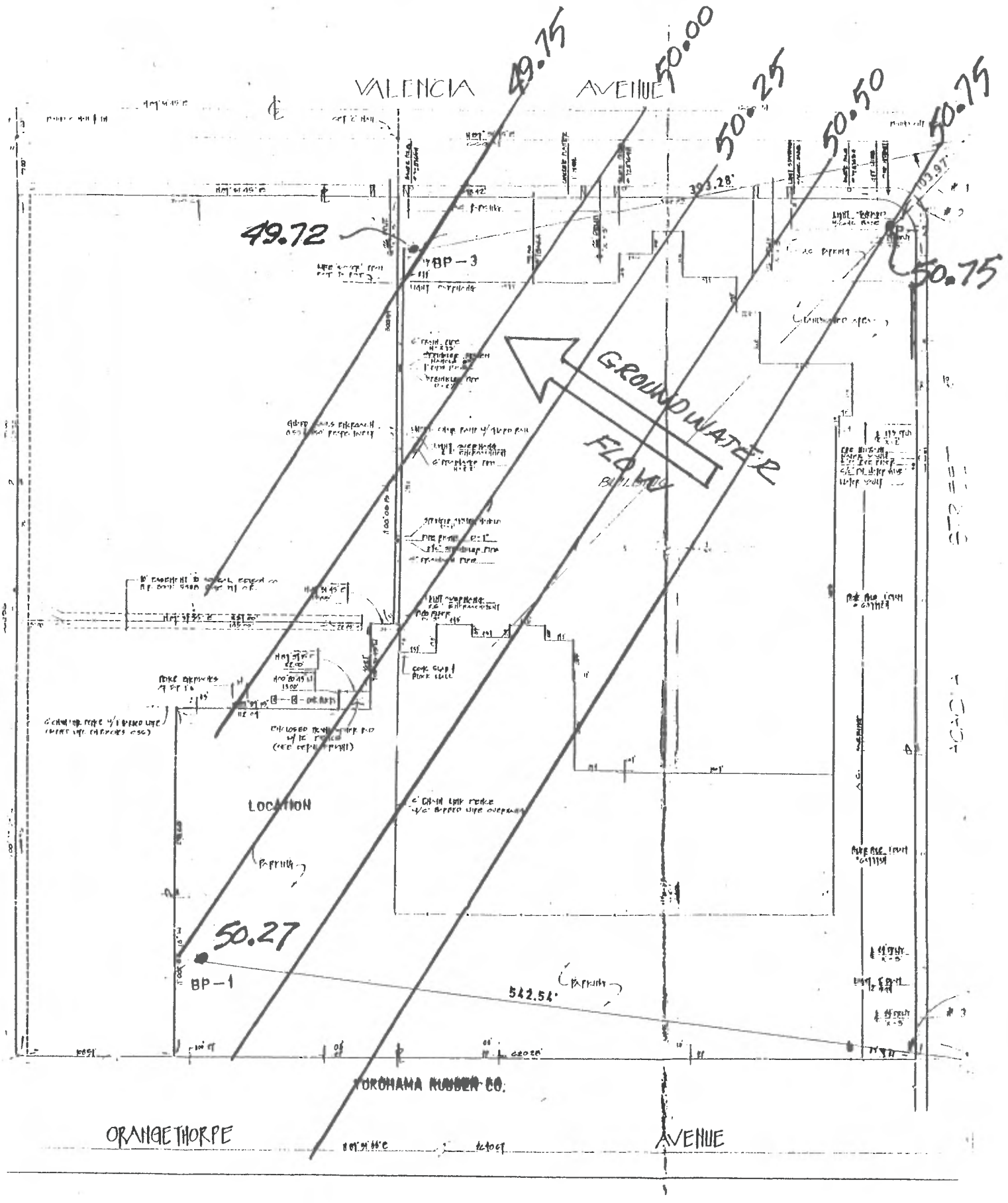
Figure 1



Groundwater Contour Map
November 1, 1988

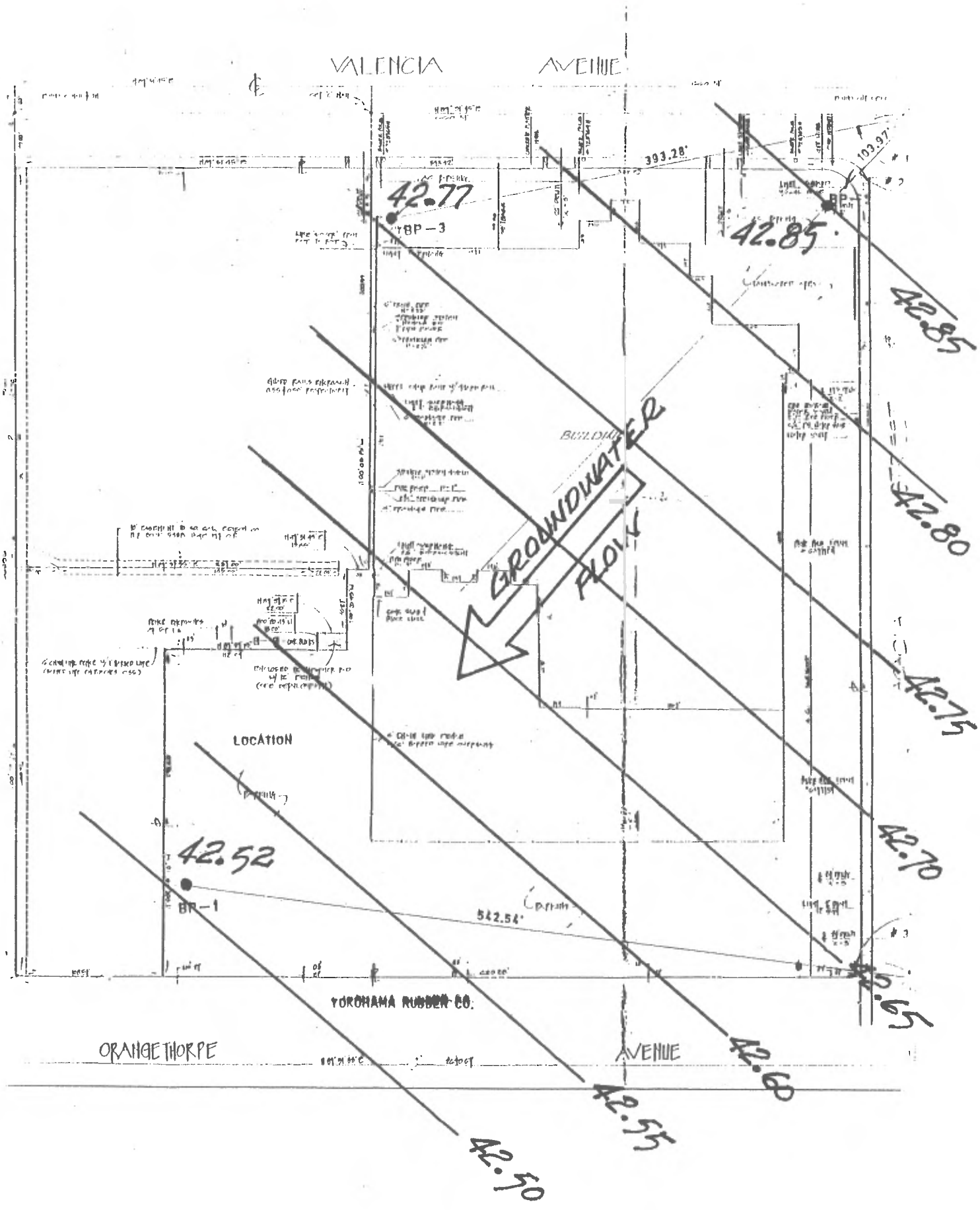
ORANGE COUNTY WATER DISTRICT

FIGURE NO. 2



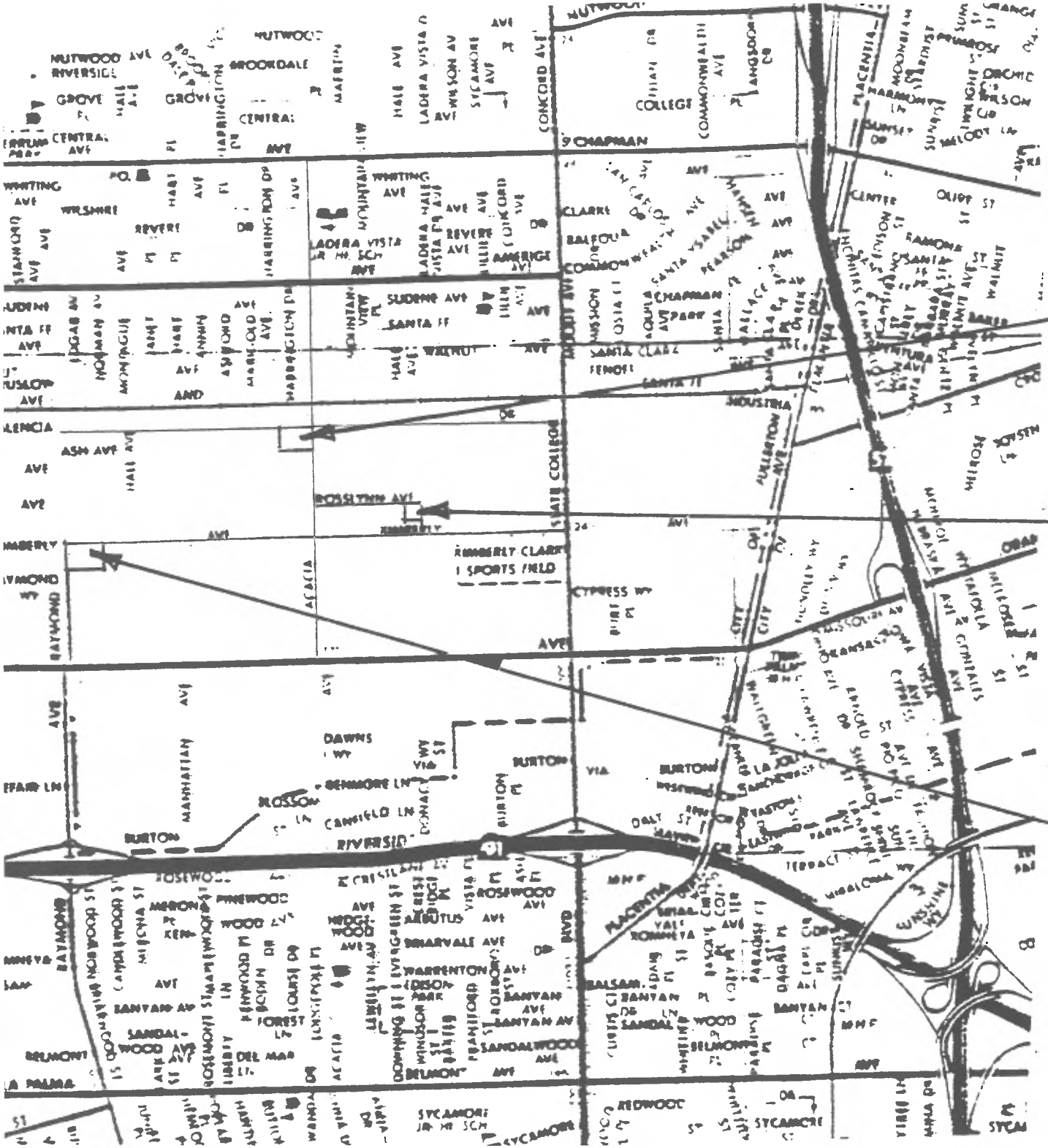
BASED ON GROUNWATER MEASUREMENTS MARCH 30, '89

FIGURE NO. 3



BASED ON GROUNDWATER MEASUREMENTS AUGUST 8, 1990

FIGURE NO. 4

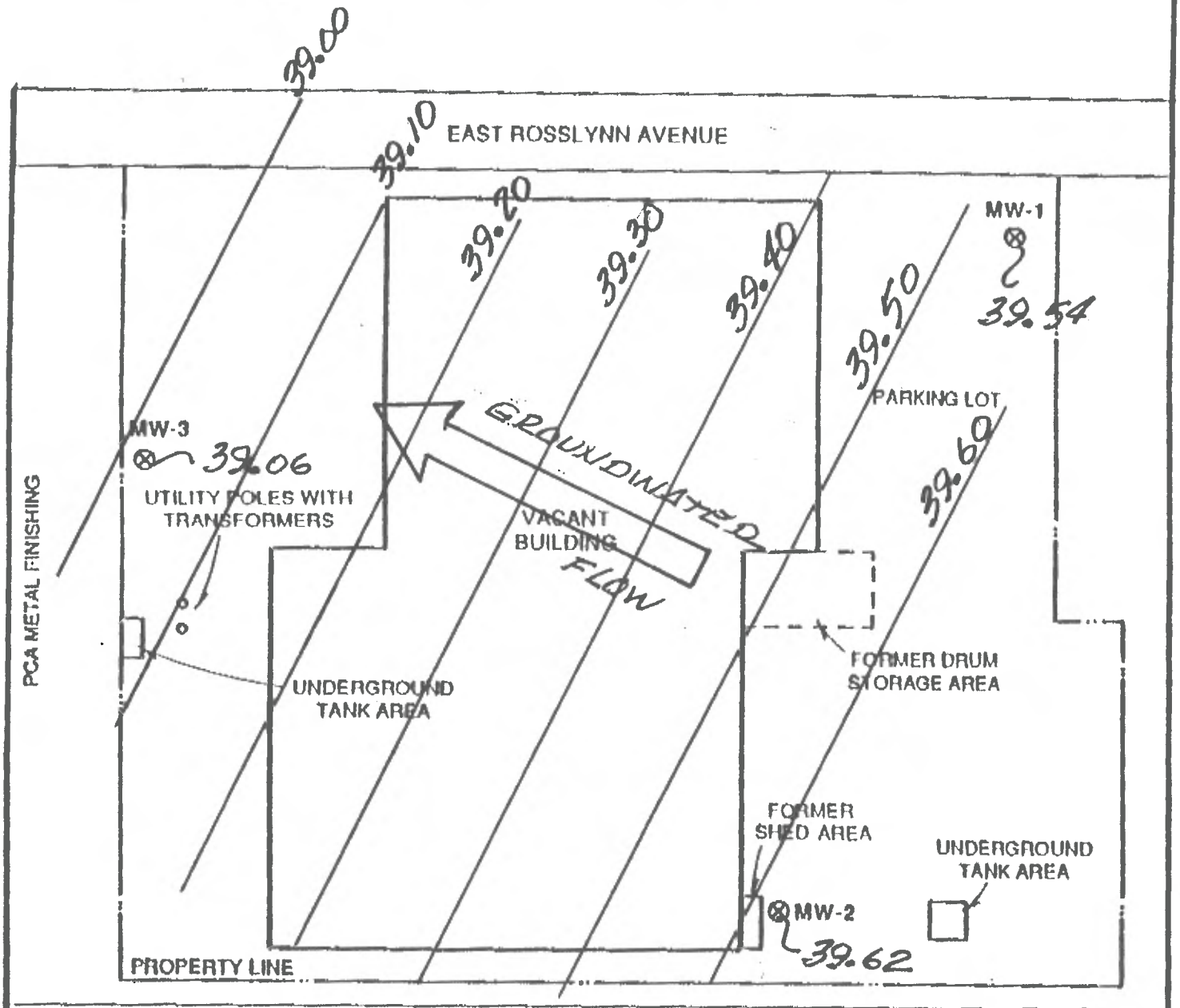


AMERICAN ELECTRONICS
SEE FIG. NOS. 1 & 2 & 3

1818 ROSSLYNN AVE.
SEE FIG. NO. 5

800 S. RAYMOND AVE.
SEE FIG. NO. 6

FIGURE NO. 5



BASED ON GROUNDWATER MEASUREMENTS AUGUST 7, 1990

EXPLANATION

⊗ MONITORING WELL LOCATION

0 20 40
APPROXIMATE SCALE IN FEET

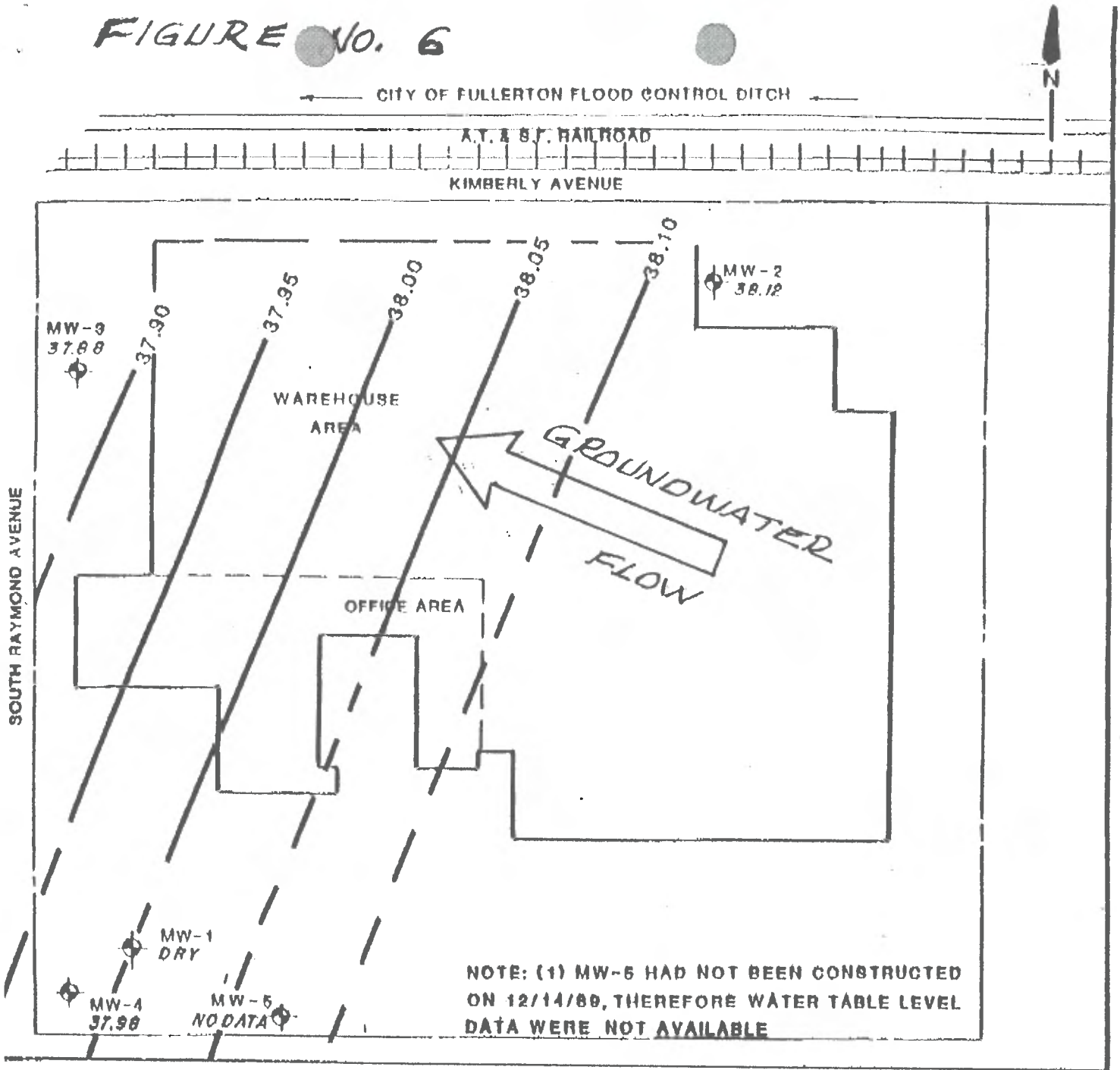
N

PLOT PLAN

1818 E. ROSSLYNN AVENUE SITE
FULLERTON, CALIFORNIA
For Sanderson J. Ray Development

Dames & Moore
FIGURE 2

FIGURE NO. 6



EXPLANATION

MW-4 — GROUND-WATER MONITORING WELL LOCATION AND DESIGNATION

37.98 — GROUND-WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL

37.90 — LINES OF EQUAL GROUND-WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL (DASHED WHERE EXTRAPOLATED)

APPROXIMATE DIRECTION OF GROUND-WATER FLOW

0 50 100 FT.

Title

POTENTIOMETRIC SURFACE
DECEMBER 14, 1989
800 SOUTH RAYMOND AVENUE
FULLERTON, CALIFORNIA

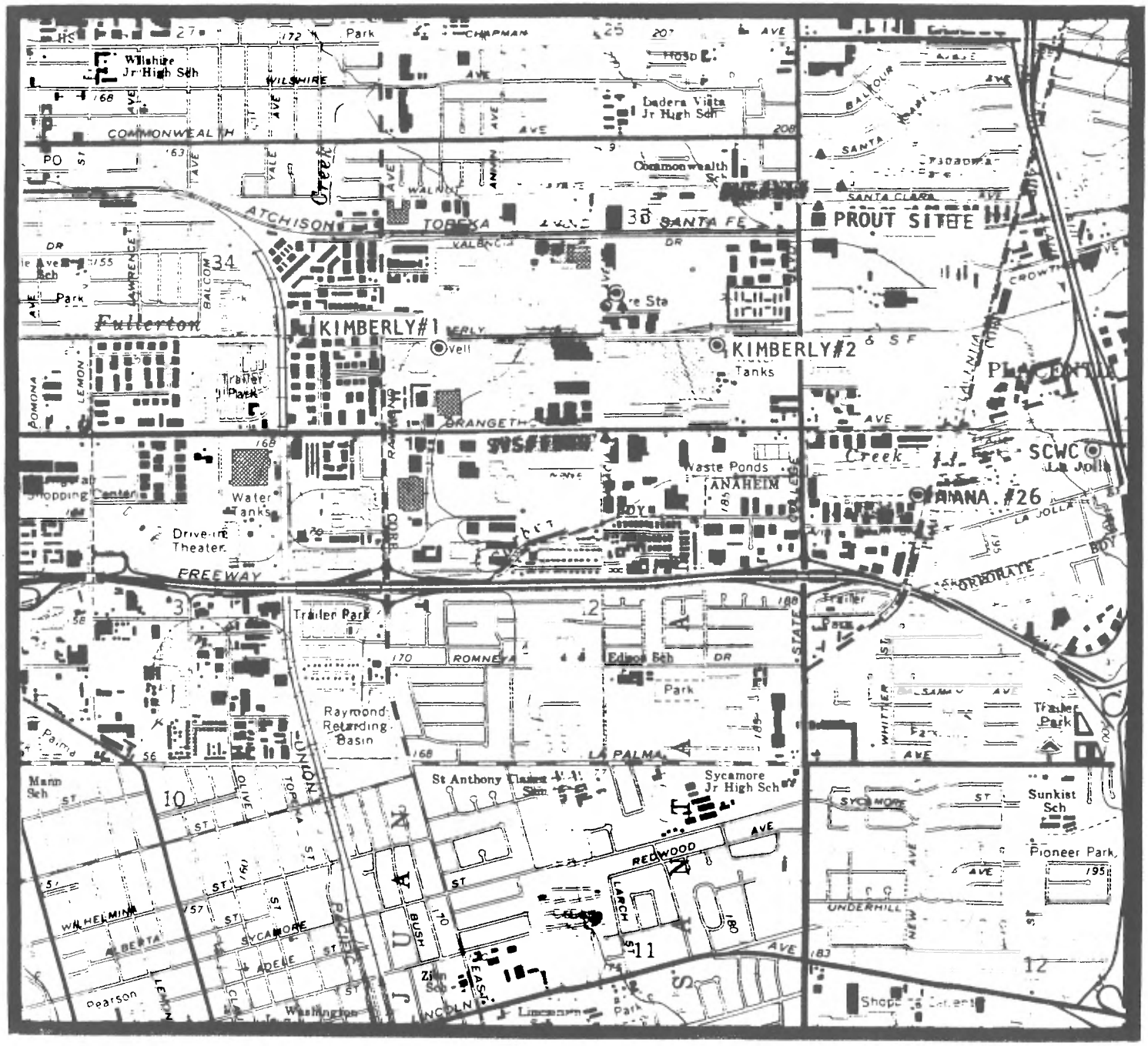
Prepared for

SEDGWICK, DETERT, MORAN & ARNOLD

ROUX ASSOCIATES INC
Consulting Ground Water Geologists & Engineers

Compiled by G.G.	Date 3/90	Figure
Prepared by C.L.	Scale SHOWN	A-1
Project Mgr J.W.	Revision 0	
File No 18105W		

FIGURE NO. 7



CONTOUR INTERVAL 5 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

ATC ENVIRONMENTAL INC.

16 December 1996
14240.0001

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Attention: Mr. Augustine Anijielo

SUBJECT: NOVEMBER 1996 GROUNDWATER MONITORING REPORT FOR THE AMERICAN ELECTRONICS, INC. FACILITY, LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report summarizes the activities and results of the November 1996 round of groundwater monitoring conducted on 14 and 15 November 1996 at the American Electronics, Inc. (AEI) facility (site) located at 1600 East Valencia Drive, Fullerton, California (Figure 1). This round of groundwater monitoring was conducted at the request of the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) and this letter report is presented to you at the request and authorization of Mr. Richard F. Holland of AEI.

The locations of the four wells that were sampled at the site, designated BP-2, BP-3, BP-4 and BP-8 are shown in Figure 2. Monitoring wells BP-1, BP-5, BP-6, and BP-7 were recently abandoned in accordance with the conditions stated in the RWQCB review letter dated 20 June 1996 (RWQCB, 1996). The well abandonment procedures were documented in a letter to the RWQCB dated 6 December 1996 (ATC Environmental Inc., 1996). Fourteen rounds of groundwater monitoring samples have been collected from monitoring wells BP-2 and BP-3 since their installation in March 1989; 12 rounds of groundwater monitoring samples have been collected from monitoring well BP-4 since its installation in December 1990; and 6 rounds of groundwater monitoring samples have been collected from monitoring well BP-8 since its installation in July 1993.

OBJECTIVE

The objective of the work summarized in this report was to monitor the spatial and temporal changes in the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

17321 Irvine Blvd. • Tustin, CA 92780 • (714) 734-0303 • FAX (714) 734-0510

SCOPE

The scope of work used to meet the objective included the following tasks:

- Measurement of groundwater levels in each of the on-site monitoring wells;
- Purging and groundwater sampling of the four monitoring wells;
- Laboratory analyses of the groundwater samples; and
- Data evaluation and report preparation.

GROUNDWATER MONITORING

Groundwater Sample Collection

The groundwater monitoring conducted at the site included the collection of groundwater elevation measurements and groundwater samples from the four existing wells (BP-2, BP-3, BP-4 & BP-8). The groundwater monitoring activities were conducted under the supervision of a California-registered geologist (RG) and the field procedures are presented in Appendix A. Groundwater levels in each of the four wells were measured prior to well purging. Water was pumped from each of the wells until measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and up to three well volumes of water were extracted. Approximately 150 gallons of water were purged from the monitoring wells. The volume of water purged, pH, temperature, and electrical conductivity for each well were recorded on groundwater collection logs (presented in Appendix B). The submersible pump was set approximately 5 to 10 feet below the top of the screened interval in each monitoring well and the wells were purged at the approximate recharge rate in order to minimize the cascading of water into the wells. Groundwater was allowed to recharge to at least 80 percent of the static water level prior to sample collection.

Groundwater Gradient Assessment

Table 1 presents the results of static groundwater elevation measurements obtained by Applied Geosciences Inc. (now ATC Environmental Inc.) from January 1991 to 14 November 1996. Hydrographs of the groundwater elevation levels over time (time line beginning in March 1989) are presented in Figures 3 through 6. The groundwater gradient is interpreted to be approximately 0.001 ft/ft to the west/southwest (Figure 2).

Laboratory Analyses of November 1996 Groundwater Samples

Groundwater samples were analyzed by Del Mar Analytical of Irvine, California. Groundwater samples collected from the monitoring wells were analyzed for VOCs in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8021. As part of the quality assurance/quality control (QA/QC) program, one duplicate groundwater sample (BP-A) collected

from well BP-4 was analyzed for VOCs.

The results of the analyses reported that three VOCs were detected in groundwater samples collected from the site; tetrachloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethene (1,1-DCE). PCE, TCE, and 1,1-DCE were reported in the samples collected from each of the four monitoring wells (BP-2, BP-3, BP-4, and BP-8) at concentrations ranging from 4 to 13, 5.1 to 44, and 1.1 to 3.9 micrograms per liter (μg/L), respectively. No VOCs were reported in the laboratory method blank samples at concentrations exceeding the laboratory detection limits. A summary of the laboratory analytical results is presented in Table 2 and the laboratory reports are presented in Appendix D. Graphs of the PCE and TCE concentrations in the groundwater samples over time (time line beginning in March 1989) are presented in Figures 7 through 10.

DISCUSSION

The groundwater gradient is interpreted to be relatively flat (0.001 ft/ft) with a general flow direction to the west/southwest. The interpreted gradient is generally consistent with previous rounds of monitoring conducted at the site. The graphs showing the groundwater elevations versus time (Figures 3 through 6) illustrate a declining elevation trend over the past 2.5 years after a 3 year upward trend.

The primary compounds consistently detected in the groundwater samples collected during this and previous rounds of monitoring were the chlorinated hydrocarbons PCE, TCE, and 1,1-DCE, which were reported at concentrations up to 13, 44, and 3.9 μg/L, respectively. Aromatic hydrocarbons, previously observed sporadically in wells BP-3 and BP-4 during the time period from 1991 to 1993, have not been detected at concentrations exceeding the laboratory detection limits during the last six sampling rounds.

Graphs showing VOC concentrations versus time (Figures 7 through 10) were prepared to illustrate the variations in PCE and TCE concentrations over the course of the monitoring program. The graphs were prepared using a logarithmic scale because concentration differences are generally significant when considered in orders of magnitude. Examination of the graphs illustrate that the concentrations of PCE and TCE, while observed to go through minor fluctuations, have been generally consistent over the past six years of groundwater monitoring. The observed concentration variations would be considered "normal", especially given the large variations in groundwater elevations (>30 feet) observed over the course of the monitoring period (Figures 3 through 6). A slight decrease in concentrations was observed in monitoring wells BP-2, BP-3, and BP-4, compared with the previous round of sampling conducted in February 1995. A more significant decrease was observed in the TCE concentration in monitoring well BP-8, which dropped nearly a full order of magnitude from 64 to 8.3 μg/L, compared with the previous round of sampling conducted in February 1995. The distribution of chlorinated hydrocarbons observed during this and the previous three sampling rounds is relatively consistent from well to well, and there does not appear to be a significant difference between the upgradient wells (BP-2,

BP-3, and BP-4) and the downgradient well (BP-8).

In summary, the concentrations and distribution of chlorinated hydrocarbons detected in samples collected from the monitoring wells are consistent with the background concentrations in the region and do not support the theory that the site operations have impacted the underlying aquifer.

If there are any questions regarding this letter report, please feel free to contact either of us at your convenience.

Sincerely,
ATC ENVIRONMENTAL INC.

REGISTERED GEOLOGIST
JON R. LOVEGREEN
CERTIFIED
ENGINEERING
GEOLOGIST
NO. EG1164
STATE OF CALIFORNIA

WILLIAM J. WEAVER
Project Manager/Geologist
(714) 505-7443

JON R. LOVEGREEN
Certified Engineering Geologist
No. EG 1164 (714) 505-7053

Enclosures:

Table 1: Groundwater Elevation Measurements
Table 2: Laboratory Analytical Results of Groundwater Samples

Figure 1: Site Vicinity Map
Figure 2: Groundwater Gradient and Chemical Analytical Results, November 1996
Figure 3: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-2
Figure 4: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-3
Figure 5: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-4
Figure 6: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-8
Figure 7: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-2
Figure 8: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-3
Figure 9: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-4
Figure 10: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-5

Appendix A: Field Procedures
Appendix B: Groundwater Collection Logs
Appendix C: Laboratory Analytical Reports

cc: Mr. Richard F. Holland, American Electronics, Inc.
Dave Peterson, Esq., Hill Wynne Troop & Meisinger
Mr. Mark Cousineau, Hazard Management Consulting, Inc.

REFERENCES

ATC Environmental Inc., 1996, Monitoring well abandonment letter for the American Electronics Inc. facility, Fullerton, California, prepared on behalf of American Electronics, Inc. for submittal to the RWQCB, dated 6 December 1996.

California Regional Water Quality Control Board (RWQCB), 1996, Review letter dated 20 June 1996.

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS

Well Number	BP-1 [178.14]		BP-2 [183.13]		BP-3 [180.61]		BP-4 [179.89]		BP-5 [177.69]		BP-6 [177.31]		BP-7 [176.96]		BP-8 [177.51]	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
01-10-91	136.68	41.46	141.81	41.32	139.34	41.27	138.50	41.39	136.80	40.89						
01-17-91	136.74	41.40	141.90	41.23	139.34	41.27	138.49	41.40	136.80	40.89						
01-30-91	137.13	41.01	142.30	40.83	139.79	40.82	138.95	40.94	137.31	40.38						
06-21-91			143.19	39.94	140.66	39.95	139.76	40.13	138.09	39.60	137.50	39.81				
07-15-91	138.39	39.75	143.55	39.58	141.05	39.56	140.15	39.74	138.50	39.19	137.93	39.38				
12-19-91	138.05	40.09	143.05	40.08	140.40	40.21	139.34	40.55	137.75	39.94	137.35	39.96				
05-14-92	131.71	46.43	136.50	46.63	134.13	46.48	132.77	47.12	131.34	46.35	130.90	46.41				
08-25-92	131.85	46.29	136.36	46.77	134.18	46.43	133.04	46.85	131.56	46.13	131.09	46.22				
05-10-93	128.15	49.99	132.87	50.26	130.51	50.10	129.05	50.84	127.71	49.98	127.32	49.99				
08-09-93	120.45	57.69	124.93	58.20	122.89	57.72	120.92	58.97	119.92	57.77	119.62	57.69	119.51	57.45	120.13	57.38
02-14-94	116.25	61.89	120.76	62.37	119.75	60.86	117.37	62.52	115.82	61.87	115.45	61.86	115.21	61.75	115.80	61.71
08-23-94	103.80	74.34	108.19	74.94	106.28	74.33	104.56	75.33	103.31	74.38	103.00	74.31	102.82	74.14	103.44	74.07
02-15-95	106.37	71.77	110.80	72.33	108.70	71.91	107.62	72.27	105.94	71.75	105.58	71.73	105.32	71.64	105.89	71.62
11-14-96			117.36	65.77	115.10	65.51	114.24	65.65	---	---	---	---	---	---	112.42	65.09

NOTES:

1) Surveyed top of well casing elevations (shown in brackets below well number) are given in feet relative to mean sea level.
2) Depth = depth-to-groundwater measured in feet below the top of the well casing.
3) Elev. = elevation of groundwater in feet relative to mean sea level.
4) Blank spaces denote that the well was not measured or not yet in existence during the indicated measuring round.
5) "---" indicates that the well was abandoned and is no longer in existence.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
BP-1	04-05-89	<10	290	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	1,500	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	07-02-90	<25	230	<25	<25	<25	<25	NR	<25	<25	89	<25	NA	NR	NR	NA	NA	NA	NA
	08-08-90	<2	520	<2	<2	<2	<2	NR	<2	<5	<2	<2	<0.5	NR	NR	<1	<1	<1	NA
	08-25-92	67	740	<10	<10	<10	14	NR	<10	<10	<10	<10	<10	NR	NR	<10	<10	<20	22
	05-10-93	9	51	<1	<1	<1	<1	1	3	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	7	22	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	6	76	<1	<1	<1	<1	1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	2.8	81	<0.5	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-24-94	3	80	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	5.1	72	<0.5	<0.5	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-2	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	110	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	6	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	50	36	1	<0.3	<0.4	<0.4	NR	<0.6	<0.6	<0.3	<0.8	<0.2	NR	NR	<0.7	<0.2	<0.8	82
	01-30-91	54	40	2.6	<0.3	<0.4	<0.4	NR	6.8	*21*	0.4	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	15
	07-16-91	68	43	1.1	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.4	NR	NR	0.4	<0.2	0.3	70
	12-23-91	29	19	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.4*	<0.3	<0.2	<0.2	NR	NR	0.6	<0.3	0.6	15
	05-15-92	19	21	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	05-10-93	61	35	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-10-93	32	25	1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	15	47	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	13	15	<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	14	33	1.4	<0.5	<0.5	<0.5	<0.5	6.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	10	24	<0.5	<0.5	<0.5	<0.5	<0.5	3.9	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-3	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	40	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	30	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	7.7	6.5	0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	0.7	3.1	32
	01-30-91	75	41	2	<0.3	<0.4	<0.4	NR	6.8	*19*	0.4	1.6	<0.2	NR	NR	<0.2	<0.2	<0.2	25
	07-16-91	32	19	0.4	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.2	NR	NR	0.5	<0.2	<0.2	7.8
	12-23-91	26	31	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.6*	<0.3	<0.2	0.2	NR	NR	0.6	<0.3	0.6	7
	05-15-92	5.4	42	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	05-10-93	52	39	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-10-93	24	23	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	25	20	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	12	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-23-94	12	11	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	26	52	1.9	<0.5	<0.5	<0.5	<0.5	9.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	13	44	<1	<1	<1	<1	<1	3.5	<2	<1	<2	<1	<1	<1	<1	<1	<1	NA
BP-4	01-11-91	2	4	0.4	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	120
	01-30-91	2.1	3.9	<0.3	<0.3	<0.4	<0.4	NR	2.1	20	<0.3	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	85
	07-16-91	9	7	0.3	<0.3	<0.4	<0.4	NR	<0.6	1	<0.3	<0.3	<0.2	NR	NR	<0.2	<0.2	<0.2	17
	12-26-91	4.2	15	0.6	<0.3	<0.4	<0.4	NR	1.2	17	0.6	<0.2	0.2	NR	NR	1.4	<0.3	0.4	10
	05-15-92	15	24	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	4	7.2	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	0.9	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	30
	05-10-93	8	10	<1	<1	<1	<1	<1	2	<2	<1	<1	3	1	3	10	2	9	<0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	8	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	5.4	4.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11-14-96	5	5.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
DUP	11-14-96	4.7	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.94	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-5	01-11-91	35	68	1.3	<0.3	<0.4	<0.4	NR	<0.6	<5	0.8	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	125
	01-30-91	40	85	2.8	<0.3	<0.4	<0.4	NR	3.5	19	1.7	1.3	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	53	65	1.1	<0.3	0.5	<0.4	NR	<0.6	1.1	0.7	<0.2	0.2	NR	NR	0.3	<0.2	<0.2	7.7
	12-23-91	170	260	7.8	<0.3	3.6	3.6	NR	<0.6	11	5.4	<0.2	0.6	NR	NR	1.2	<0.3	0.6	18
	05-15-92	22	190	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	11	34	0.7	<0.5	<0.5	<0.5	NR	1.6	<0.5	1.2	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	88
	05-10-93	8	23	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
DUP	05-10-93	8	24	1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	12	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	02-15-94	7	10	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	08-24-94	5.4	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.9	8.6	<0.5	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	6.8	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-6	06-28-91	7.5	71	<0.3	<0.3	<0.4	0.5	NR	<0.6	0.6	0.3	<0.2	1.2	NR	NR	0.2	0.9	1	86
	07-18-91	6	48	<0.3	<0.3	<0.4	0.4	NR	<0.6	1	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	23
	05-15-92	3	300	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	40	86	1	<0.5	<0.5	<0.5	NR	0.6	<0.5	1	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	53
	05-10-93	12	54	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-09-93	7	9	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.2
	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.9
DUP	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-23-94	6	15	<0.5	<0.5	<0.5	<0.5	<0.5	3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	19	<0.5	<0.5	<0.5	<0.5	<0.5	4.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	7	21	<0.5	<0.5	<0.5	<0.5	<0.5	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-7	07-16-93	3	~~12~~	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	85
	08-10-93	6	7	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-14-94	10	8	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.9
	08-24-94	6.1	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.5	16	<0.5	<0.5	<0.5	<0.5	<0.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-8	07-16-93	9	~~160~~	<1	<1	<1	<1	6	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	200
	08-10-93	7	15	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.8
	02-14-94	7	39	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	4.2	51	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	5.2	64	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	4	8.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
Trip Blnk.	01-11-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.8	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	01-30-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	0.6	21	<0.3	1.6	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	14	<0.3	<0.2	0.2	NR	NR	<0.2	<0.3	<0.4	NA
	08-25-92	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	NA

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	07-16-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-09-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
Lab Blnk.	01-30-91	<0.3	<0.3	<0.3	**0.3**	<0.4	<0.4	NR	<0.6	**5.6**	<0.3	**1.6**	<0.2	NR	NR	**0.5**	<0.2	**0.6**	NA
	06-28-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**0.8**	<0.3	<0.2	**0.5**	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	NR	<0.6	**1.4**	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**1.6**	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.3	<0.4	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**0.4**	<0.3	<0.2	<0.2	NR	NR	**0.5**	<0.3	<0.4	NA
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-17-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-26-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-16-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11-14-96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
MCL		5	5	200	32	5	0.5	6	6	40	N/A	30	0.7	N/A	N/A	100	680	1750	

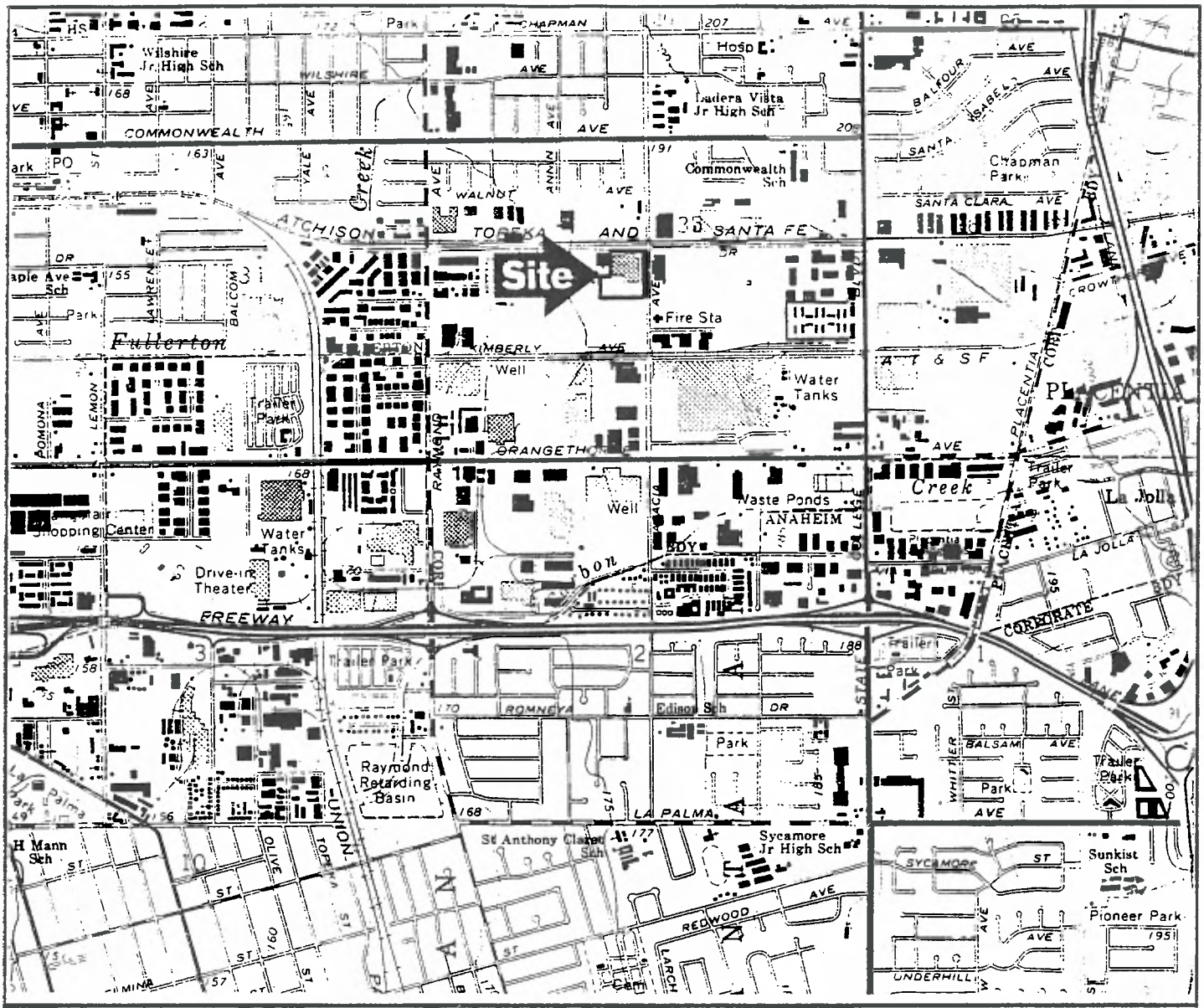
NOTES:

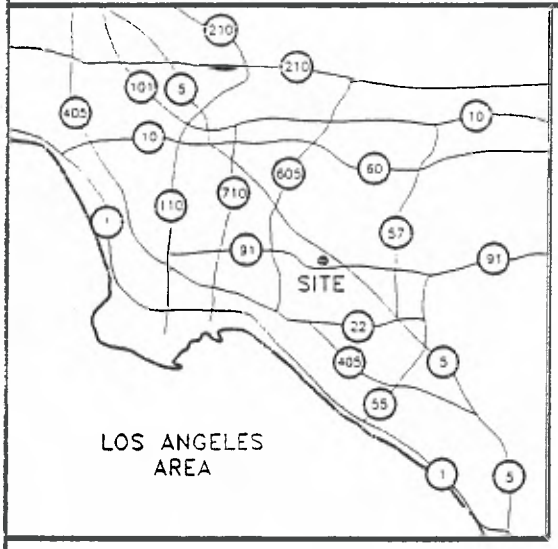
1) Samples were analyzed for volatile organic compounds (VOCs) and turbidity in general accordance with EPA Method Nos. 8021 (8010/8020) and 180.1, respectively.
2) ug/L = micrograms per liter.
3) NTU = nephelometric turbidity unit.
4) PCE = tetrachloroethene.
5) TCE = trichloroethene.
6) TCA = trichloroethane.
7) DCA = dichloroethane.
8) DCE = dichloroethene.
9) Meth. Chloride = methylene chloride.
10) TMB = trimethylbenzene.
11) TBB = tert-butylbenzene.
12) Turb. = turbidity.
13) The less than symbol (<) denores that the compound was not detected at a concentration greater than the indicated laboratory detection limit.
14) Concentrations reported in italics indicate that the compound was also detected in the laboratory method blank for the sample batch.
15) NR = not reported.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLES COLLECTED TO DATE

NOTES (continued):

16) NA = not analyzed for.
17) DUP = duplicate sample.
18) Trip Blnk. = deionized water trip blank sample.
19) Lab Blnk. = laboratory internal quality assurance/quality control blank sample analysis.
20) MCL = State maximum contaminant level for drinking water. State action levels were used for methylene chloride and toluene as MCLs were not available for these compounds.
21) N/A = MCL or action level not available for this compound.





NORTH

0 ½ 1

SCALE, MILES

ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

NOTE

BASE MAP IS TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA–ORANGE CO., 7.5–MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

SITE VICINITY MAP

PROJECT NUMBER 14240.0001 | FIGURE 1

VALENCIA DRIVE

APPROXIMATE LIMIT OF SITE

BP-3
65.51
[13/44]

BP-2
65.77
[10/24]

BUILDING
NTS TECHNICAL SERVICES

BUILDING
AMERICAN ELECTRONICS, INC.

65.1

65.2

65.3

65.4

65.5

65.6

65.7

ASPHALT PARKING LOT

ACACIA STREET

METAL SHED

STORAGE SHED

TRANSFORMER

GRADIENT = 0.001 FT/FT

PROPANE TANK

CONCRETE SLAB

METAL SHED

BP-8
65.09
[4/8.3]

[BP-1]

ASPHALT PARKING LOT

CHEMICAL STORAGE AREA

FENCE

[BP-7]

[BP-5]

BP-4
65.65
[5/5.1]

[BP-6]

FORMER CHEMICAL STORAGE AREA

APPROXIMATE LIMIT OF SITE

EXPLANATION

BP-4 — MONITORING WELL LOCATION AND DESIGNATION.

65.65 — GROUNDWATER ELEVATION GIVEN IN FEET RELATIVE TO MEAN SEA LEVEL (MSL).

[5/5.1] — TETRACHLOROETHENE (PCE) AND TRICHLOROETHENE (TCE) CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).

[BP-1] — ABANDONED MONITORING WELL LOCATION (22 NOVEMBER 1996)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN – PLUMBING," BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960

NORTH

0 80 160

SCALE, FEET

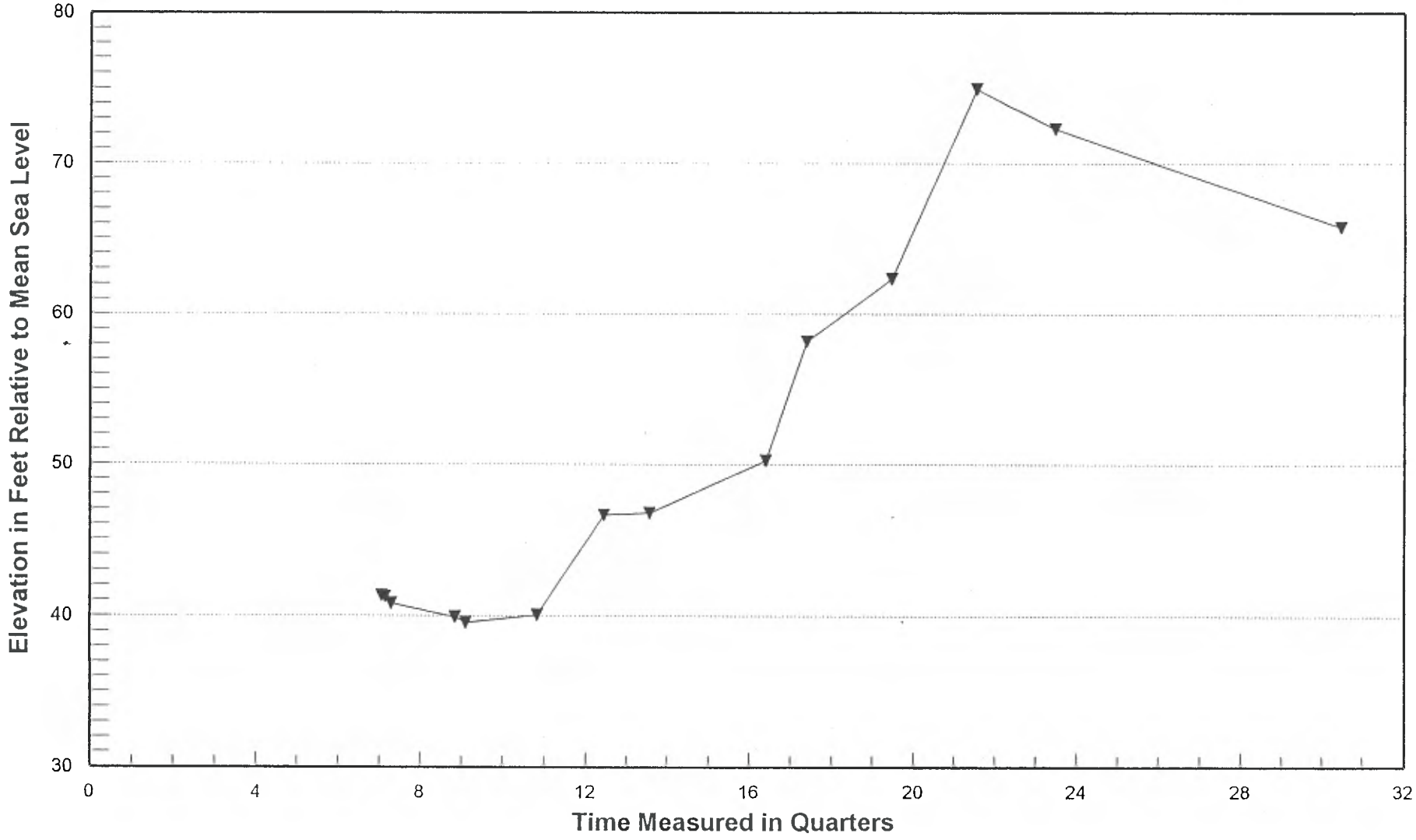
ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

GROUNDWATER GRADIENT AND CHEMICAL ANALYTICAL RESULTS NOVEMBER 1996 SAMPLING ROUND

PROJECT NUMBER 14240.0001 | FIGURE 2

Groundwater Elevation -vs- Time

Monitoring Well BP-2

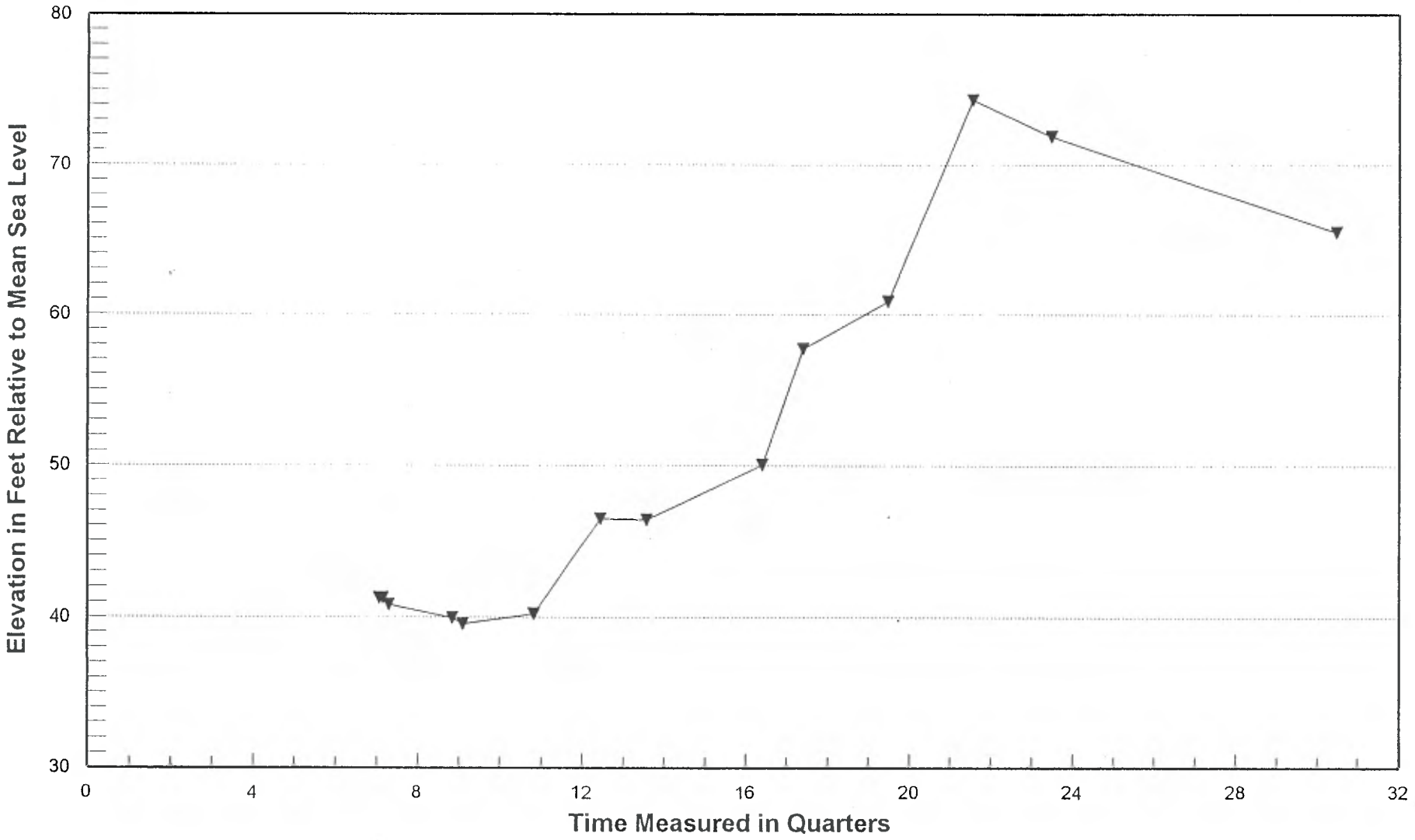


ATC Environmental Inc. AEI - November 1996

Project Number: 14240.0001 Figure: 3

Groundwater Elevation -vs- Time

Monitoring Well BP-3

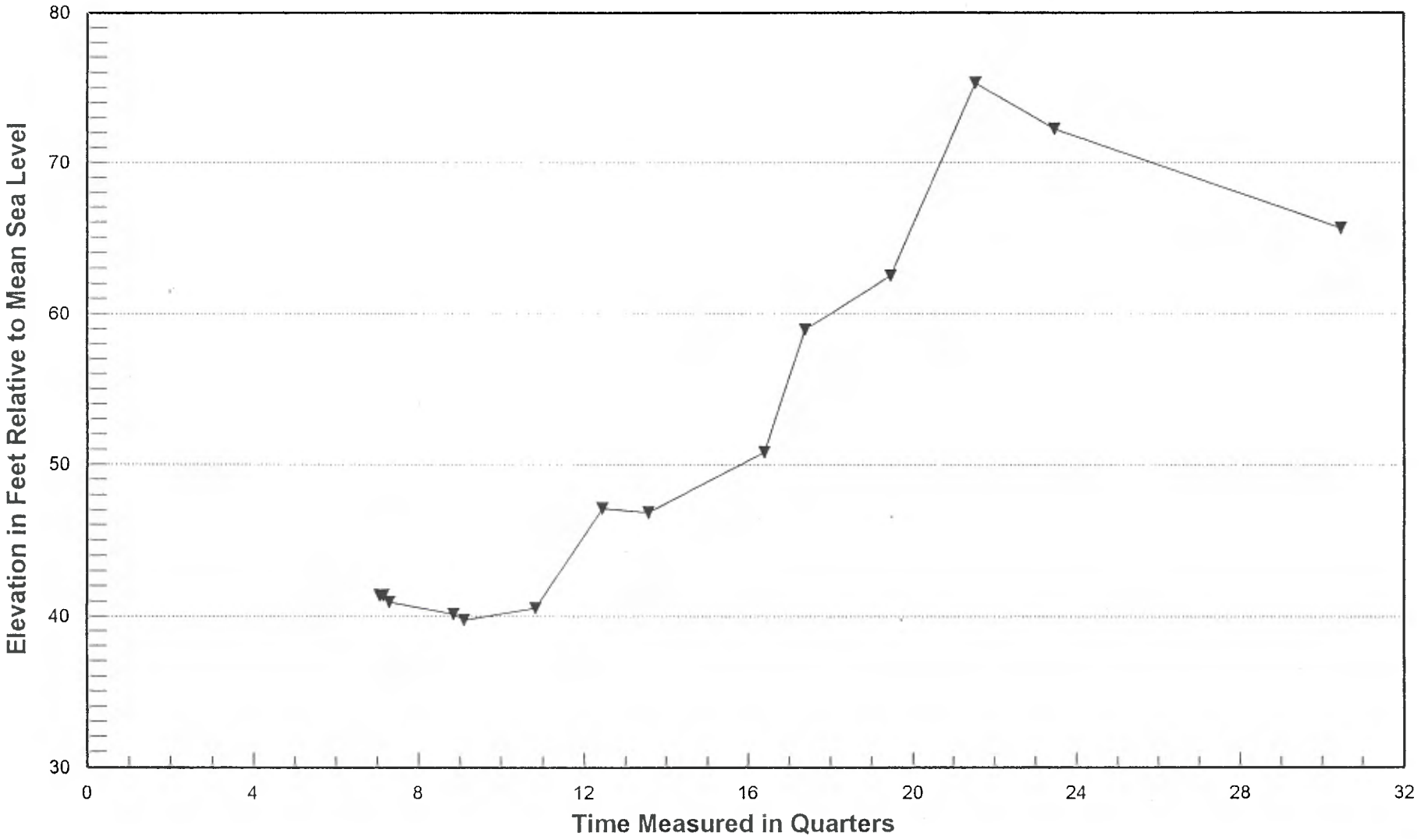


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 4

Groundwater Elevation -vs- Time

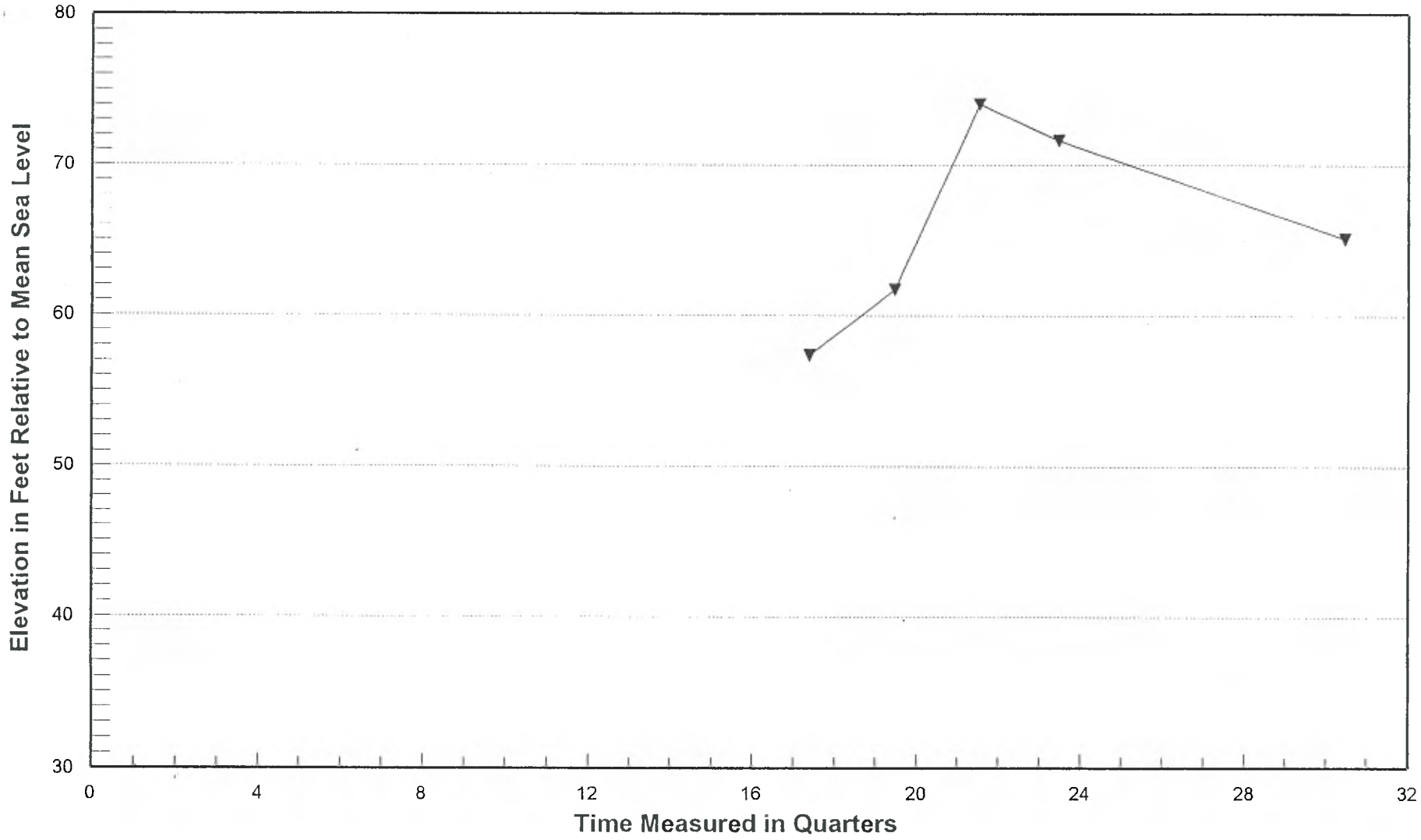
Monitoring Well BP-4



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 5

Groundwater Elevation -vs- Time

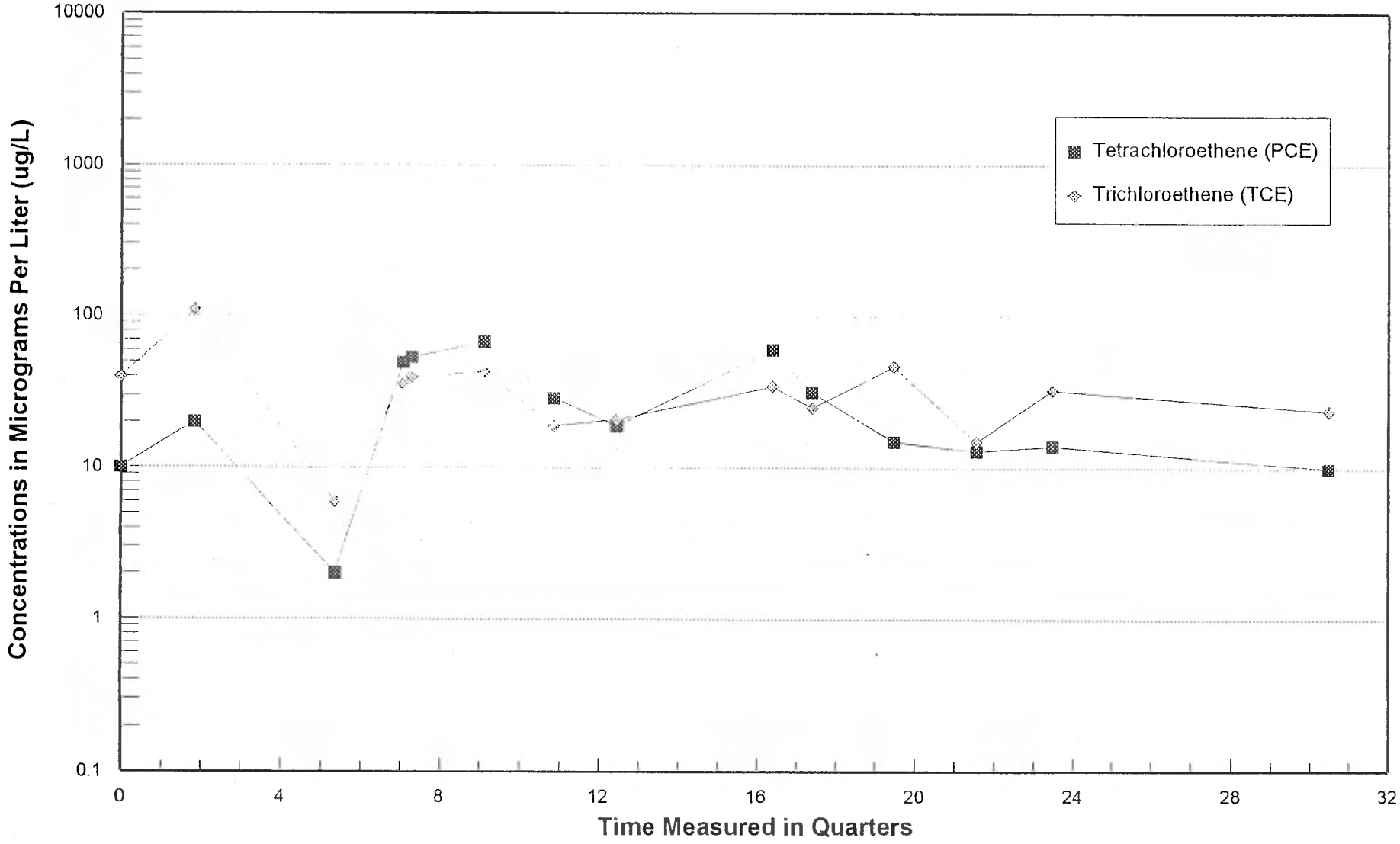
Monitoring Well BP-8



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 6

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-2

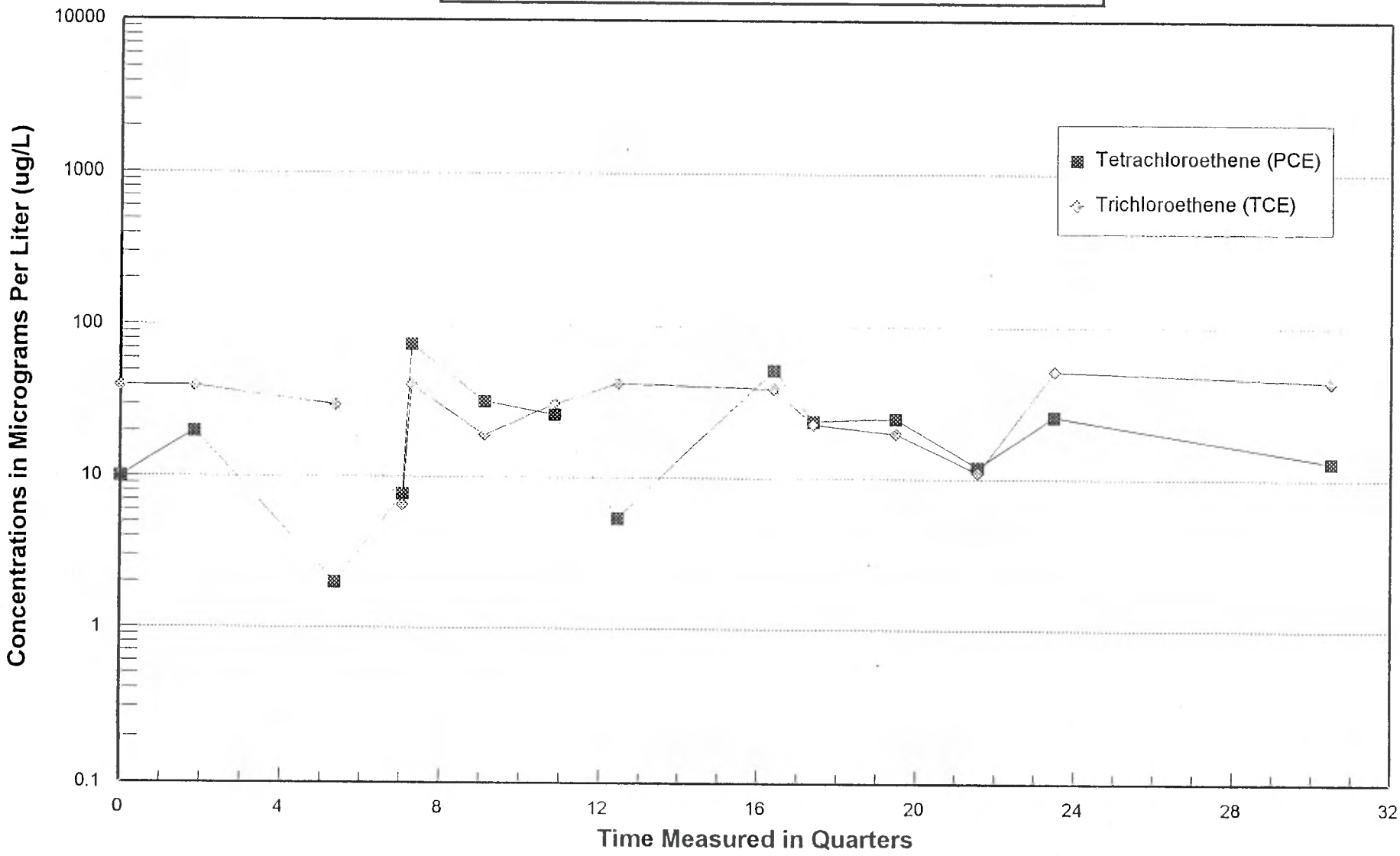


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 7

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-3

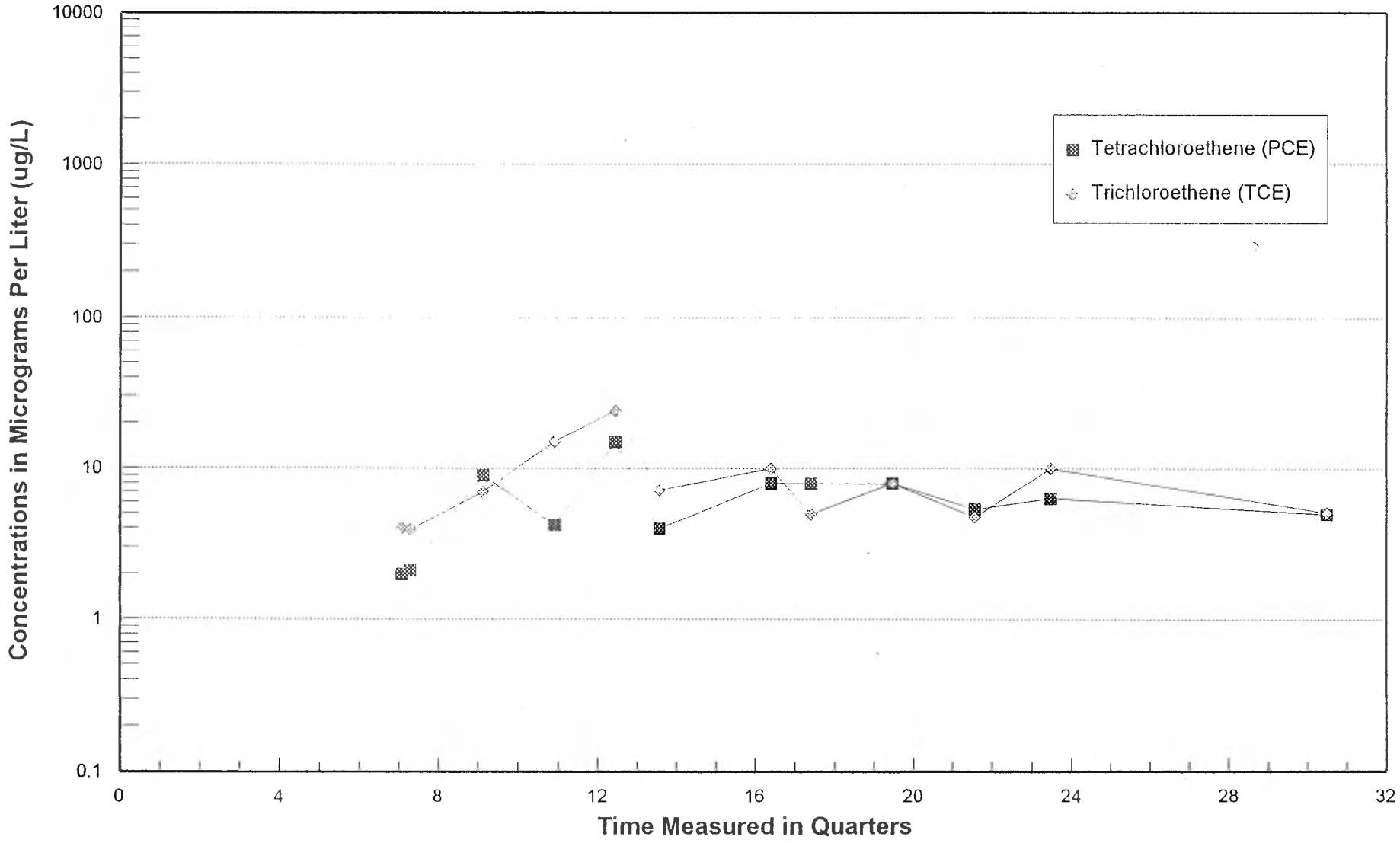


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 8

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-4

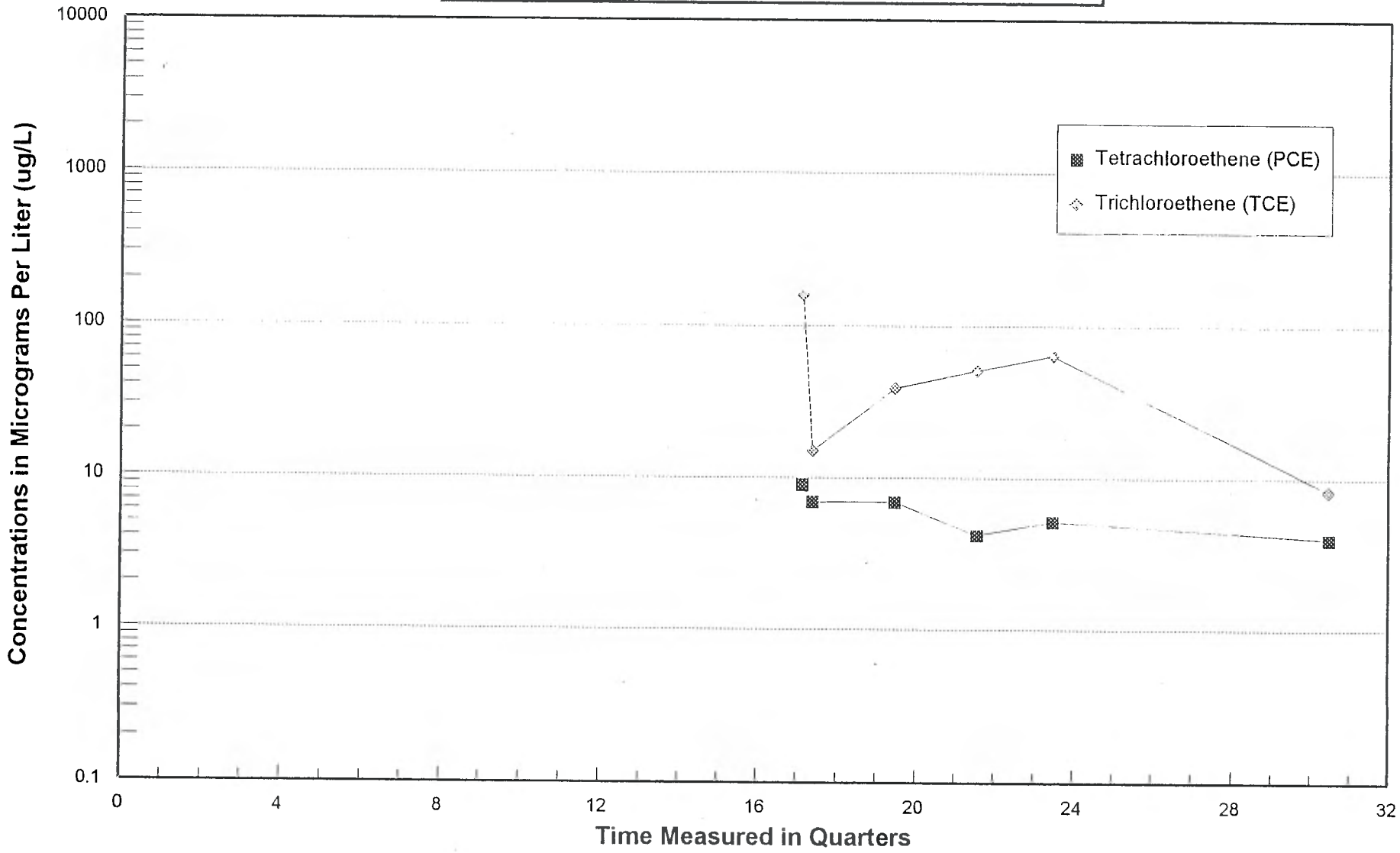


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 9

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-8



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 10

APPENDIX A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

A.1 Groundwater Sample Collection

1. Prior to sampling, the water level in each well was measured to the nearest 0.01 foot using a conductance probe. Prior to each use, the probe was rinsed in a solution of TSP, followed by two tapwater rinses and deionized-water rinse.

2. Prior to sampling, the wells were purged of standing water with a submersible pump. During purging, measurements of pH, temperature, electrical conductivity, and turbidity were collected for the purged water. Samples were collected from the wells when the measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and up to three casing volumes of water were purged from the wells (where possible).

3. The water purged from the wells was placed in Department of Transportation (DOT)-approved 55-gallon drums.

4. The samples were collected using a Grundfos submersible sampling pump, at a flow rate of approximately 100 milliliters per minute. The pump was washed in a laboratory detergent solution and triple-rinsed with deionized water prior to being used and between each well.

A.2 Groundwater Sample Handling

1. The samples collected for chemical analysis were placed in Ziploc bags and stored in an ice chest cooled using ice to a temperature of approximately 40 degrees Fahrenheit.

2. The samples collected for chemical analysis were delivered to the laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory were documented using chain-of-custody procedures.

APPENDIX B

GROUNDWATER COLLECTION LOGS

Groundwater Collection Log

Well Number: BP-2
Sample Number BP-2
Date of Collection: 15-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 115.10
Top of Casing Elevation: 180.61
Groundwater Elevation: 65.51

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
09:48	0	7.20	1.15	18.4	---	Clear, no odor.
09:52	10	6.96	1.41	20.1	---	" "
09:56	20	6.96	1.43	20.4	---	" "
09:59	30	6.97	1.45	20.5	---	" "
10:03	40	6.97	1.45	20.5	---	" "
10:07	50	6.98	1.46	20.5	---	" "
10:11	60	6.98	1.46	20.5	---	" "
10:15	70	6.99	1.47	20.5	---	" "
10:19	80	6.99	1.47	20.5	---	" "
10:23	90	6.99	1.47	20.5	---	" "
10:27	100	6.99	1.47	20.5	---	" "
10:31	110	6.99	1.48	20.5	---	" "
10:35	120	7.01	1.48	20.5	---	" "
10:38	130	7.01	1.48	20.5	---	" "
10:42	140	7.01	1.48	20.5	---	" "
10:46	150	7.01	1.48	20.5	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-3
Sample Number BP-3
Date of Collection: 14-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 115.10
Top of Casing Elevation: 180.61
Groundwater Elevation: 65.51

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
02:08	0	7.20	1.27	19.3	---	Clear, no odor.
02:13	10	7.03	1.47	20.1	---	" "
02:17	20	7.05	1.45	20.3	---	" "
02:21	30	7.01	1.46	20.4	---	" "
02:26	40	7.01	1.48	20.3	---	" "
02:30	50	7.09	1.47	20.3	---	" "
02:35	60	7.06	1.47	20.2	---	" "
02:39	70	7.05	1.47	20.2	---	" "
02:44	80	7.06	1.46	20.3	---	" "
02:48	90	7.07	1.45	20.1	---	" "
02:51	100	7.05	1.45	20.3	---	" "
02:56	110	7.06	1.44	20.3	---	" "
03:01	120	7.04	1.44	20.3	---	" "
03:05	130	7.06	1.44	20.2	---	" "
03:09	140	7.09	1.44	20.2	---	" "
03:13	150	7.11	1.43	20.1	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-4
Sample Number: BP-4 & BP-A
Date of Collection: 15-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 114.24
Top of Casing Elevation: 179.89
Groundwater Elevation: 65.65

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
07:52	0	6.15	1.22	17.2	---	Clear, no odor.
07:57	10	6.59	1.22	19.6	---	" "
08:00	20	6.76	1.20	19.9	---	" "
08:04	30	6.87	1.19	19.9	---	" "
08:07	40	6.90	1.19	20.0	---	" "
08:12	50	6.93	1.19	19.9	---	" "
08:16	60	6.96	1.18	19.8	---	" "
08:20	70	6.96	1.18	19.8	---	" "
08:24	80	6.97	1.17	19.9	---	" "
08:28	90	6.99	1.17	20.0	---	" "
08:31	100	7.02	1.19	20.0	---	" "
08:35	110	7.02	1.17	20.0	---	" "
08:39	120	7.04	1.17	20.0	---	" "
08:43	130	7.07	1.17	19.7	---	" "
08:47	140	7.06	1.17	19.9	---	" "
08:50	150	7.14	1.18	19.6	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-8
Sample Number BP-8
Date of Collection: 14-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 111.77
Top of Casing Elevation: 177.51
Groundwater Elevation: 65.74

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
10:50	0	5.95	1.21	19.3	---	Clear, no odor.
10:55	10	6.70	1.18	20.0	---	" "
10:59	20	6.89	1.17	20.2	---	" "
11:03	30	6.94	1.17	20.2	---	" "
11:09	40	7.00	1.18	20.2	---	" "
11:12	50	7.03	1.24	20.3	---	" "
11:16	60	7.04	1.18	20.3	---	" "
11:20	70	7.06	1.18	20.1	---	" "
11:24	80	7.09	1.18	20.2	---	" "
11:29	90	7.11	1.18	20.2	---	" "
11:32	100	7.07	1.18	20.3	---	" "
11:36	110	7.12	1.18	20.2	---	" "
11:40	120	7.13	1.18	20.2	---	" "
11:44	130	7.14	1.19	20.2	---	" "
11:48	140	7.15	1.19	20.1	---	" "
11:53	150	7.23	1.19	20.1	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
1014 E. Cooley Dr., Suite A, Colton CA 92324 (909) 370-4667 FAX (909) 370-1046
16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-3
Lab Number: FK02815

RECEIVED

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	1.0	N.D.	trans-1,3-Dichloropropene	1.0	N.D.
Bromobenzene	1.0	N.D.	Ethylbenzene	1.0	N.D.
Bromochloromethane	1.0	N.D.	Hexachlorobutadiene	1.0	N.D.
Bromodichloromethane	1.0	N.D.	Isopropylbenzene	1.0	N.D.
Bromoform	1.0	N.D.	p-Isopropyltoluene	1.0	N.D.
Bromomethane	2.0	N.D.	Methylene chloride	2.0	N.D.
n-Butylbenzene	1.0	N.D.	Naphthalene	1.0	N.D.
sec-Butylbenzene	1.0	N.D.	n-Propylbenzene	1.0	N.D.
tert-Butylbenzene	1.0	N.D.	Styrene	1.0	N.D.
Carbon tetrachloride	1.0	N.D.	1,1,1,2-Tetrachloroethane	1.0	N.D.
Chlorobenzene	2.0	N.D.	1,1,2,2-Tetrachloroethane	1.0	N.D.
Chloroethane	5.0	N.D.	**Tetrachloroethene**	**1.0**	**13**
2-Chloroethylvinyl Ether	5.0	N.D.	Toluene	1.0	N.D.
Chloroform	1.0	N.D.	1,2,3-Trichlorobenzene	1.0	N.D.
Chloromethane	2.0	N.D.	1,2,4-Trichlorobenzene	1.0	N.D.
2-Chlorotoluene	1.0	N.D.	1,1,1-Trichloroethane	1.0	N.D.
4-Chlorotoluene	1.0	N.D.	1,1,2-Trichloroethane	1.0	N.D.
Dibromochloromethane	1.0	N.D.	**Trichloroethene**	**1.0**	**44**
1,2-Dibromo-3-chloropropane	1.0	N.D.	Trichlorofluoromethane	1.0	N.D.
1,2-Dibromoethane	1.0	N.D.	1,2,3-Trichloropropane	1.0	N.D.
Dibromomethane	1.0	N.D.	1,2,4-Trimethylbenzene	1.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.	1,3,5-Trimethylbenzene	1.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.	Vinyl chloride	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.	o-Xylene	1.0	N.D.
Dichlorodifluoromethane	1.0	N.D.	m,p-Xylenes	2.0	N.D.
1,1-Dichloroethane	1.0	N.D.			
1,2-Dichloroethane	1.0	N.D.			
1,1-Dichloroethene	**1.0**	**3.5**			
cis-1,2-Dichloroethene	1.0	N.D.			
trans-1,2-Dichloroethene	1.0	N.D.			
1,2-Dichloropropane	1.0	N.D.			
1,3-Dichloropropane	1.0	N.D.			
2,2-Dichloropropane	1.0	N.D.			
1,1-Dichloropropene	1.0	N.D.			
cis-1,3-Dichloropropene	1.0	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection. Due to matrix effects and/or other factors, the sample required dilution. Detection limits for this sample have been raised by a factor of 2.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	98%
a,a,a-Trifluorotoluene	98%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-8
Lab Number: FK02816

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**4.0**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**8.3**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**1.1**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Method Blank

Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996
Matrix: Water

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	N.D.			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	101%
a,a,a-Trifluorotoluene	100%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-133

MS/MSD DATA REPORT

EPA METHOD: 8021
Matrix: Water

Date: 11/25/96

Sample #: BLANK

Batch #: FK25111W

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	10	9.9	9.9	99%	99%	0.57%	99%
Chloroform	0	10	9.7	8.7	97%	87%	12%	92%
1,1-Dichloroethane	0	10	9.0	9.1	90%	91%	1.2%	91%
1,2-Dichloroethane	0	10	9.6	9.7	96%	97%	1.4%	97%
1,1-Dichloroethene	0	10	8.7	8.9	87%	89%	1.7%	88%
Tetrachloroethene	0	10	9.3	9.2	93%	92%	0.92%	92%
Toluene	0	10	10	10	101%	101%	0.058%	101%
Trichloroethene	0	10	9.2	9.4	92%	94%	1.6%	93%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

TC L...ROI...NTA... ...C.

Chain of Custody

ATC ENVIRONMENTAL INC.

17321 Irvine Blvd.
Tustin, CA 92780
(714) 734-0303 • Fax (714) 734-0510

Project Name: American Electronics
Project Number: 14240.0001
Project Manager: Will Weaver

Laboratory Name:

Method of Shipment: HAND DEL

Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270					
BP-3			11/14		X		X	X						X						
BP-8			11/14		X		X	X						X						

Remarks:
- Please FAX results to Will Weaver at 714-734-0510

INTACT / COOL

Turnaround Time:
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

	Date	Time		Date	Time
Relinquished by sampler: Paul Roberts	11/15/96	8:25	Received by:	11/15	8:25
Relinquished by:	11/15	9:52	Received by:		
Relinquished by:	Date	Time	Received by laboratory:	11/15	9:52

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-2
Lab Number: FK02812

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**10**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**24**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**3.9**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D			
1,3-Dichloropropane	0.50	N.D			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	100%
a,a,a-Trifluorotoluene	101%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-4
Lab Number: FK02813

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**5.0**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**5.1**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**1.1**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	97%
a,a,a-Trifluorotoluene	99%

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Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-A
Lab Number: FK02814

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.
Bromobenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
n-Butylbenzene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
2-Chlorotoluene	0.50	N.D.
4-Chlorotoluene	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.
Dibromomethane	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
Dichlorodifluoromethane	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	**0.50**	**0.94**
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D
1,3-Dichloropropane	0.50	N.D.
2,2-Dichloropropane	0.50	N.D.
1,1-Dichloropropene	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Ethylbenzene	0.50	N.D.
Hexachlorobutadiene	0.50	N.D.
Isopropylbenzene	0.50	N.D.
p-Isopropyltoluene	0.50	N.D.
Methylene chloride	1.0	N.D.
Naphthalene	0.50	N.D.
n-Propylbenzene	0.50	N.D.
Styrene	0.50	N.D.
1,1,1,2-Tetrachloroethane	0.50	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	**0.50**	**4.7**
Toluene	0.50	N.D.
1,2,3-Trichlorobenzene	0.50	N.D.
1,2,4-Trichlorobenzene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	**0.50**	**4.7**
Trichlorofluoromethane	0.50	N.D.
1,2,3-Trichloropropane	0.50	N.D.
1,2,4-Trimethylbenzene	0.50	N.D.
1,3,5-Trimethylbenzene	0.50	N.D.
Vinyl chloride	0.50	N.D.
o-Xylene	0.50	N.D.
m,p-Xylenes	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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Del Mar Analytical

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Method Blank

Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996
Matrix: Water

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	N.D.			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	101%
a,a,a-Trifluorotoluene	100%

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Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-13..

MS/MSD DATA REPORT

EPA METHOD: 8021
Matrix: Water

Date: 11/25/96

Sample #: BLANK

Batch #: FK25111W

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	10	9.9	9.9	99%	99%	0.57%	99%
Chloroform	0	10	9.7	8.7	97%	87%	12%	92%
1,1-Dichloroethane	0	10	9.0	9.1	90%	91%	1.2%	91%
1,2-Dichloroethane	0	10	9.6	9.7	96%	97%	1.4%	97%
1,1-Dichloroethene	0	10	8.7	8.9	87%	89%	1.7%	88%
Tetrachloroethene	0	10	9.3	9.2	93%	92%	0.92%	92%
Toluene	0	10	10	10	101%	101%	0.058%	101%
Trichloroethene	0	10	9.2	9.4	92%	94%	1.6%	93%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS: ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD: ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference: ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

ATC ENVIRONMENTAL INC.

Chain of Custody

ATC ENVIRONMENTAL INC.
17321 Irvine Blvd.
Tustin, CA 92780
(714) 734-0303 • Fax (714) 734-0510

Project Name: American Electronics
Project Number: 14240.0001
Project Manager: Will Weaver

Laboratory Name: Del Mar Analytical
Method of Shipment: Delivery
Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270
BP-2			11-15		X		X	X						X	
BP-4			↓		↓		↓	↓						↓	
BP-A			↓		↓		↓	↓						↓	
									-2 x 40 mL VOAs				per sample		

Remarks:
- Fax results to Will Weaver at 714-734-0510

intact
cool

Turnaround Time
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

Relinquished by sampler	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory
	11-15-96	3:40	11/15/96 3:40

STATE OF CALIFORNIA
GEORGE DEUKMEJIAN, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
6809 INDIANA AVENUE, SUITE 200
RIVERSIDE, CALIFORNIA 92506
PHONE: (714) 782-4130

December 29, 1989

Mr. R. F. Holland, President
American Electronics, Inc.
1600 East Valencia Drive
Fullerton, CA 92631

SUBSURFACE INVESTIGATION AT AMERICAN ELECTRONICS, INC., FULLERTON,

Dear Mr. Holland:

This is to inform you that we never received the chemical analyses from American Electronics' monitoring well sampling that was conducted on September 20, 1989. In addition, on August 30, 1989, we sent a letter to you with our comments to your subsurface investigation report. In that letter, we requested a response to our comments by September 15, 1989, and a work plan and time schedule by September 29, 1989, for characterizing the lateral extent of ground water contamination and for defining the soil remediation program proposed by your consultant, Ray Lewis. We did receive a letter written by Mr. Lewis on September 15 which addressed most of our comments, although we have not yet received the report due September 29, 1989.

One of the items in Mr. Lewis' September 15 letter in response to our request that American Electronics install off-site wells suggested that the Regional Board "assist with the adjoining properties in the area." Obtaining permission from off-site properties for installing monitoring wells is the responsibility of American Electronics, Inc.

We still have not received a proper well log for any of the monitoring wells, nor has a discussion of how the soils were logged and who logged them been submitted. These items were requested in our August 30, 1989, letter to American Electronics, Inc. Our concern is that incorrect methodology was used in logging borehole BP-3, in purging the wells prior to taking samples, and in sample gathering and analysis.

Two sets of samples were taken from your monitoring wells, the first on April 5, 1989, and the second on September 20. As noted above, the results of sampling taken by AEI in September have not been submitted to us. Below, the ground water analyses (in ppb)

from the monitoring wells are summarized (na = not analyzed; n/d = not detected):

	4/5/89 (RWQCB)	4/5/89 (AEI)	9/20/89 (RWQCB)
BP-1			
cis-1,2-DCE	n/d	n/d	45
TCE	232	290	1000
BP-2			
1,1-DCE	1.8	n/d	1.8
PCE	0.7	n/d	0.5
TCE	23	40	23
BP-3			
1,1-DCE	na	n/d	2.5
PCE	na	n/d	8.7
TCE	na	40	33

It is evident from the data above that the TCE concentration from BP-1 (next to the sump) has increased dramatically from the value measured on April 5, 1989.

Mr. Lewis indicated in his September 15, 1989, letter to us that he would like to meet with us after the results of AEI's water sampling on September 20 were returned from the laboratory. We have not been contacted since that time. We would like to set up a meeting early in January, 1990, with you and your consultant to discuss these results and to determine what actions you propose in the future. I will contact you by January 5, 1990, to schedule the meeting. If you have any questions or comments, please contact me.

Sincerely,

Linda C. Garcia

Linda C. Garcia
WRC Engineer - Ground Water Investigation

cc: Mr. Ray E. Lewis, Ray E. Lewis Consulting Engineers, Inc.
Nira Yamichika, Orange County Water District
~~Gary Zimmerman~~, Orange County Health Care Agency

LCG:amerelec ↖ should cc: Mark Sutphin

California State Department Of Health Services
Southern California Laboratory

Analysis Request Form

SEP 27 1989 9/27

Name of Sampler: LCG

Phone No: (ATSS) 632-4430
(714)-788-4430

Sampler Employed By:
R.W.Q.C.Board No. : [] 4 [] 6 [] 7 [X] 8 [] 9

Sample Source: American Electronics

Date Collected : 9/20/89 Analysis Task No. 211-03

Sample Type : [] Drinking water : [X] Ground water [] Surface water
[] Waste water : Chlorinated : [] Yes [] No
[] Solid sample : [] Soil [] Sludge [] Sediment
[] Other

Use your own Bottle ID. No. for each bottle.

For Lab use Log Number	Bottle ID. No.	Sampling Point	Time collected	Type of Analysis required (Be Specific)
9095384	BP-1	Monitoring Well 1	Unknown	VOA
9095385	LCGMW2	Monitoring Well 2	9:25a.m.	VOA Give bottle labelled MWQD higher analysis priority; MW2 may be more aerated.
9095386	LCGMW3	Monitoring Well 3	10:40a.m.	VOA

Warning or Special Instruction on Samples : Bottle labelled BP-1 was collected by another analytical laboratory in an improper type bottle.

Seals: [] Intact [X] None [] Broken		Date	Time
Samples Relinquished by	Linda C. Garcia	9/20/89	2:45p.m.
Samples Relinquished by			
Received for Lab by	MO	9-22-89	10 AM

(For Lab use only)Total cost for Lab analyses : $720

California State Department Of Health Services
Southern California Laboratory - SWQIS Lab ID No. 5091
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 909-5384

DATE REPORTED : 9/25/89

METHOD USED : EPA [X] 524.2 [ ] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT x25
Acrolein	34210	ND	10.0
Acrylonitrile	34215		5.0
Benzene	34030		0.5
Bromobenzene	81555		0.5
Bromochloromethane	A-012		0.5
Bromodichloromethane	32101		0.5
Bromoform	32104		0.5
Bromomethane (Methyl bromide)	34413		0.5
n-Butylbenzene	A-010		0.5
sec-Butylbenzene	77350		0.5
tert-Butylbenzene	77353		0.5
Carbon tetrachloride	32102		0.5
Chlorobenzene (Monochlorobenzene)	34301		0.5
Chloroethane	34311		0.5
2-Chloroethylvinyl ether	34576		1.0
Chloroform	32106		0.5
Chloromethane (Methyl Chloride)	34418		0.5
o-Chlorotoluene (2-Chlorotoluene)	A-008		0.5
p-Chlorotoluene (4-Chlorotoluene)	A-009		0.5
Dibromochloromethane	32105		0.5
Dibromomethane	77596		0.5
1,2-Dichlorobenzene (o-DCB)	34536		0.5
1,3-Dichlorobenzene (m-DCB)	34566		0.5
1,4-Dichlorobenzene (p-DCB)	34571		0.5
Dichlorodifluoromethane (Freon 12)	34668		0.5
1,1-Dichloroethane (1,1-DCA)	34496		0.5
1,2-Dichloroethane (1,2-DCA)	34531		0.5
1,1-Dichloroethylene (1,1-DCE)	34501		0.5
cis-1,2-Dichloroethylene	77093	45	0.5
trans-1,2-Dichloroethylene	34546	ND	0.5
1,2-Dichloropropane	34541		0.5
1,3-Dichloropropane	77173		0.5

Southern California Laboratory - SWQIS Lab ID No. 5091
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 909-5384

DATE REPORTED : 9/25/89

METHOD USED : EPA [X] 524.2 [] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT x 25
2,2-Dichloropropane	77170	ND	0.5
1,1-Dichloropropylene	77168		0.5
cis- & trans-1,3-Dichloropropylene			0.5
Ethyl benzene	34371		0.5
Ethylene dibromide (EDB)	77651		0.5
Hexachlorobutadiene	34391		0.5
Isopropylbenzene (Cumene 77356)	77223		0.5
p-Isopropyltoluene (p-Cymene)	A-011		0.5
Methylene chloride (Dichloromethane)	34423		0.5
Methyl Ethyl Ketone	81595		5.0
Methyl Isobutyl Ketone	81596		5.0
Naphthalene	34696		0.5
n-Propylbenzene	77224		0.5
Styrene	77128		0.5
1,1,1,2-Tetrachloroethane	77562		0.5
1,1,2,2-Tetrachloroethane	34516		0.5
Tetrachloroethylene (PCE)	34475		0.5
Toluene	34010		0.5
1,2,3-Trichlorobenzene	77613		0.5
1,2,4-Trichlorobenzene	34551		0.5
1,1,1-Trichloroethane (1,1,1-TCA)	34506		0.5
1,1,2-Trichloroethane (1,1,2-TCA)	34511	↓	0.5
Trichloroethylene (TCE)	39180	1000	0.5
1,2,3-Trichloropropane	77443	ND	0.5
Trichlorofluoromethane (Freon 11)	34488		0.5
1,2,4-Trimethylbenzene	77222		0.5
1,3,5-Trimethylbenzene	77226		0.5
1,1,2-Trichloro-trifluoroethane (Freon 113)	81611		0.5
Vinyl chloride (VC)	39175		0.5
m,p-Xylenes			0.5
o-Xylene	77135	↓	0.5

California State Department Of Health Services
Southern California Laboratory - SWQIS Lab ID No. 5091
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 909-5385

DATE REPORTED : 9/25/89

METHOD USED : EPA [X] 524.2 [] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT
Acrolein	34210	ND	10.0
Acrylonitrile	34215		5.0
Benzene	34030		0.5
Bromobenzene	81555		0.5
Bromochloromethane	A-012		0.5
Bromodichloromethane	32101		0.5
Bromoform	32104		0.5
Bromomethane (Methyl bromide)	34413		0.5
n-Butylbenzene	A-010		0.5
sec-Butylbenzene	77350		0.5
tert-Butylbenzene	77353		0.5
Carbon tetrachloride	32102		0.5
Chlorobenzene (Monochlorobenzene)	34301		0.5
Chloroethane	34311		0.5
2-Chloroethylvinyl ether	34576		1.0
Chloroform	32106		0.5
Chloromethane (Methyl Chloride)	34418		0.5
o-Chlorotoluene (2-Chlorotoluene)	A-008		0.5
p-Chlorotoluene (4-Chlorotoluene)	A-009		0.5
Dibromochloromethane	32105		0.5
Dibromomethane	77596		0.5
1,2-Dichlorobenzene (o-DCB)	34536		0.5
1,3-Dichlorobenzene (m-DCB)	34566		0.5
1,4-Dichlorobenzene (p-DCB)	34571		0.5
Dichlorodifluoromethane (Freon 12)	34668		0.5
1,1-Dichloroethane (1,1-DCA)	34496		0.5
1,2-Dichloroethane (1,2-DCA)	34531		0.5
1,1-Dichloroethylene (1,1-DCE)	34501	1.8	0.5
cis-1,2-Dichloroethylene	77093	ND	0.5
trans-1,2-Dichloroethylene	34546		0.5
1,2-Dichloropropane	34541		0.5
1,3-Dichloropropane	77173		0.5

Southern California Laboratory - SWQIS Lab ID No. 5091
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 909-5385

DATE REPORTED : 9/25/89

METHOD USED : EPA [X] 524.2 [] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT
2,2-Dichloropropane	77170	ND	0.5
1,1-Dichloropropylene	77168		0.5
cis- & trans-1,3-Dichloropropylene			0.5
Ethyl benzene	34371		0.5
Ethylene dibromide (EDB)	77651		0.5
Hexachlorobutadiene	34391		0.5
Isopropylbenzene (Cumene 77356)	77223		0.5
p-Isopropyltoluene (p-Cymene)	A-011		0.5
Methylene chloride (Dichloromethane)	34423		0.5
Methyl Ethyl Ketone	81595		5.0
Methyl Isobutyl Ketone	81596		5.0
Naphthalene	34696		0.5
n-Propylbenzene	77224		0.5
Styrene	77128		0.5
1,1,1,2-Tetrachloroethane	77562		0.5
1,1,2,2-Tetrachloroethane	34516	↓	0.5
Tetrachloroethylene (PCE)	34475	0.50	0.5
Toluene	34010	ND	0.5
1,2,3-Trichlorobenzene	77613		0.5
1,2,4-Trichlorobenzene	34551		0.5
1,1,1-Trichloroethane (1,1,1-TCA)	34506		0.5
1,1,2-Trichloroethane (1,1,2-TCA)	34511	↓	0.5
Trichloroethylene (TCE)	39180	23	0.5
1,2,3-Trichloropropane	77443	ND	0.5
Trichlorofluoromethane (Freon 11)	34488		0.5
1,2,4-Trimethylbenzene	77222		0.5
1,3,5-Trimethylbenzene	77226		0.5
1,1,2-Trichloro-trifluoroethane (Freon 113)	81611		0.5
Vinyl chloride (VC)	39175		0.5
m,p-Xylenes			0.5
o-Xylene	77135	↓	0.5

California State Department Of Health Services
Southern California Laboratory - SWQIS Lab ID No. 5091
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 909-5386

DATE REPORTED : 9/25/89

METHOD USED : EPA [X] 524.2 [ ] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT
Acrolein	34210	ND	10.0
Acrylonitrile	34215		5.0
Benzene	34030		0.5
Bromobenzene	81555		0.5
Bromochloromethane	A-012		0.5
Bromodichloromethane	32101		0.5
Bromoform	32104		0.5
Bromomethane (Methyl bromide)	34413		0.5
n-Butylbenzene	A-010		0.5
sec-Butylbenzene	77350		0.5
tert-Butylbenzene	77353		0.5
Carbon tetrachloride	32102		0.5
Chlorobenzene (Monochlorobenzene)	34301		0.5
Chloroethane	34311		0.5
2-Chloroethylvinyl ether	34576		1.0
Chloroform	32106		0.5
Chloromethane (Methyl Chloride)	34418		0.5
o-Chlorotoluene (2-Chlorotoluene)	A-008		0.5
p-Chlorotoluene (4-Chlorotoluene)	A-009		0.5
Dibromochloromethane	32105		0.5
Dibromomethane	77596		0.5
1,2-Dichlorobenzene (o-DCB)	34536		0.5
1,3-Dichlorobenzene (m-DCB)	34566		0.5
1,4-Dichlorobenzene (p-DCB)	34571		0.5
Dichlorodifluoromethane (Freon 12)	34668		0.5
1,1-Dichloroethane (1,1-DCA)	34496		0.5
1,2-Dichloroethane (1,2-DCA)	34531		0.5
1,1-Dichloroethylene (1,1-DCE)	34501	2.5	0.5
cis-1,2-Dichloroethylene	77093	ND	0.5
trans-1,2-Dichloroethylene	34546		0.5
1,2-Dichloropropane	34541		0.5
1,3-Dichloropropane	77173		0.5

Southern California Laboratory - SWQIS Lab ID No. 5091
Volatile Organic Chemicals

LAB SAMPLE ID NO.: 909-5386

DATE REPORTED : 9/25/89

METHOD USED : EPA [X] 524.2 [] 624
All reporting units = Mcg/l(ppb)
N.D. = None detected

CONSTITUENT	STORET CODE	ANALYSIS RESULTS	DETECTION LIMIT
2,2-Dichloropropane	77170	ND	0.5
1,1-Dichloropropylene	77168		0.5
cis- & trans-1,3-Dichloropropylene			0.5
Ethyl benzene	34371		0.5
Ethylene dibromide (EDB)	77651		0.5
Hexachlorobutadiene	34391		0.5
Isopropylbenzene (Cumene 77356)	77223		0.5
p-Isopropyltoluene (p-Cymene)	A-011		0.5
Methylene chloride (Dichloromethane)	34423		0.5
Methyl Ethyl Ketone	81595		5.0
Methyl Isobutyl Ketone	81596		5.0
Naphthalene	34696		0.5
n-Propylbenzene	77224		0.5
Styrene	77128		0.5
1,1,1,2-Tetrachloroethane	77562		0.5
1,1,2,2-Tetrachloroethane	34516		0.5
Tetrachloroethylene (PCE)	34475	8.7	0.5
Toluene	34010	ND	0.5
1,2,3-Trichlorobenzene	77613		0.5
1,2,4-Trichlorobenzene	34551		0.5
1,1,1-Trichloroethane (1,1,1-TCA)	34506		0.5
1,1,2-Trichloroethane (1,1,2-TCA)	34511		0.5
Trichloroethylene (TCE)	39180	33	0.5
1,2,3-Trichloropropane	77443	ND	0.5
Trichlorofluoromethane (Freon 11)	34488		0.5
1,2,4-Trimethylbenzene	77222		0.5
1,3,5-Trimethylbenzene	77226		0.5
1,1,2-Trichloro-trifluoroethane (Freon 113)	81611		0.5
Vinyl chloride (VC)	39175		0.5
m,p-Xylenes			0.5
o-Xylene	77135		0.5

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS — LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

JOB NO. AEI-089 | BORING LOG | SHEET 1 OF 5

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-1 DATE/TIME STARTED: 3/22/89 - 7:30

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/22/89 -16:00

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 143 feet elev. 35.37

Fullerton, CA 92631 SURFACE ELEVATION: 178.37 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 128.1 feet el. 50.27

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
								Asphalt
5	BP-1@5'	4/3/4		N	B	D	CL	Brown, clayey silt
10	BP-1@10'	3/6/7		N	B	D	CL	Brown, clayey silt
15	BP-1@15'	5/6/8		N	B	D	CL	Brown, clayey silt
20	BP-1@20'	12/15/20		N	B	D	CL	Brown, clayey silt
25	BP-1@25'	4/7/9		N	DB	D	ML	Dark brown silty clay
30		3/4/7		N	DB	D	ML	Dark brown silty clay

JOB NO. AEI - 089 | BORING LOG | SHEET 2 OF 5

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-1 DATE/TIME STARTED: 3/22/89 - 7:30

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/22/89 -16:00

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 143 feet elev 35,37

Fullerton, CA 92631 SURFACE ELEVATION: 178.37 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 128.1 feet

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
35		4/5/14		N	DB	D	ML	Dark brown silty clay
40		5/7/10		N	DB	D	ML	Dark brown silty clay
45		5/7/10		N	DB	D	ML	Dark brown silty clay
50	BP-1@50'	8/12/16		N	B	D	ML/CL	Brown, clayey fine silt
55		3/5/12		N	DB	D	ML	Dark brown clay
60		15/15/21		N	B	D	ML	Brown clayey silt

JOB NO. AEI-089 | BORING LOG | SHEET 3 OF 5

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-1 DATE/TIME STARTED: 3/22/89 - 7:30

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/22/89 -16:00

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 143 feet

Fullerton, CA 92631 SURFACE ELEVATION: 178.37 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 128.1 feet

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
65		18/28/28		N	LB	SM	SM	Clayey with medium sand
70		25/30/30		N	LB	SM	SM	Clayey with medium sand
75		9/11/16		N	LB	SM	SM	Clayey with medium sand
80		10/11/20		N	LB	SM	SM	Clayey with medium sand
85		18/40/50		N	LB	SM	SP	Light brown medium sand
90		14/15/24		N	LB	SM	SP	Light brown medium sand

JOB NO. AEI-089 | BORING LOG | SHEET 4 OF 5

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-1 DATE/TIME STARTED: 3/22/89 - 7:30

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/22/89 -16:00

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 143 feet

Fullerton, CA 92631 SURFACE ELEVATION: 178.37 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 128.1 feet

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
95		10/10/20		N	LB	W	SP	Light brown medium sand slight indication of perched water
100	BP-1@100'	5/5/8		N	DB	SW	SC	Dark brown clayey silt
105		9/13/27		N	B	SW	SC	Brown clayey medium sand
110		20/63/80		N	B	D	SW	Medium sand
115		60/125/		N	B	D	GP	Medium sand with cobbles
120	BP-1@120'	80/90/80		N	B	D	GP	Medium sand with cobbles.

JOB NO. AEI-089 | BORING LOG | SHEET 5 OF 5

PROJECT NAME: American Electronics, Inc. | BORING NO. Monitoring Well BP-1 | DATE/TIME STARTED: 3/22/89 - 7:30

ADDRESS: 1600 East Valencia Avenue | DRILLING CONTRACTOR: | DATE/TIME COMPLETED: 3/22/89 -16:00

Fullerton, CA 92631 | H-F Drilling, Inc. | TOTAL DEPTH: 143 feet elev. 35.37

| Fullerton, CA 92631 | SURFACE ELEVATION: 178.37 feet

LOGGED BY: REL | DRILLING METHOD: Hollow-stem | WATER DEPTH: 128.1 feet

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
125		25/60/70		N	B	D	GP	Medium sand with cobbles
▽ 130	BP-1@130'	45/45		N	B	W	GM	Medium sand with silt
135		---		N	B	W	GM	Medium sand with silt
140	BP-1@140'	---		N	B	W	GM	Medium sand with silt
143		---						Bottom of excavation
145								
150		---						

JOB NO. AEI-089 | BORING LOG | SHEET 1 OF 2

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-2 DATE/TIME STARTED: 3/30/89 - 8:30

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/30/89 -15:30

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 140 feet elev 43,45

Fullerton, CA 92631 SURFACE ELEVATION: 183.45 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 132.7 feet elev 50.75

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
								Asphalt
5	BP-2@ 5'	3/7/10		N	B	D	SM	Brown, sandy silt
10	BP-2@10'	4/9/12		N	B	D	SM	Brown, sandy silt
15	BP-2@ 15'	4/10/10		N	B	D	SM	Brown, sandy silt
20	BP-2 @ 20'	4/10/10		N	B	D	SM	Brown, sandy silt
25	BP-2@ 25'	5/7/13		N	B	D	SM	Brown, sandy silt

JOB NO. AEI-089 | BORING LOG | SHEET 2 OF 2

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-2 DATE/TIME STARTED: 3/30/89 - 8:30

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/30/89 -15:30

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 140 feet ~~43.45~~

Fullerton, CA 92631 SURFACE ELEVATION: 183.45 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 132.7 feet ~~50.75~~

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
50	BP-2@ 50'	4/6/7		N	B	D	SM	Brown, sandy silt
100	BP-2@100'	17/30/35		N	DB	D	SW	Brown, fine to medium sand
▽ 140								Bottom of excavation
150				--	-	--	--	-----

JOB NO. AEI-089 | BORING LOG | SHEET 1 OF 2

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-3 DATE/TIME STARTED: 3/27/89 - 8:00

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/27/89 -15:00

Fullerton, CA 92631 H-F Drilling, Inc. TOTAL DEPTH: 153 feet elev 28.12

Fullerton, CA 92631 SURFACE ELEVATION: 181.12 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 131.4 feet elev 49.72

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
	BP-3@ 5'	4/5/7						Asphalt
5				N	B	D	CL	Brown, clayey silt
10	BP-3@ 10'	4/5/9		N	B	D	CL	Brown, clayey silt
15	BP-3@15'	4/4/6		N	B	D	CL	Brown, clayey silt
20	BP-3@ 20'	6/6/9		N	B	D	CL	Brown, clayey silt
25	BP-3@ 25'	4/6/10		N	B	D	CL	Brown, clayey silt

JOB NO. AEI-089 | BORING LOG | SHEET 2 OF 2

PROJECT NAME: American Electronics, Inc. BORING NO. Monitoring Well BP-3 DATE/TIME STARTED: 3/27/89 - 8:00

ADDRESS: 1600 East Valencia Avenue DRILLING CONTRACTOR: DATE/TIME COMPLETED: 3/27/89 -15:00

Fullerton, CA 92631 H-P Drilling, Inc. TOTAL DEPTH: 153 feet elev 25.72

Fullerton, CA 92631 SURFACE ELEVATION: 181.12 feet

LOGGED BY: REL DRILLING METHOD: Hollow-stem WATER DEPTH: 131.4 feet elev 49.72

SAMPLE DATA								DESCRIPTION
DEPTH (feet)	SAMPLE #	BLOWS/6"	OVA(ppm)	ODOR	COLOR	MOISTURE	USCS Symbol	
50	BP-3@ 50'	4/16/16		N	T	D	ML	Tan, fine silty clay
100	BP-3@100'	40/35/35		N	B	D	SW	Brown, fine to medium sand
150								
153								Bottom of excavation

COUNTY OF ORANGE

TOM URAM
DIRECTOR

L. REX EHLING, M.D.
HEALTH OFFICER

ENVIRONMENTAL HEALTH DIVISION
ROBERT E. MERRYMAN, R. S. MPH
DEPUTY DIRECTOR

MAILING ADDRESS: P.O. BOX 355
SANTA ANA, CA 92702

HEALTH CARE AGENCY
PUBLIC HEALTH SERVICES
ENVIRONMENTAL HEALTH DIVISION
2009 E. EDINGER AVENUE
SANTA ANA, CALIFORNIA 92705
(714) 667-3700

September 26, 1991

Richard Holland
American Electronics Inc.
1600 E. Valencia St.
Fullerton, CA 92631

Subject: Industrial Cleanup Remedial Action and Referral to Regional Water Quality Control Board at American Electronics Inc., 1600 E. Valencia St., Fullerton, CA 92631 - O.C.H.C.A Case #89-C36

Dear Mr. Hollnad:

This letter confirms the completion of site assessment and remedial action in regards to soil contamination at the above site as required by this Agency. With the provision that the information provided to this Agency was accurate and representative of existing conditions, it is the position of this office that no further action is required at this time.

This confirmation of completion is limited in scope. It is based on an evaluation of the public health threat presented by the inhalation, ingestion or dermal absorbtion of the contaminants in the affected soil. Possible environmental and public health threats that may be caused by potential (due to residual soil contamination) or actual contamination of the groundwater must be addressed by contacting the regional water quality control board.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present, or future operations at the site. Nor does it relieve you of the responsibility to clean up existing, additional or previously unidentified conditions at the site which cause or threaten to cause pollution or nuisance or otherwise pose a threat to water quality or public health.

Additionally, be advised that this evaluation considered the present, and where stated, proposed land use of the property. Changes in the present or proposed use of the site may require further site characterization and/or mitigation activity. It is the property owner's responsibility to notify this Agency of any changes in report content, future contamination findings, or site usage.

If you have any questions regarding this matter, please contact Mark Sutphin at (714) 667-3762.

Very truly yours,

William J. Diekmann, REHS, M.S.
Program Manager
Hazardous Materials Management Section
Environmental Health Division

Del Mar Analytical

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, SP-2
Lab Number: FK02612

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 26, 1996
Reported: Nov 26 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	10
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	24
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	3.9			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMajo
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	100%
a,a,a-Trifluorotoluene	101%

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-3
Lab Number: FK02815

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	1.0	N.D.
Bromobenzene	1.0	N.D.
Bromochloromethane	1.0	N.D.
Bromodichloromethane	1.0	N.D.
Bromoform	1.0	N.D.
Bromomethane	2.0	N.D.
n-Butylbenzene	1.0	N.D.
sec-Butylbenzene	1.0	N.D.
tert-Butylbenzene	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	2.0	N.D.
Chloroethane	5.0	N.D.
2-Chloroethylvinyl Ether	5.0	N.D.
Chloroform	1.0	N.D.
Chloromethane	2.0	N.D.
2-Chlorotoluene	1.0	N.D.
4-Chlorotoluene	1.0	N.D.
Dibromochloromethane	1.0	N.D.
1,2-Dibromo-3-chloropropane	1.0	N.D.
1,2-Dibromoethane	1.0	N.D.
Dibromomethane	1.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.
Dichlorodifluoromethane	1.0	N.D.
1,1-Dichloroethane	1.0	N.D.
1,2-Dichloroethane	1.0	N.D.
1,1-Dichloroethene	1.0	3.5
cis-1,2-Dichloroethene	1.0	N.D.
trans-1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
1,3-Dichloropropane	1.0	N.D.
2,2-Dichloropropane	1.0	N.D.
1,1-Dichloropropene	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	1.0	N.D.
Hexachlorobutadiene	1.0	N.D.
Isopropylbenzene	1.0	N.D.
p-Isopropyltoluene	1.0	N.D.
Methylene chloride	2.0	N.D.
Naphthalene	1.0	N.D.
n-Propylbenzene	1.0	N.D.
Styrene	1.0	N.D.
1,1,1,2-Tetrachloroethane	1.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	1.0	13
Toluene	1.0	N.D.
1,2,3-Trichlorobenzene	1.0	N.D.
1,2,4-Trichlorobenzene	1.0	N.D.
1,1,1-Trichloroethane	1.0	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	1.0	44
Trichlorofluoromethane	1.0	N.D.
1,2,3-Trichloropropane	1.0	N.D.
1,2,4-Trimethylbenzene	1.0	N.D.
1,3,5-Trimethylbenzene	1.0	N.D.
Vinyl chloride	1.0	N.D.
o-Xylene	1.0	N.D.
m,p-Xylenes	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Due to matrix effects and/or other factors, the sample required dilution. Detection limits for this sample have been raised by a factor of 2.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	98%
a,a,a-Trifluorotoluene	98%

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-4
Lab Number: FK02813

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.
Bromobenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
n-Butylbenzene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
2-Chlorotoluene	0.50	N.D.
4-Chlorotoluene	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.
Dibromomethane	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
Dichlorodifluoromethane	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	1.1
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
1,3-Dichloropropane	0.50	N.D.
2,2-Dichloropropane	0.50	N.D.
1,1-Dichloropropene	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Ethylbenzene	0.50	N.D.
Hexachlorobutadiene	0.50	N.D.
Isopropylbenzene	0.50	N.D.
p-Isopropyltoluene	0.50	N.D.
Methylene chloride	1.0	N.D.
Naphthalene	0.50	N.D.
n-Propylbenzene	0.50	N.D.
Styrene	0.50	N.D.
1,1,1,2-Tetrachloroethane	0.50	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	5.0
Toluene	0.50	N.D.
1,2,3-Trichlorobenzene	0.50	N.D.
1,2,4-Trichlorobenzene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	5.1
Trichlorofluoromethane	0.50	N.D.
1,2,3-Trichloropropane	0.50	N.D.
1,2,4-Trimethylbenzene	0.50	N.D.
1,3,5-Trimethylbenzene	0.50	N.D.
Vinyl chloride	0.50	N.D.
o-Xylene	0.50	N.D.
m,p-Xylenes	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1157)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries	
1-Chloro-3-fluorobenzene	97%
a,a,a-Trifluorotoluene	99%

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-A
Lab Number: FK02814

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.
Bromobenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
n-Butylbenzene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
2-Chlorotoluene	0.50	N.D.
4-Chlorotoluene	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.
Dibromomethane	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
Dichlorodifluoromethane	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	0.94
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
1,3-Dichloropropane	0.50	N.D.
2,2-Dichloropropane	0.50	N.D.
1,1-Dichloropropene	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Ethylbenzene	0.50	N.D.
Hexachlorobutadiene	0.50	N.D.
Isopropylbenzene	0.50	N.D.
p-Isopropyltoluene	0.50	N.D.
Methylene chloride	1.0	N.D.
Naphthalene	0.50	N.D.
n-Propylbenzene	0.50	N.D.
Styrene	0.50	N.D.
1,1,1,2-Tetrachloroethane	0.50	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	4.7
Toluene	0.50	N.D.
1,2,3-Trichlorobenzene	0.50	N.D.
1,2,4-Trichlorobenzene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	4.7
Trichlorofluoromethane	0.50	N.D.
1,2,3-Trichloropropane	0.50	N.D.
1,2,4-Trimethylbenzene	0.50	N.D.
1,3,5-Trimethylbenzene	0.50	N.D.
Vinyl chloride	0.50	N.D.
o-Xylene	0.50	N.D.
m,p-Xylenes	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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ATC Environmental	Client Project ID: 14240.0001	Sampled:	Nov 14, 1996
17321 Irvine Blvd.	American Electronics	Received:	Nov 15, 1996
Tustin, CA 92680	Sample Descript: Water, BP-8	Extracted:	Nov 25, 1996
Attention: Will Weaver	Lab Number: FK02816	Analyzed:	Nov 25, 1996
		Reported:	Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	4.0
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	8.3
1,2-Dibromo-3-chloropropane	0.60	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	1.1			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1157)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	95%

Results pertain only to samples tested in the laboratory. This report may not be reproduced, except in full, without written permission from Del Mar Analytical.

STATE OF CALIFORNIA—CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
3737 MAIN STREET, SUITE 500
RIVERSIDE, CA 92501-3339
PHONE: (909) 782-4130
FAX: (909) 781-6288

April 19, 1996

Mr. Richard Holland
American Electronics, Inc.
1600 East Valencia Drive
Fullerton, CA 92631

CLOSURE INVESTIGATION, FOR THE AMERICAN ELECTRONICS, INC., FACILITY LOCATED IN FULLERTON, ORANGE COUNTY

Dear Mr. Holland:

We have reviewed the above-referenced report dated August 31, 1995, submitted by Applied Geosciences, Inc. The report summarizes the results of the soil remedial action and soil confirmation sampling at the site. This letter confirms the completion of site investigation and remedial action for soil at the site. Soil investigations were conducted at the site between 1989 and 1991. These investigations identified the lateral and vertical extent of the contaminants in the soil. Elevated concentrations of chlorinated volatile organic compounds (mostly trichloroethane and tetrachloroethene) were found in a limited area within the southwestern portion of the site. In October 1994, a vapor extraction system was installed to remediate the impacted shallow soil. Analytical results of soil confirmation samples collected from the highly impacted area in July 1995 indicate that the concentrations of contaminants in the soil have significantly decreased and, therefore, the significant threat to groundwater has been mitigated.

Based on the low concentrations of volatile organic compounds that are present in the soil and the source removal action conducted, we are not requiring additional investigation or remediation of the soil. Therefore, on the condition that the information provided to this agency was accurate and representative of the existing conditions at the site, no further action related to soil is required. This response focuses only on the soil investigation and remedial action at the site. The issue regarding further action on the groundwater quality impacts from chemicals at the site is a still under discussion.

This letter does not relieve you of the responsibility to comply with the laws and guidelines of other regulatory agencies that may be involved with this project. Also, this letter does not relieve you of any future liabilities which could be assessed by federal, state or local agencies for mitigation of any adverse impacts to waters of the state that may have resulted from this site. If you have any questions on this matter, please contact Robert L. Holub at (909) 782-3298 or Augustine Anijielo at (909) 782-3292.

Sincerely,

GJ Thibeault

Gerard J. Thibeault
Executive Officer

cc: Luis Lodrigueza - Orange County Health Care Agency
Roy Herndon - Orange County Water District
Will Weaver - Applied Geosciences Inc.
Mark S. Cousineau - Cousineau, Lundblad & Associates, Inc.

AEA/amerisol.cet

STATE OF CALIFORNIA—CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION
3737 MAIN STREET, SUITE 500
RIVERSIDE, CA 92501-3339
PHONE: (909) 782-4130
FAX: (909) 781-6288

June 20, 1996

Mr. Richard Holland
American Electronics, Inc.
1600 East Valencia Drive
Fullerton, CA 92631

GROUNDWATER INVESTIGATION, AMERICAN ELECTRONICS, INC., 1600 EAST VALENCIA DRIVE, FULLERTON

Dear Mr. Holland:

This is to follow-up your May 9, 1996 meeting with members of my staff regarding the status of the groundwater investigation at the site. During the meeting you presented your case in support of obtaining closure of further groundwater investigations. We have determined that contaminants that were discharged from the site are not present in groundwater in concentrations that warrant a site specific groundwater cleanup. Previously, on April 19, 1996, we issued a no further action letter for the soil at the site.

Soil and groundwater investigations were conducted at the site between 1989 and 1991. Currently, eight groundwater monitoring wells exist on and off-site. These wells were installed to characterize and to determine the migration pattern of contaminants and to evaluate site hydrogeology. Groundwater monitoring has been ongoing at the site since 1989. Generally, groundwater elevations have increased over time and the groundwater flow direction is generally southwesterly. Contaminant concentrations in groundwater have declined significantly from the original concentrations in 1989.

Discharges of chlorinated volatile organic compounds from this site have impacted groundwater. However, it appears that groundwater containing VOCs is also flowing beneath the site from an off-site source(s). Based on the concentrations that are present in the groundwater and the source removal action conducted, we are not requiring additional investigation or site specific remediation of groundwater. Therefore, on the condition that the information provided to this agency was accurate and representative of the existing conditions at the site, no further action related to groundwater is required. This letter is conditioned upon maintenance of existing monitoring wells BP-2, BP-3, BP-4 and BP-8, and annual monitoring of these wells. Also, the Orange County Water District, the Regional Board, or their designee, may request access to sample these wells on an as needed basis. We have no objections to the destruction of the other existing monitoring wells in accordance with applicable regulations.

This letter does not relieve you of the responsibility to comply with the laws and guidelines of other regulatory agencies that may be involved with this project. Also, this letter does not relieve you of any future liabilities that could be assessed by this agency or other federal, state or local agencies for mitigation of any adverse impacts to waters of the state that may have resulted from this site. The Orange County Water District and/or the Regional Board may in the future pursue region-wide groundwater mitigation. If so, you may be required to contribute funds to the region-wide groundwater mitigation.

If you have any questions on this matter, please contact Robert L. Holub at (909) 782-3298 or Augustine Anijielo at (909) 782-3292.

Sincerely,

Gerard J. Thibeault
Executive Officer

cc: Luis Lodrigueza - Orange County Health Care Agency
Roy Herndon - Orange County Water District
Applied Geosciences Inc. - Will Weaver
Mark S. Cousineau - Cousineau, Lundblad & Associates, Inc.

AEA/american.cet

TARGHEE, INC.
ENVIRONMENTAL CONSULTING

DRAFT - CONFIDENTIAL
ATTORNEY WORK PRODUCT

January 20, 2003

James S. Heiser, Esq.
Ducommun Incorporated
111 West Ocean Boulevard, Suite 900
Long Beach, CA 90802

Re: Phase I Environmental Site Assessment Report
1600 E. Valencia Drive
Fullerton, CA 92831

Dear Mr. Heiser:

Targhee, Inc. is pleased to enclose our Phase I Environmental Site Assessment Report on the above-referenced property.

Targhee appreciates the opportunity to have been of assistance and looks forward to working with you again.

Sincerely,

David L. Bauer
President

David Broadbent
Director of Technical Services
Registered Environmental Assessor I
No. 00122

Enclosure

110 Pine Avenue, Suite 925 • Long Beach, CA 90802-4426 • (562) 435-8080 FAX (562) 590-8795

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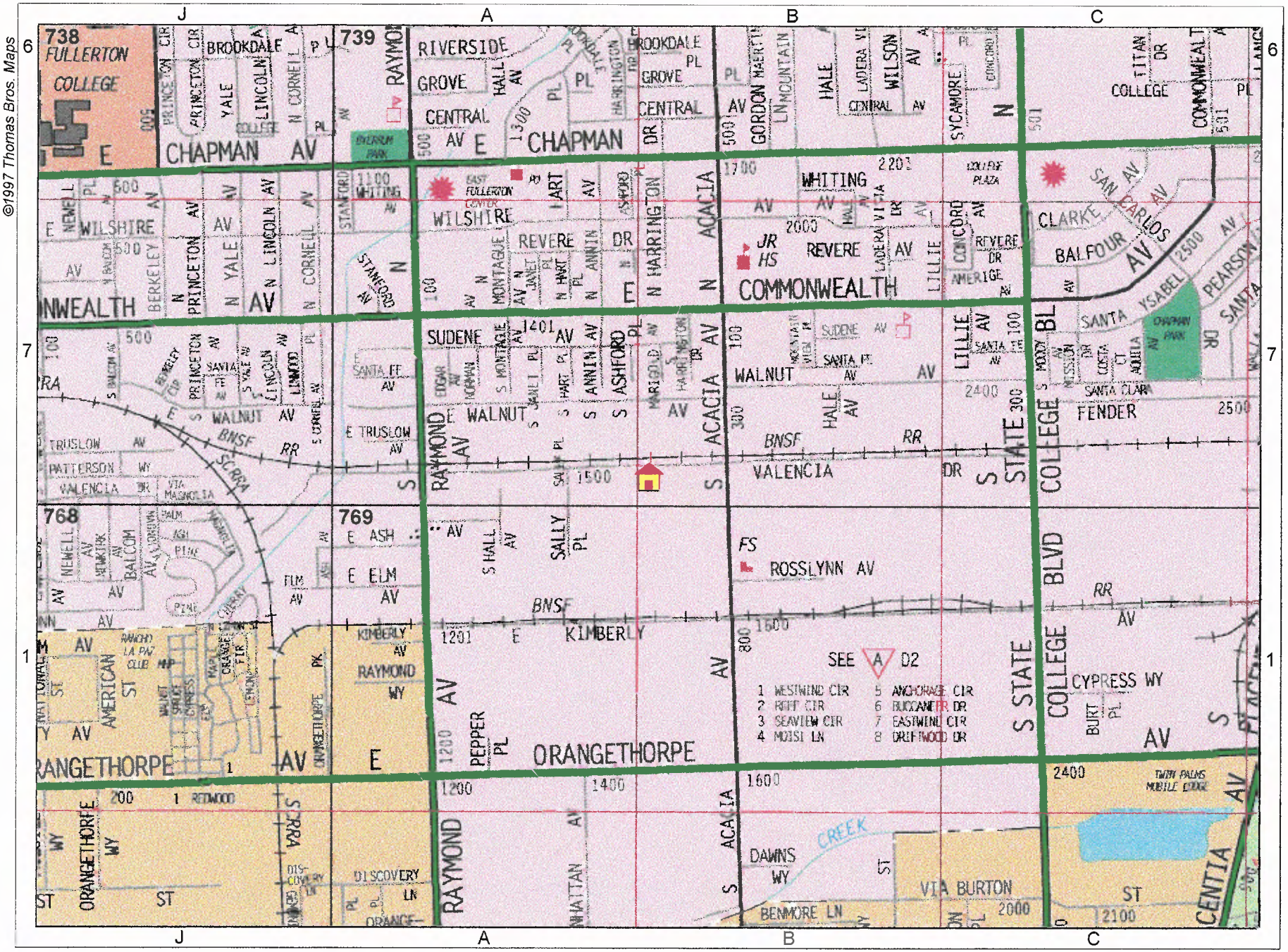
APPENDIX A

LOCAL AREA MAP/SITE PLAN



1600 E Valencia Dr, Fullerton, 92831, Page & Grid 739 B7

Site Photographs

1. 1600 East Valencia Drive
2. Southern parking lot
3. Southern end of building
4. Tent-like structure
5. Former chemical storage area at southwest corner of property
6. Eastern loading dock
7. Loading dock sump
8. Building interior
9. Building interior
10. Ink storage
11. Ink storage
12. Safety cans
13. Clarifier in a doorway separating Graphics 2000 and Solutions Unlimited
14. Clarifier located at the southwest corner of the Solutions Unlimited portion of the building near a paper cutting machine
15. NFPA Placard on screen cleaning block building's door
16. Inside the concrete block building currently used to clean silk screens used in the graphics process.
17. Floor drain present in silk screen cleaning room between the washing and drying areas

APPENDIX C

HISTORICAL RESEARCH DOCUMENTATION

Aerial Photograph Sources

1600 East Valencia Drive
Fullerton, California 92831

1953

Continental Aerial Photo, Inc.
10571 Calle Lee, Suite 163
Los Alamitos, California 90720
Negative No. 6K-21; May 30, 1953
Scale: 1 inch = approximately 650 feet

1970

Continental Aerial Photo, Inc.
Negative No. 60-5-145; January 30, 1970
Scale: 1 inch = approximately 650 feet

1986

Continental Aerial Photo, Inc.
Negative No. F-116; October 30, 1986
Scale: 1 inch = approximately 650 feet

RECEIVED
DEC 1 8 2002
CARGNEE, INC.

FIRE DEPARTMENT
FIRE PREVENTION BUREAU

312 EAST COMMONWEALTH AVENUE • FULLERTON, CA 92632 • (714) 738-6500 FAX (714) 738-5355

MARC MARTIN, FIRE CHIEF

January 20, 1995

Mr. Val Konovalov
American Electronics Inc.
1600 E. Valencia Dr.
Fullerton, CA. 92631

Subject: Site closure for American Electronics Inc.
1600 E. Valencia Dr. Fullerton, CA. 92631

Dear Mr. Konovalov:

This letter confirms the completion of the removal of the 6,000 gallon gasoline underground storage tank and related soil investigation activities at American Electronics Inc. 1600 E. Valencia Dr. Fullerton, CA. With the provision that the information provided to this department was accurate and representative of existing conditions, it is the position of this office that no further action is required at this time.

The contents of all reports and findings have been reviewed. Based on the information submitted and current requirements, this department acknowledges to the Santa Ana Regional Water Quality Control Board that no further action be required at this time.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present or future operations at the site. Nor does it relieve you of the responsibility to clean up existing, additional or previously unidentified conditions at the site which cause or threaten to cause pollution or nuisance or otherwise pose a threat to water quality or public health.

Additionally, be advised that changes in the present or proposed use of the site may require further site characterization and mitigation activity. It is the property owner's responsibility to notify this Department of any changes in report content, further contamination findings or site usage.

If you have any questions regarding this matter, please contact me at (714) 738-6500.

Sincerely,

Steve Long
Underground Tank Specialist

enclosure:
cc: SARWQCB, Ken Williams
Amwest Environmental Engineering, Charlie Loha
Remediation 95/Site Closure

CASE SUMMARY AND CLOSURE RATIONALE

Date: January 20, 1995

Site Name: American Electronics Inc.
1
Address: 1600 E. Valencia Dr. Fullerton, CA. 92631

Responsible Party: American Electronics Inc.

Current Land Use: Industrial/Commercial

Future Land Use: Same

Adjacent Land Use: Industrial/Commercial

UST Information (number, size, material stored, etc.) **6,000 gal gasoline**

Highest Conc. Soil (ppm) Contaminant	Initial	Final	Highest Conc. Groundwater(ppb) Initial	Final
1. TPH(g)	11,900	ND	NA	
2. Benzene	20.9	ND	NA	
3. Toluene	376	ND	NA	
4. Ethylbenzene	122	ND	NA	
5. Xylene	915	ND	NA	

Depth of Highest Benzene Concentration Remaining: NA (ft) - (ppm)

Greatest Depth of Benzene Remaining: NA (ft) - (ppm)

Depth to groundwater: >100 (ft) **Estimated**

Soil Types: Silty sand

Forebay / Pressure/Near OCWD Recharge

Case Summary (Cleanup Efforts and Closure Rationale):

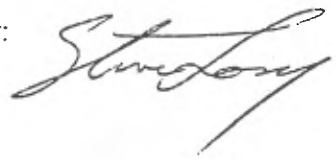
October 27, 1994 one 6,000 gallon underground storage tank was removed. Under the dispenser the soil appeared to be contaminated. The suspect soil was removed, approximately two cubic yards, and the bottom of the excavation (5 feet deep) was sampled. The sample revealed that there was contamination still present.

TPH(g)	49.6 ppm	Benzene	.072 ppm	Toluene	1.29 ppm
Ethylbenzene	.36 ppm	Xylene	4.39 ppm		

December 5, 1994 approximately 26.65 tons of contaminated soil was excavated and taken to Candelaria Environmental Co. The bottom and sides of the excavation were sampled to verify the removal of all contamination in excess of LUFT guidelines. All verification samples had no detectable TPH or BTEX.

Site closure is recommended for the following reasons:

1. The source of contamination has been removed.
2. All detectable concentrations of TPH and BTEX have been removed.
3. There is no apparent threat to groundwater.

Prepared and submitted by: 

APPENDIX E

EDR CITY DIRECTORY ABSTRACT

PROP-C-Controlled/Proprietary Business Information Claimed

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APPENDIX F

SUPPLEMENTAL AGENCY REVIEW

PROP-C-Controlled/Proprietary Business Information Claimed; WPP-Controlled/Legal-Privilege/Work-Product Protection

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APPENDIX G

INTERVIEW DOCUMENTATION

SEE SECTION 7.4 FOR INTERVIEW DOCUMENTATION

APPENDIX H

SPECIAL CONTRACTUAL CONDITIONS

THERE ARE NO SPECIAL CONTRACTUAL CONDITIONS

APPENDIX I

PHASE I ENVIRONMENTAL
SITE ASSESSMENT PROPOSAL

TARGHEE, INC.

ENVIRONMENTAL CONSULTING

December 17, 2002

Mr. Robert Cowan
Aerochem, Incorporated
1885 North Batavia Street
Orange, CA 92865-4190

Re: Phase I Environmental Site Assessment Proposal
1600 East Valencia Drive
Fullerton, California 92831

Dear Mr. Cowan:

In accordance with our conversation, please find enclosed Targhee's Phase I Environmental Site Assessment Scope of Services, Professional Services Agreement, Schedule of Fees and brief resumes of our staff.

Based on Targhee's current understanding of the factual circumstances that have been presented to us, the cost of the proposed scope of services will be $3,000, and the assessment will be performed in accordance with American Society for Testing and Materials ("ASTM") Standard Practice E 1527-00.

Record searches are conducted based upon the address provided. Each address requires a research/acquisition fee for regulatory files and computer-generated data. Therefore, additional charges will be imposed if other addresses are provided or discovered after work has commenced.

Targhee will provide two original copies of the report which will be forwarded to you via overnight delivery. Additional copies and/or multiple addresses for overnight delivery will be at an additional charge. This proposal is valid for 30 calendar days. Client consultation beyond an initial discussion of the report and services beyond the Phase I scope of services will be charged at additional time and expense in accordance with Targhee's Schedule of Fees.

At your earliest convenience, please sign and return one copy of the Professional Services Agreement. Based upon your verbal request, we have started work on this project. An invoice for the amount due will be mailed after the report is mailed to you. The report will be completed within 15 business days or less. However, the report may be delayed if timely access to the property is denied. Also, if any outstanding responses from agencies are likely to have an impact on the findings, opinions or conclusions in the report, the report will be delivered after the 15-business day due date with the approval of the client.

We appreciate the opportunity to present our proposed scope of services to you. Please call me if you have any questions.

Very truly yours,

Dave Broadbent
Environmental Consultant

Enclosure

110 Pine Avenue, Suite 925 • Long Beach, CA 90802-4426 • (562) 435-8080 FAX (562) 590-8795

TARGHEE, INC.

ENVIRONMENTAL CONSULTING

PHASE I ENVIRONMENTAL SITE ASSESSMENT SCOPE OF SERVICES

1600 East Valencia Drive
Fullerton, California 92831

The Phase I Environmental Site Assessment will be performed in conformance with the scope and limitations of American Society for Testing and Materials ("ASTM") Standard Practice E 1527-00.

1. Prepare a history of the subject site development and land use based on data collected from local government agency records, aerial photographs, fire insurance maps, local street directories, on-site inspection and individuals, as appropriate.

2. Conduct a database search for the subject site and nearby properties on federal, state and local lists of standard environmental record sources.

3. In addition to the database search, contact state or local sources that may have records pertaining to environmental conditions at the subject site and provide estimated groundwater depth and gradient by a California Registered Geologist.

4. Inspect the subject site exterior and interiors of all buildings for environmental conditions resulting from the handling, use, storage or disposal of hazardous substances and petroleum products.

5. Describe observed or identified present and past uses of adjoining properties and determine the current status of any environmental conditions on these properties that could impact the subject site.

6. Provide a written report describing the subject site and adjoining properties and discussing all findings, opinions, conclusions and any recognized environmental conditions.

7. Business environmental risk issues (such as those related to asbestos-containing materials, radon, lead-based paint, lead in drinking water, wetlands, regulatory compliance, cultural and historic resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality and high voltage powerlines) are not within this scope of services under ASTM E 1527-00.

The scope of services provided by Targhee, Incorporated is intended to satisfy the "all appropriate inquiry" requirement to qualify for the innocent landowner defense to liability under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") and is offered to the Client under the terms and conditions of the attached Professional Services Agreement, dated December 17, 2002, at a cost of $3,000.

110 Pine Avenue, Suite 925 • Long Beach, CA 90802-4426 • (562) 435-8080 FAX (562) 590-8795

APPENDIX J

REFERENCES

LIST OF REFERENCES

California Department of Conservation, Division of Mines and Geology, 1976, Environmental Geology of Orange County, California, Open File Report 79-8 LA.

California Department of Water Resources, 1967, Progress Report on Ground Water Geology of the Coastal Plain of Orange County, 138 p.

Orange County Water District, February 2002, 2000-2001 Engineer's Report on Groundwater Conditions, Water Supply and Basin Utilization in the Orange County Water District.

Orange County Water District, 2000, Guide to Information Requests, Isobath Map of Near Surface Water 1 inch = 3.5 miles.

U.S. Geological Survey, 1965 (Photorevised 1981), Anaheim, California 7½ Minute Topographic Quadrangle, 1:24,000.

The California Environmental Protection Agency, Department of Toxic Substances Control ("DTSC"), Site Mitigation and Brownfields Reuse Program Database (www.dtsc.ca.gov/database).

California Environmental Protection Agency, Department of Toxic Substances Control, Region 3 (Glendale) and Region 4 (Cypress); CALSITES Deed Restrictions by Site Name [www.dtsc.ca.gov/Site Cleanup/deed-restrict-name.html].

California Environmental Protection Agency, Department of Toxic Substances Control, Office of Environmental Information Management, "Hazardous Waste and Substances Sites List", April 1998.

California Regional Water Quality Control Board, Santa Ana Region, "Leaking Underground Tank Information System ("LUSTIS").

California State Water Resources Control Board, GeoTracker Geographic Environmental Information Management System ("GEIMS") [http://geotracker.swrcb.ca.gov/].

California State Water Resources Control Board, "Underground Storage Tank List" [referred to as the State Wide Environmental Evaluation and Planning System Report ("SWEEPS")], June 1994 (obtained October 1996).

California Environmental Protection Agency, Hazardous Materials Data Management Program, "Leaking Underground Storage Tank List", October 1996.

"California - Alaska Oil & Gas Fields", Munger, K. R., Munger Map Book, Los Angeles, California, 40th Edition, June 1999.

State of California, Division of Oil, Gas, and Geothermal Resources, "Regional Wildcat Map W-65, August 15, 2000.

South Coast Air Quality Management District.

County of Orange Health Care Agency.

County of Orange Sanitation District, Source Control Division.

Orange County Water District, Water Quality Department.

City of Fullerton Building Department, Fire Department, Fire Prevention Division

EDR, December 18, 2002, The EDR-Radius Map with GeoCheck™, 1600 East Valencia Drive, Fullerton, California 92831, Inquiry Number 899423.2s.

EDR Sanborn, Incorporated, 1600 East Valencia Drive, Fullerton, California 92831, [No Coverage], Sanborn™ Map Report, Inquiry Number 899423.3S.

The EDR-Historical Topographic Map Report, 1600 East Valencia Drive, Fullerton, California, Inquiry Number 899423.6.

The EDR-City Directory Search Abstract, 1600 East Valencia Drive, Fullerton, California 92831, Inquiry Number 899423-4.

Aerial photographs, Continental Aerial Photo, 10571 Calle Lee, Suite 163, Los Alamitos, California

The Thomas Guide 1998 Orange County, Map Page 739 - B:7.

Delorme, 1999, California South 3-D Topoquads, CD-ROM set, Yarmouth, ME.

Flood Data Systems, Incorporated, Los Angeles, "Orange County Hazardous Waste and Substance Sites", First Edition, 1988.

TARGHEE, INC.
ENVIRONMENTAL CONSULTING

VOLUME II

The EDR Radius Map Report
Appendix D

1600 East Valencia Drive
Fullerton, CA 92831

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Phase I Environmental
Site Assessment
1600 E. Valencia Dr.
Fullerton, CA 92631
ATEC Project No. 09041

Prepared for:

American Electronics, Inc.
1600 E. Valencia Dr.
Fullerton, CA 92631

Atten: Dominick Monaco

August 21, 1990

ATEC Associates, Inc.
Corporate Office
8665 Bash Street
Indianapolis, Indiana 46256-1202
[317] 842-4463, FAX # [317] 842-7308

August 21, 1990

Mr. Dominick Monaco
American Electronics, Inc.
1600 E. Valencia Dr.
Fullerton, CA 92631

RE: Phase I Environmental Site Assessment
1600 East Valencia Drive
Fullerton, California 92631
ATEC Project Number 09041

Dear Mr. Monaco:

ATEC Environmental Consultants (ATEC) has completed the above referenced Environmental Site Assessment.

We trust this information is sufficient for your current needs. Please contact us for any clarification of our report or recommendations. ATEC wishes to thank everyone who provided their cooperation and assistance in expediting the completion of this project.

Additional information from the Fullerton Fire Department and Orange County Environmental Health Department regarding underground storage tanks has been requested. If relevant information is acquired, an addendum to this report will be submitted.

Sincerely,

ATEC ENVIRONMENTAL CONSULTANTS

Deborah Nicley for

Janet Holtz
Environmental Scientist
Geoscience Services

Michael Orum for

David Bullock
Department Manager
Industrial Hygiene

DB:JH/lg

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EXECUTIVE SUMMARY

ATEC Environmental Consultants (ATEC) has conducted an Environmental Site Assessment (ESA) of the property known as American Electronics, Inc., located at 1600 East Valencia Drive, Fullerton, County of Orange, California.

The methods used in the assessment consisted of on-site reconnaissance, interviews and regulatory research with federal, state and local agencies, review of historic aerial photographs of the region, and a physical inspection of the subject property and its vicinity. Radon sampling was not in the scope of services for this project. An asbestos survey will be submitted under another cover.

An inspection of the site facility found the property to be generally well-maintained. Hazardous chemical waste is stored properly and disposed of under manifest. However, chemical drum storage inside the facility is not adequate, and spill containment is necessary. Improved employee safety procedures and proper ventilation of the facility also needs to be implemented.

A Regional Water Quality Control Board investigation documented a groundwater contamination problem at the subject site. Three groundwater monitoring wells are located on the property and a fourth monitoring well is to be installed soon. The Regional Board will mandate groundwater remediation procedures, if warranted, after the collection and analyses of sufficient data. No sites in the immediate vicinity of the subject site appear to pose an environmental concern at this time.

Other than the information stated above, ATEC observed no conditions or practices that appear to pose immediate environmental concern to the site.

TABLE OF CONTENTS

LETTER OF TRANSMITTAL

EXECUTIVE SUMMARY iii

1.0 INTRODUCTION 1

2.0 PHYSICAL SITE DESCRIPTION 1
- 2.1 General Site Conditions 2
- 2.2 Tanks 2
  - 2.2.1 Underground Storage Tanks 2
  - 2.2.2 Aboveground Storage Tanks 3
- 2.3 PCBs 3
- 2.4 Asbestos-Containing Material (ACM) 4
- 2.5 Utilities 4
  - 2.5.1 Sewage 4
  - 2.5.2 Water 4
  - 2.5.3 Energy 4
- 2.6 Solid Waste, Hazardous Waste & Materials 4
  - 2.6.1 Containers/Drums 4
  - 2.6.2 Bulk Storage Areas 6
  - 2.6.3 Waste Treatment Areas/Lagoons 7
  - 2.6.4 Maintenance Shops/Machine Storage Areas 7
  - 2.6.5 Open Ditches 7
  - 2.6.6 Stained Areas 7
  - 2.6.7 Vegetative Stress 8
- 2.7 Flood Conditions 8
- 2.8 Seismic Conditions 8

3.0 ADJACENT LAND USE 9

4.0 SITE HISTORY AND RECORDS REVIEW 9
- 4.1 Prior Ownership and Usage 9
- 4.2 Aerial Photography 9
- 4.3 Regulatory Review 10
  - 4.3.1 Federal 10
  - 4.3.2 State 10
  - 4.3.3 Local/Agency 12

5.0 CONCLUSIONS AND RECOMMENDATIONS 13
- 5.1 Conclusion 13
- 5.2 Recommendations 14

6.0 QUALIFICATIONS 15

APPENDICES
- APPENDIX A: FIGURES
- APPENDIX B: PHOTOGRAPHIC DOCUMENTATION
- APPENDIX C: CONTACTS AND REFERENCES

1.0 INTRODUCTION

ATEC Environmental Consultants (ATEC) was retained by Mr. Michael Dever on July 25, 1990, to conduct an Environmental Site Assessment (ESA) of a manufacturing firm known as American Electronics, Inc. (AEI). This property is located at 1600 East Valencia Drive, Fullerton, in the County of Orange, California (Figure 1). A work order was issued to ATEC - Irvine by Mr. Dever on July 25, 1990.

The purpose of this study was to evaluate the site in regard to environmental issues associated with past and/or present operations at the site or neighboring properties which might pose liability for the owners or lenders. Radon sampling was not conducted as part of the assessment. An asbestos survey and sampling program is being covered in a separate report.

ATEC personnel performed a guided site inspection of the property on August 1, 1990 to identify obvious potential contamination sources. Mr. Dominic Monaco, Vice President, gave ATEC personnel authority to tour the facility and answered questions regarding the two-story building. Regulatory documents were reviewed and regulatory personnel were interviewed concerning activities at the site and in the general vicinity. Aerial photographs of the vicinity of the subject site were also examined.

2.0 PHYSICAL SITE DESCRIPTION

This section will describe the site features as observed by David Bullock, Department Manager of Industrial Hygiene, and Janet Holtz, Environmental Scientist, on August 1, 1990. Other features were determined from a review of topographic maps and pertinent public documents.

The site is bordered to the north by Valencia Drive and the Atchison-Topeka and Santa Fe railroad tracks, to the east by AETL Testing Lab, to the south by Yokohama Tires, and to the west by Acacia Avenue and Khyber, Inc. Overall, a 1000 foot radius of the subject site is characterized by predominantly manufacturing and warehousing facilities, research and development complexes, and open land and railroad tracks. The site is located approximately one mile north of the Riverside Freeway (91) and five miles south of the Imperial Highway (90). The nearest cross streets are Acacia Avenue to the east and Raymond Avenue to the west, with Valencia Drive running perpendicular east/west (Figure 1).

2.1 General Site Conditions

The site is roughly L-shaped and the single, 2-story building comprises approximately 100,000 square feet (Figure 2). The site is graded flat. The property is zoned MP100-Industrial Park, as defined by the City of Fullerton Planning Department.

The site is fully developed. The property consists of one building constructed in 1960. The tenant and principal owner of the property since 1960 has been American Electronics, Inc. The front and rear portions of the site are uncovered parking areas. The front parking lot was repaved with new asphalt on the day of the site visit. The asphalt in the rear parking areas is badly cracked and is also in need of repaving. The entrance to the building is landscaped with plants and large trees. Dumpsters are located in the rear parking lot and disposed of by MG Disposal, Fullerton, CA.

According to the Orange County Water District-Groundwater Contour Map, depth to groundwater at the subject site is approximately 130 feet and the regional flow direction is southwest. However, various agencies and consultants differ in their assessment of site specific groundwater flow direction for the area. The Regional Water Quality Control Board (RWQCB) maintains that several documented sites in the area have a northwest flow direction. Mr. Ray Lewis of Ray Lewis Engineering, Laguna Beach, CA reports that his firm is employing electrostatic sounding of three on-site monitoring wells in order to determine exact groundwater flow direction beneath AEI. Mr. Lewis states this information will be available on or around August 17, 1990.

2.2 Tanks

2.2.1 Underground Storage Tanks

One underground tank exists under the parking lot on the south side of the subject site. It was installed in the late 1970's to fuel company vehicles. The tank is permitted with the Orange County Health Care Agency, #1188-1, and the permit is valid until September 6, 1994. The tank and the pump are also permitted with the South Coast Air Quality Monitoring District (#M84912) and the permit is valid until July, 1991. According to Mr. Monaco, the tank's capacity is approximately 7500 gallons and is constructed of fiberglass. It is integrity-tested yearly and is also metered and checked via inventory

reconciliation. Mr. Monaco stated that there has been soil testing conducted around the perimeter of the tank to check for leakage. Results of the tests were not made available at the time of the site visit. (see Photo 5).

2.2.2 Aboveground Storage Tanks

One aboveground 250-gallon storage tank containing propane was observed on-site. The tank was mounted on a concrete pad in the south parking lot and showed no signs of leakage. It is used to refill propane-fueled forklifts on-site. (see Photo 5).

2.3 PCBs

One pad-mounted Edison-maintained transformer (KVA 1500) is located on the west property line of the subject site but is legally owned by the adjacent AETL Testing Lab (AETL). The subject site and AETL both draw power from the transformer for their respective facilities. Visual observation of the transformer showed leakage and staining on the east side of the transformer on the concrete pad below. (see Photo 3). In conversation with Mr. Brad Martin, Fullerton Area Manager for Southern California Edison, he stated that no transformers in the Fullerton area contain polychlorinated biphenyls (PCBs). Transformer inspection and replacement of PCB-contaminated dielectric fluid was completed in 1987. An Edison representative inspected the leaking transformer on the AETL property on August 3, 1990 and did not report a problem.

Three pole-mounted transformers are located in the south parking lot. However, according to Mr. Wall, they are not in use and have not been used for at least the past fifteen years. They are maintained for emergency back-up. (see Photo 4). Sampling of the units would be necessary in order to determine the PCB content of the transformers.

Ten dry transformers (110 volts) are located inside the building and three dry transformers (750 KVA) are located in the electrical room at the rear (southside) of the building. As dry transformers do not contain dielectric fluid, PCB contamination is not a concern.

A listing of all potential PCB-containing shop equipment was not included in the scope of work of this investigation. However, it was noted that the degreasing equipment used in the facility may also contain PCBs.

2.4 Asbestos-Containing Materials (ACMs)

An asbestos survey and sampling program will be performed and the analysis and recommendations will be submitted under separate cover.

2.5 Utilities

2.5.1 Sewage

The facility is serviced by the municipal sewer system and does not hold any special waste discharge permits.

2.5.2 Water

The water supplied to this site is administered by the City of Fullerton.

2.5.3 Energy

The electricity used at the site is supplied by The Southern California Edison Company, and the natural gas is supplied by Southern California Gas Company.

2.6 Solid Waste, Hazardous Waste & Materials

2.6.1 Containers/Drums

The building is divided into separate divisions, each division utilizing different chemicals throughout the facility. Over 700 Material Safety Data Sheets (MSDS) for chemicals are kept on file at AEI, and each division maintains copies of MSDSs that are currently in use. A review of specific container and drum storage observed, with comments, is presented below.

1. Five 40-gallon containers of "urethane foam resin" and four 40-gallon containers of "polymeric isocyanate" used in mold making are improperly stored on the floor without spill containment. (see Photo 9).

2. Small (less than one gallon) quantities of flammable materials are stored in a non-flammable cabinet in a storeroom.

3. The spray paint booth area contains stored quantities of methyl ethyl ketone (MEK), industrial finish containing phosphoric acid and toluene, and 1,1,1-trichloroethane. All the chemicals observed were stored above the floor but no spill containment was present. (see Photo 8).

4. The storage room for paints and enamels contained 34 five-gallon cans of enamel finish (see Photo 11). None of the paints were stored on pallets as advised by the Fire Code.

5. The alodine plating room stores and uses containers of perchlorethylene, phosphate, sodium metasilicate, sodium hydroxide, chromic acid, and nitric acid. A more in-depth investigation is required to determine the compatibility of these chemicals in close storage. (see Photo 7).

6. The second floor utilizes two rooms for film processing that store developing chemicals in flammable cabinets. The cabinets should be constructed of non-flammable materials.

7. Outdoor shelves on the south side of the property contain paints, thinners, adhesives, etc. These compounds also need to be stored in a non-flammable cabinet.

8. Approximately forty 55-gallon drums of various chemicals are stored in a fenced area at the south end of the property. A portion of the drums are elevated, and the rest are stored directly on the concrete. All the drums need to be elevated and/or stored on pallets. (see Photo 12).

9. Fourteen 55-gallon drums of hazardous waste are stored in a covered enclosure with a locked gate (see Photo 12). The waste is stored properly, however a curbed gutter for spill containment should be installed. The waste is disposed under manifest and the disposer is Rho-Chem, based in Inglewood, CA. (E.P.A.# CAD008364432). A review of manifests at AEI indicates the following wastes are disposed of: stoddard solvents, PCE, MEK, acetone, TCE, freon, thinner, oil, paint, varnish, kerosene, IPA, etc.

2.6.2 Bulk Storage Areas

A tour of the interior of the facility noted various bulk storage rooms and areas. The majority of storage areas, such as calibration instrumentation rooms, engineering labs, paper packaging storage, fabricated metal products storage were clean and orderly. A review of several bulk storage areas, with comments, is presented below.

1. Two separate areas of the facility stored banks of up to 48 charged batteries. The batteries contain lead and cadmium and should have spill containment located underneath them.

2. Bulk storage of general refuse is in the two dumpsters on the south end of the property. No problems were associated with the dumpsters.

3. Scrap metal is stored in a shed at the southeast corner of the property. A metals hauler, Leviton, disposes of the scrap metal on an as-needed basis.

2.6.3 Waste Treatment Areas/Lagoons

There were no lagoons or solid waste treatment areas observed on site.

2.6.4 Maintenance Shops/Machine Storage Areas

A maintenance shop is located at the rear of the building. Pressurized gas canisters are stored here behind chain ropes. Various abandoned pieces of equipment were stored along the rear of the building. Housekeeping practices should be enacted to remove unneeded items. Three propane-fueled forklifts are maintained on-site, as well as several manual-powered ones.

2.6.5 Open Ditches

In the southeast corner of the property a concrete-lined 4x5x3 foot "sump" exists. At present, it is completely enclosed and a 6-inch diameter outlet pipe drains into it. Mr. Monaco stated that he had no knowledge of the uses for the pipe or the contents that could drain through it, or if the recessed enclosure drained to the ground or sewer at one time. A monitoring well is located approximately six feet to the north of the sump and it is this well that has shown groundwater contamination. (see Photo 6). At a later date, Mr. Monaco stated that the outlet pipe was used to channel runoff from the scrap metal storage area.

2.6.6 Stained Areas

Other than the previously mentioned transformer, no stained areas were observed on site.

2.6.7 Vegetative Stress

The vegetation bordering the site on Valencia Drive consists of ornamental landscaping and tall trees. The vegetation appeared healthy and showed no signs of stress.

2.7 Flood Conditions

According to the Fullerton Engineering Department - Flood Insurance Map, the subject site is situated on a 500 year floodplain. The state does not require insurance on a structure located in a Zone X (formerly B), which is the designation for a 500 year floodplain.

2.8 Seismic Conditions

The project site, like all of Southern California, lies within a seismically active zone. Future movement of faults in close proximity to the site may generate ground motion within the project area. The potential for future movements of faults is assessed by the California Division of Mines and Geology Special Publication 42 (revised 1988). It defines an active fault as one which has had surface displacement within Holocene time (last 11,000 years). A potentially active fault is one whose surface displacement has occurred in Quaternary time (last 2 million years). The following is a list of the closest traces of the active and potentially active faults within a radius of 20 miles, whose future movement may affect the site:

Fault System	Miles & Direction from Site		Activity*
Whittier	NE	3.5	A
Raymond	NW	20	A
Newport/Inglewood	SW	15	A
Sierra Madre	N	18	A
Coyoto Hills	W	5	PA
Pelican Hill	S	17	PA
El Modeno	SE	11	PA

* A - Active Fault (Holocene)
* PA - Potentially Active Fault (Quaternary)

3.0 ADJACENT LAND USE

Manufacturing facilities, warehouse and distribution centers, and vacant land surround the subject site.

According to Mr. John Jepson of the Division of Oil and Gas, there are no known active or inactive oil fields, exploratory wells, or current drilling operations in the one-mile vicinity of the subject site.

4.0 SITE HISTORY AND RECORDS REVIEW

4.1 Prior Ownership and Usage

A chain-of-title was not provided by American Electronics. According to records in Mr. Monaco's possession, the property was originally in agricultural production, specifically citrus groves. American Electronics, Inc. initially purchased a vacant 20-acre parcel that included the subject site in March, 1955. AEI sold the property to Investors Industrial Properties, Inc. in May 1960. AEI repurchased the property in 1979, and has owned only the present 5.83 acres since then.

4.2 Aerial Photography

Based on a survey of the Fairchild Aerial Photography Collection (1927-1947), the site and surrounding area were originally used for agricultural production, mainly citrus groves (file report).

Photos dating from 1966-1986 were researched at Aerial Map Industries in Santa Ana, California. The subject site development for those years is identical to the development today. The surrounding areas show an increase in commercial development, and residential areas occupy land further north and west. No tanks or wells were observed in the surrounding area.

4.3 Regulatory Review

4.3.1 Federal

The National Priorities List dated February 1990 (provided by the U.S. Environmental Protection Agency) was researched and no properties within a one-mile radius of the site are listed.

The Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) "Site/Event Listing" dated August 15, 1990 (provided by the U.S. EPA Superfund Program), was researched and five sites were listed within a one-mile radius of the subject site. None of the listed sites are hydraulically upgradient from the subject site, therefore, they do not appear to be cause for environmental concern.

The Resource Conservation and Recovery Act (RCRA) list of hazardous waste generators dated March 2, 1990 lists forty (40) generators in the one-mile vicinity of the subject site. American Electronics was not listed, however, Mr. Monaco states the company is a small quantity generator. American Electronics' Environmental Protection Agency (EPA) identification number is CAD981390909, which is used on manifests for hazardous waste disposal.

4.3.2 State

The Leaking Underground Storage Tanks (LUGT) list - Region 8, dated April 1990, of the California Regional Water Quality Control Board (RWQCB) lists the subject site, American Electronics, Inc., as a site with a documented soil and groundwater contamination problem.

According to Mr. Carl Bernhardt, RWQCB inspector for the American Electronics site, the soil and groundwater has trichlorethane (TCE) at levels above the state action safe drinking water level of 5 parts per billion (ppb). The soil analysis showed 150 ppb TCE and the groundwater analysis showed 1500 ppb TCE. Three (3) groundwater monitoring wells were installed on the property, and a fourth monitoring well is planned for the southeast corner of the property as soon as RWQCB approval is obtained.

The present status of the subject site is RWQCB designated "5C -Pollution Characterization". The RWQCB is still trying to ascertain the vertical and lateral extent of the contaminant plume. The RWQCB believes the subject site to be a contributor to an overall low-level (10 - 20 ppb TCE) groundwater pollution problem in the area. According to Mr. Bernhardt, at one time a chemical storage area was located next to a sump on the southwest corner of the site. The RWQCB believes that chemical waste was disposed directly down this sump as contaminant levels of TCE in soil and groundwater are highest in this area. Mr. Monaco states that this area was never used for chemical waste disposal.

The LUGT list also lists fifteen (15) other sites within a one-mile radius of the subject site that have documented tank leaks. Due to their distance and location hydraulically downgradient from the subject site none appear to be cause for environmental concern at this time.

The Expenditure Plan for the Hazardous Substances Cleanup Bond Act of 1984, revised in January 1989, was researched and no sites within a one-mile radius of the subject site were listed.

The Toxic Pits Cleanup Act list of 3/29/90 (provided by the State of California Water Resources Control Board, Division of Water Quality) was researched and no properties within a one-mile radius of the subject site are listed.

The lists of Active, Inactive and Closed Landfills provided by the California Integrated Waste Management Board, dated February 2, 1990, were researched and no landfills within a one-mile radius of the site are listed.

The Hazardous Waste and Substances Sites List/Cortese (provided by the State of California Office of Planning and Research) dated May 1, 1989 was researched and eight (8) sites within a one-mile radius of the subject site were listed. All eight sites were also listed on the LUGT list and no additional information was given.

The Transfer, Storage and Disposal Facilities (TSD) Listing for California, a listing of facilities which store, and/or dispose, and/or transfer hazardous waste, is compiled by the EPA and was dated March 23, 1990. This list was researched and only the following downgradient site was listed in the one-mile vicinity of the subject site:

- Johnson Controls Globe Battery Division 1550 East Kimberely Avenue.

No additional information was given.

In summary, the subject site has a documented groundwater contamination problem. The RWQCB is the lead agency in charge of pollution characterization and eventual remediation for the site. At present, the consultant for AEI is determining groundwater flow direction to ascertain whether on-site contamination may have been caused by off-site sources. However, by employing a southwest regional flow direction no sites listed on the researched regulatory lists are upgradient and/or close enough to cause additional environmental concern at this time.

4.3.3 Local/Agency

The following interviews were conducted either in person, by telephone, or via correspondence:

According to records at the South Coast Air Quality Monitoring District (SCAQMD), the subject site has permits valid until August 1991 for emissions from the following equipment: 3 baking ovens, 3 spray booths for paints and solvents, 3 degreasers utilizing perchloroethylene and 1,1,1 trichloroethane, 1 dip tank, and 1 gasoline storage tank.

According to Mr. Satish Gulati of the California Department of Health Services (CaDHS) there is no file for the subject site listed in their database.

According to Inspector Julie Kunze of the Fullerton Fire Department Fire Prevention Section there is a record of an underground gasoline storage tank on the property. Further file information on the subject site has been requested; however, as of this date no information has been received. If relevant information exists in the file it will be sent as an addendum to this report.

According to Ms. Jean Marie Legacy at the Orange County - Environmental Health Department there is a file on the subject site. The existence of the file denotes the presence of underground tanks on the property. A request for the file has been made, however, as of this date no information has been received. If relevant information that may impact the site is submitted to ATEC, it will be sent as an addendum to this report.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

A physical site inspection of the American Electronics site found the facility to be generally clean and orderly. Improper storage of chemical compounds was noted in some areas of the facility, as well as a lack of spill containment for numerous stored liquids.

The AEI site is under orders from the RWQCB to characterize the groundwater contaminant plume believed to exist under the subject site. The consultant for AEI has installed groundwater monitoring wells on the facility property. Groundwater remediation may be required in the future.

5.2 Recommendations

ATEC recommends the following for the AEI facility:

- Better housekeeping practices throughout the facility.
- Proper hazardous material drum storage inside the facility.
- Chemicals should be stored off the floor with adequate spill containment.
- Continued monitoring of groundwater to assess water quality beneath the subject site, and Phase II work as mandated by the RWQCB.

6.0 QUALIFICATIONS

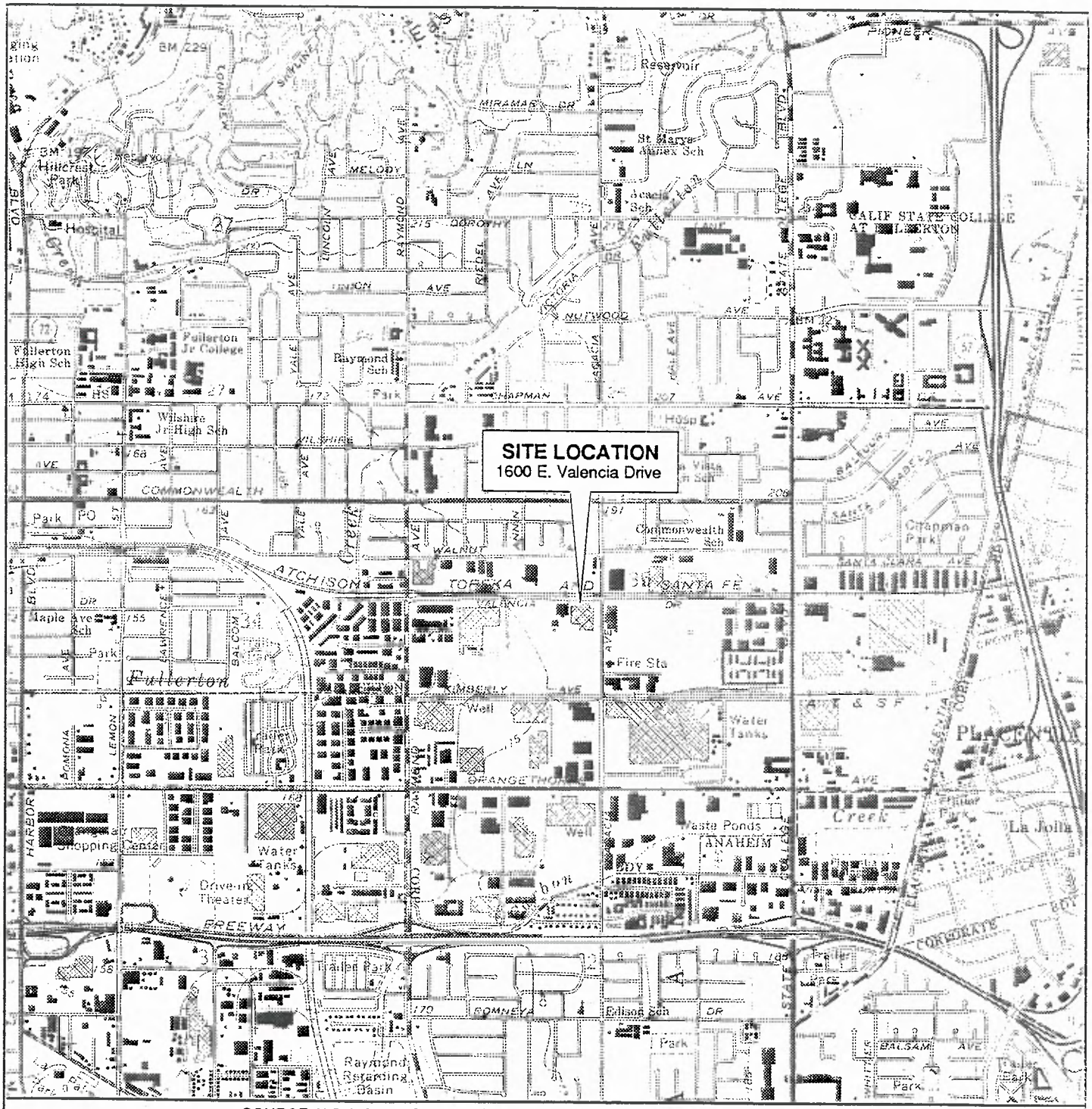
It should be noted that all surficial environmental assessments are inherently limited in the sense that conclusions are drawn and recommendations developed from information obtained from limited research and site evaluation. Subsurface conditions were not field investigated as part of this study and may differ from the conditions implied by the surficial observations. Additionally, the passage of time may result in a change in the environmental characteristics at this site and surrounding properties.

It must be noted that no investigation can absolutely rule out the existence of any hazardous materials at a given site. This assessment has been based upon prior site history and observable conditions and activities. Existing hazardous materials and contaminants can escape detection using these methods.

The work performed in conjunction with this assessment and the data developed are intended as a description of available information at the dates and location given. This report does not warrant against future operations or conditions, nor does it warrant against operations or conditions present of a type or at a location not investigated.

APPENDIX A

FIGURES



SOURCE: U.S.G.S. 7.5' Topographic Maps, Anaheim & La Habra, CA, Photorevised 1981

SCALE 1 : 24000

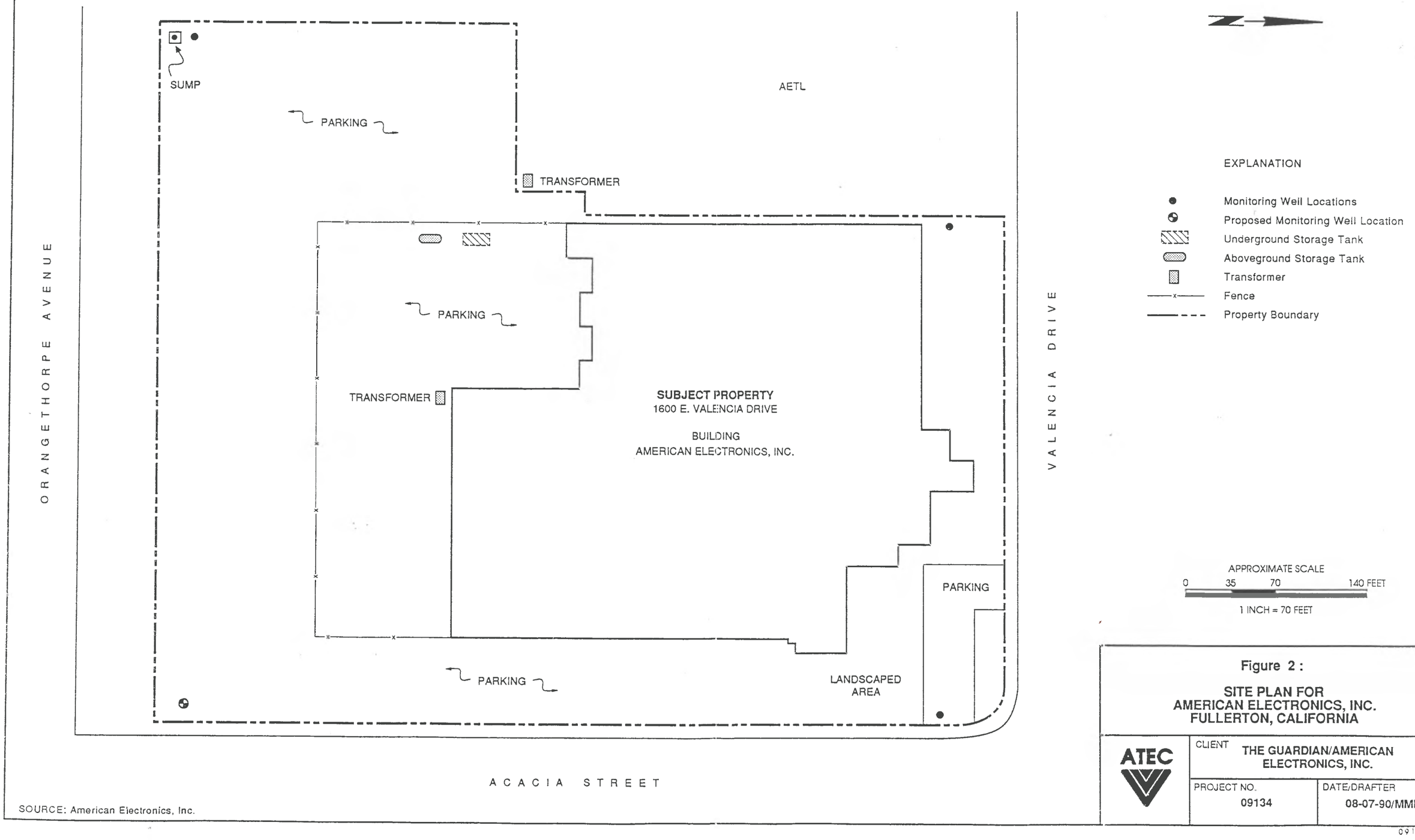
1/2 0 1/2 0 MILE

2000 1000 0 2000 4000 FEET

CONTOUR INTERVAL 5 & 20 FEET

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS INC.		ATEC	Figure 1: SITE VICINITY FULLERTON, CALIFORNIA
PROJECT NO. 09134	DATE 08/06/90		

080690 M.Keenan



SOURCE: American Electronics, Inc.

Figure 2 :

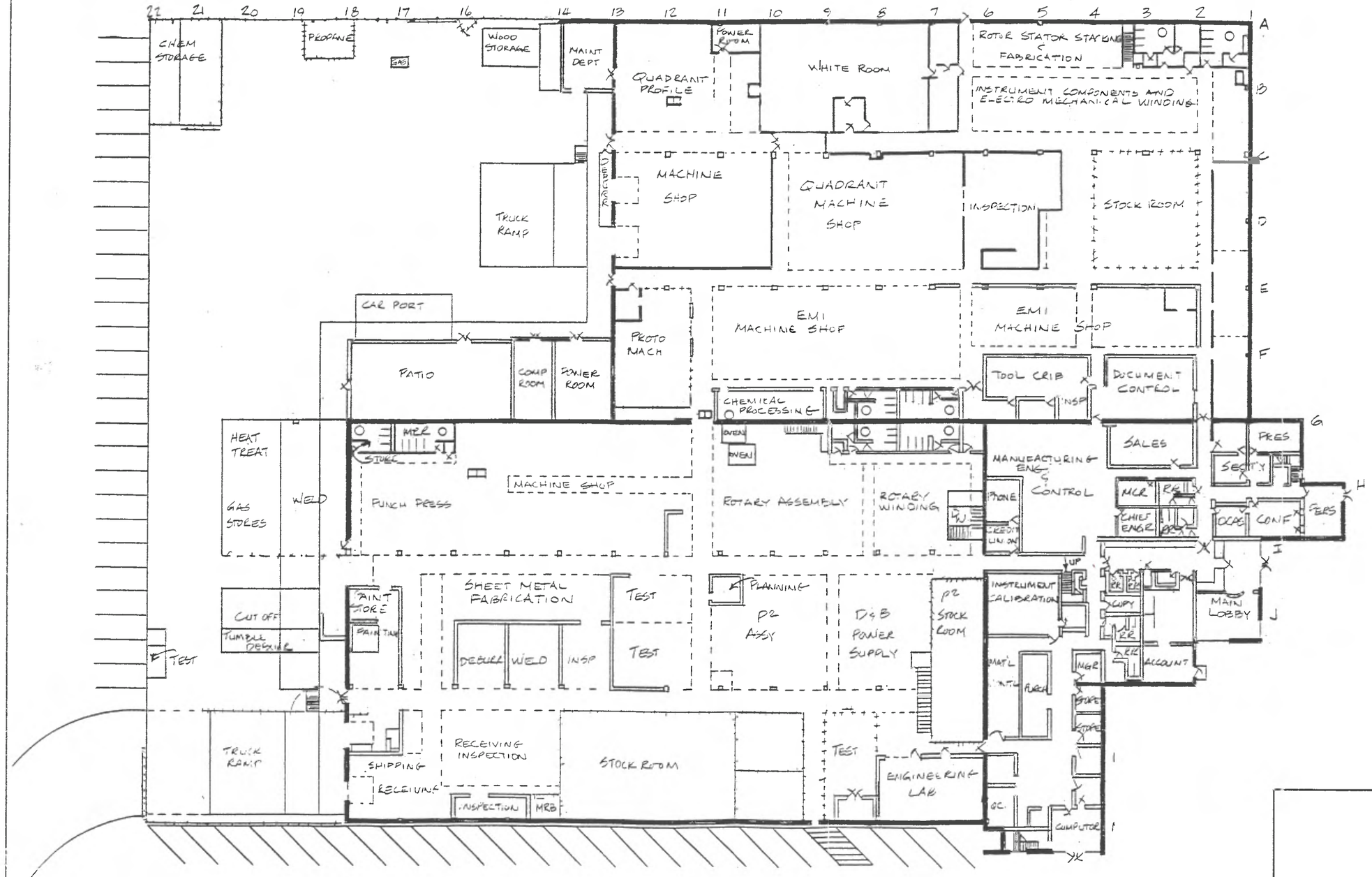
SITE PLAN FOR
AMERICAN ELECTRONICS, INC.
FULLERTON, CALIFORNIA

ATEC

CLIENT: THE GUARDIAN/AMERICAN ELECTRONICS, INC.

PROJECT NO.	DATE/DRAFTER
09134	08-07-90/MMK

09134-02



SCALE PROPORTIONAL

SOURCE: American Electronics, Inc.

Figure 3 :

SITE PLAN SHOWING THE FACILITY LAYOUT FULLERTON, CALIFORNIA

ATEC

CLIENT: THE GUARDIAN/AMERICAN ELECTRONICS, INC.

PROJECT NO.: 09134

DATE/DRAFTER: 08-06-90/MMK

APPENDIX B

PHOTOGRAPHIC DOCUMENTATION

PHOTO 1: VIEW OF AMERICAN ELECTONICS, INC. FRONTING VALENCIA DRIVE, LOOKING SOUTH.

PHOTO 2: VIEW OF INTERIOR OF AMERICAN ELECTRONICS, INC. FACILITY.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 1: Photos 1 & 2
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 3: VIEW OF LEAKY TRANSFORMER.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 2: Photo 3
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 4: VIEW OF THREE POLE-MOUNTED TRANSFORMERS IN REAR PARKING LOT.

PHOTO 5: VIEW OF ABOVEGROUND PROPANE TANK (FOREGROUND), AND UNDERGROUND GASOLINE TANK AND PUMP (BACKGROUND).

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 3: Photos 4 & 5
PROJECT NO.	DATE		
09134	08/07/90		

080790/M.Keenan

PHOTO 6: VIEW OF MONITORING WELL AND "SUMP" ON SOUTHEAST CORNER OF PROPERTY.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 4: Photo 6
PROJECT NO.	DATE		
09134	08/07/90		

080790/M.Keenan

PHOTO 7: VIEW OF ALODINE PLATING ROOM; NOTE EXHAUST HOOD AT FAR END.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 5: Photo 7
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 8: VIEW OF PAINT SPRAY BOOTH WITH FILTER SCREENS.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 6: Photo 8
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 9: VIEW OF HAZARDOUS CHEMICALS USED IN MOLD-MAKING STORED ON FLOOR.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 7: Photo 9
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

PHOTO 10: VIEW OF TYPICAL EXHAUST HOOD; NOTE PERMIT ON RIGHT SIDE.

PROJECT NAME			
THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 8: Photo 10
PROJECT NO.	DATE		
09134	08/07/90		

080790/M.Keenan

PHOTO 11: VIEW OF PAINT STORAGE ROOM.

PHOTO 12: VIEW OF CHEMICAL (RIGHT) AND HAZARDOUS WASTE (LEFT) STORAGE ON SOUTH END OF PROPERTY.

PROJECT NAME THE GUARDIAN/AMERICAN ELECTRONICS, INC.		ATEC	PHOTOLOG 9: Photos 11 & 12
PROJECT NO. 09134	DATE 08/07/90		

080790/M.Keenan

APPENDIX C

CONTACTS AND REFERENCES

APPENDIX C
CONTACTS AND REFERENCES

Documents:

- National Priorities List, February 1990; by the U.S. EPA Region IX.
- CERCLIS Site/Event Listing, August 5, 1989; by the U.S. EPA Superfund Program.
- Hazardous Waste and/or Substance Sites List, January, 1989; by the State of California Office of Planning and Research.
- Expenditure Plan for the Hazardous Substances Bond Act of 1984, revised in 1989; by the Department of Health Services Toxic Substances Control Division.
- Toxic Pits Cleanup Act List, November 18, 1989; by the State of California State Water Resources Control Board Division of Water Quality.
- Lists of Active, Inactive and Closed Landfills, February 2, 1990; by the California Integrated Waste Management Board.
- Santa Ana Regional Water Quality Control Board Underground Storage Tank List Database, April 9, 1990; Regional Water Quality Control Board.
- Transfer, Storage, and Disposal Facilities Listing for California, March 23, 1990; U. S. EPA.
- Resource Conservation and Recovery Act List, March 2, 1990, by the U.S. EPA.
- Must for USTs, Office of Underground Storage Tanks, U.S. EPA, September 1988.

Maps:

- Thomas Guide, Los Angeles and Orange County, p.6, 1988.
- Fault Map of California, Compiled by Charles Jennings, Division of Mines and Geology, 1988.
- USGS Anaheim Quadrangle, Orange County, photorevised 1981.
- Groundwater Contour Map, Orange County Water District, November 1, 1989.

APPENDIX C (continued)

- Fairchild Aerial Photographic Collection, Geology Department, Whittier College, Whittier, CA.

  Dates Flown: 1927-1947

- Aerial Map Industries, 2012 South Main Street, Santa Ana, CA.

  Dates Flown: 1966-1986

Telephone Communications:

- Jean-Marie Legacy, Orange County Environmental Health Department, Santa Ana, CA.
- John Jepson, Division of Oil and Gas, Long Beach, CA.
- Satish Gulati, California Department of Health Services, Burbank, CA.
- Julie Kunze, Fullerton Fire Department - Fire Prevention Section, Fullerton, CA.

Interviews On-Site:

- Dominick Monaco, American Electronics, Inc., Fullerton, CA.
- Don Wall, American Electronics, Inc., Fullerton, CA.
- Valdmir Konovalov, American Electronics, Inc., Fullerton, CA.

AEI® AMERICAN ELECTRONICS, INC.
1600 E. Valencia Drive, Fullerton, Calif. 92631
Phone (714) 871-3020 TWX 910-592-1256

September 19, 1990

Mr. Ray Lewis
Ray E. Lewis Consulting Engineers, Inc.
459 Holly Street
Laguna Beach, CA 92651

Dear Ray:

Enclosed kindly find five pages excerpted from a Phase I Environmental Site Accessment on our property prepared by ATEC Associates, Inc., located in Indianapolis, Indiana, for the Guardian Insurance Company. The pages I have copied you with contain what I believe to be a number of inaccurate statements; and I thought you, therefore, might desire to review the comments prior to your meeting with the Regional Water Quality Control Board Thursday afternoon, September 20th at 1:30.

Should you have any questions or care to discuss any part of the material forwarded, please do not hesitate to contact me.

Sincerely,

AMERICAN ELECTRONICS, INC.

Dick

R. F. Holland
President

RFH:sla

Enclosures

2.1 General Site Conditions

The site is roughly L-shaped and the single, 2-story building comprises approximately 100,000 square feet (Figure 2). The site is graded flat. The property is zoned MP100-Industrial Park, as defined by the City of Fullerton Planning Department.

The site is fully developed. The property consists of one building constructed in 1960. The tenant and principal owner of the property since 1960 has been American Electronics, Inc. The front and rear portions of the site are uncovered parking areas. The front parking lot was repaved with new asphalt on the day of the site visit. The asphalt in the rear parking areas is badly cracked and is also in need of repaving. The entrance to the building is landscaped with plants and large trees. Dumpsters are located in the rear parking lot and disposed of by MG Disposal, Fullerton, CA.

According to the Orange County Water District-Groundwater Contour Map, depth to groundwater at the subject site is approximately 130 feet and the regional flow direction is southwest. However, various agencies and consultants differ in their assessment of site specific groundwater flow direction for the area. The Regional Water Quality Control Board (RWQCB) maintains that several documented sites in the area have a northwest flow direction. Mr. Ray Lewis of Ray Lewis Engineering, Laguna Beach, CA reports that his firm is employing electrostatic sounding of three on-site monitoring wells in order to determine exact groundwater flow direction beneath AEI. Mr. Lewis states this information will be available on or around August 17, 1990.

2.2 Tanks

2.2.1 Underground Storage Tanks

One underground tank exists under the parking lot on the south side of the subject site. It was installed in the late 1970's to fuel company vehicles. The tank is permitted with the Orange County Health Care Agency, #1188-1, and the permit is valid until September 6, 1994. The tank and the pump are also permitted with the South Coast Air Quality Monitoring District (#M84912) and the permit is valid until July, 1991. According to Mr. Monaco, the tank's capacity is approximately 7500 gallons and is constructed of fiberglass. It is integrity-tested yearly and is also metered and checked via inventory

2.6.3 Waste Treatment Areas/Lagoons

There were no lagoons or solid waste treatment areas observed on site.

2.6.4 Maintenance Shops/Machine Storage Areas

A maintenance shop is located at the rear of the building. Pressurized gas canisters are stored here behind chain ropes. Various abandoned pieces of equipment were stored along the rear of the building. Housekeeping practices should be enacted to remove unneeded items. Three propane-fueled forklifts are maintained on-site, as well as several manual-powered ones.

2.6.5 Open Ditches

In the southeast corner of the property a concrete-lined 4x5x3 foot "sump" exists. At present, it is completely enclosed and a 6-inch diameter outlet pipe drains into it. Mr. Monaco stated that he had no knowledge of the uses for the pipe or the contents that could drain through it, or if the recessed enclosure drained to the ground or sewer at one time. A monitoring well is located approximately six feet to the north of the sump and it is this well that has shown groundwater contamination. (see Photo 6). At a later date, Mr. Monaco stated that the outlet pipe was used to channel runoff from the scrap metal storage area.

2.6.6 Stained Areas

Other than the previously mentioned transformer, no stained areas were observed on site.

The present status of the subject site is RWQCB designated "5C -Pollution Characterization". The RWQCB is still trying to ascertain the vertical and lateral extent of the contaminant plume. The RWQCB believes the subject site to be a contributor to an overall low-level (10 - 20 ppb TCE) groundwater pollution problem in the area. According to Mr. Bernhardt, at one time a chemical storage area was located next to a sump on the southwest corner of the site. The RWQCB believes that chemical waste was disposed directly down this sump as contaminant levels of TCE in soil and groundwater are highest in this area. Mr. Monaco states that this area was never used for chemical waste disposal.

The LUGT list also lists fifteen (15) other sites within a one-mile radius of the subject site that have documented tank leaks. Due to their distance and location hydraulically downgradient from the subject site none appear to be cause for environmental concern at this time.

The Expenditure Plan for the Hazardous Substances Cleanup Bond Act of 1984, revised in January 1989, was researched and no sites within a one-mile radius of the subject site were listed.

The Toxic Pits Cleanup Act list of 3/29/90 (provided by the State of California Water Resources Control Board, Division of Water Quality) was researched and no properties within a one-mile radius of the subject site are listed.

The lists of Active, Inactive and Closed Landfills provided by the California Integrated Waste Management Board, dated February 2, 1990, were researched and no landfills within a one-mile radius of the site are listed.

The Hazardous Waste and Substances Sites List/Cortese (provided by the State of California Office of Planning and Research) dated May 1, 1989 was researched and eight (8) sites within a one-mile radius of the subject site were listed. All eight sites were also listed on the LUGT list and no additional information was given.

According to Inspector Julie Kunze of the Fullerton Fire Department Fire Prevention Section there is a record of an underground gasoline storage tank on the property. Further file information on the subject site has been requested; however, as of this date no information has been received. If relevant information exists in the file it will be sent as an addendum to this report.

According to Ms. Jean Marie Legacy at the Orange County - Environmental Health Department there is a file on the subject site. The existence of the file denotes the presence of underground tanks on the property. A request for the file has been made, however, as of this date no information has been received. If relevant information that may impact the site is submitted to ATEC, it will be sent as an addendum to this report.

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5.1 Conclusions

A physical site inspection of the American Electronics site found the facility to be generally clean and orderly. Improper storage of chemical compounds was noted in some areas of the facility, as well as a lack of spill containment for numerous stored liquids.

The AEI site is under orders from the RWQCB to characterize the groundwater contaminant plume believed to exist under the subject site. The consultant for AEI has installed groundwater monitoring wells on the facility property. Groundwater remediation may be required in the future.

5.2 Recommendations

ATEC recommends the following for the AEI facility:

- Better housekeeping practices throughout the facility.
- Proper hazardous material drum storage inside the facility.
- Chemicals should be stored off the floor with adequate spill containment.
- Continued monitoring of groundwater to assess water quality beneath the subject site, and Phase II work as mandated by the RWQCB.

ATC ENVIRONMENTAL INC.

11 December 1996
14240.0002

American Electronics, Inc.
1600 East Valencia Drive
Fullerton, California 92631

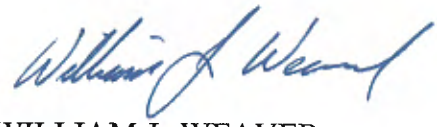
Attention: Mr. Richard Holland

SUBJECT: REPORT TRANSMITTAL
ENVIRONMENTAL SITE ASSESSMENT
AMERICAN ELECTRONICS, INC.
FULLERTON, CALIFORNIA

Dear Mr. Holland:

Enclosed please find two (2) copies of the above-referenced report for your records. If you have any questions regarding this report, please call me at your convenience.

Sincerely,
ATC ENVIRONMENTAL INC.



WILLIAM J. WEAVER
Project Manager

cc. Mr. Mark Cousineau, Hazard Management Consulting, Inc.
Dave Peterson, Esq., Hill Wynne Troop & Meisinger

Enclosure

17321 Irvine Blvd. • Tustin, CA 92780 • (714) 734-0303 • FAX (714) 734-0510

11 December 1996

Prepared for:

AMERICAN ELECTRONICS, INC.
1600 East Valencia Drive
Fullerton, California

by:

ATC ENVIRONMENTAL INC.
17321 Irvine Boulevard
Tustin, California 92680
(714) 734-0303

ENVIRONMENTAL SITE ASSESSMENT FOR AMERICAN ELECTRONICS, INC. 1600 EAST VALENCIA DRIVE FULLERTON, CALIFORNIA

DANA E. WILLIAMS
Certified Asbestos Consultant
#93-1168

WILLIAM J. WEAVER
Project Manager/Geologist

JANET HOLTZ, R.E.A.
Senior Project Manager

Project No. 14240.0002

TABLE OF CONTENTS

		Page
1.0	INTRODUCTION	1
2.0	OBJECTIVE	1
3.0	SCOPE	1
4.0	LIMITATIONS	3
5.0	SITE REVIEW	4
5.1	Site Setting	4
5.2	Site and Site Vicinity Reconnaissance	4
5.3	Hydrogeologic Setting	6
6.0	HISTORICAL REVIEW	6
6.1	Permits	6
6.2	Sanborn Fire Insurance Maps	7
6.3	Aerial Photographs	7
6.4	Chain-of-Title	7
7.0	AGENCY LIST REVIEW	8
7.1	Federal NPL Superfund Sites	8
7.2	Federal CERCLIS List	8
7.3	EPA RCRA TSD Facilities List	9
7.4	EPA RCRA Generators List	9
7.5	EPA ERNS List	9
7.6	Cal-EPA Department of Toxic Substances Control State Superfund List	9
7.7	Cal-Sites	10
7.8	Landfills	10
7.9	Underground Storage Tanks	10
7.10	Oil and Gas	11

TABLE OF CONTENTS (Continued)

		Page
8.0	REPORTS REVIEW	11
9.0	DISCUSSION	15
9.1	On-Site Potential Sources	15
9.2	Off-Site Potential Sources	17
10.0	CONCLUSION	17
11.0	RECOMMENDATION	17
12.0	REFERENCES	18

FIGURES

1 Site Vicinity Map
2 Site Plan
3 Color Photographs of the Site

APPENDICES

A Chain-of-Title Report
B Report Provided by VISTA Environmental Information, Inc.
C Likelihood Statements

ENVIRONMENTAL SITE ASSESSMENT
FOR AMERICAN ELECTRONICS, INC.
1600 EAST VALENCIA DRIVE
FULLERTON, CALIFORNIA

1.0 INTRODUCTION

This report summarizes the results of an environmental site assessment (ESA) conducted for the American Electronics, Inc. property located at 1600 East Valencia Drive (site) in Fullerton, California (Figure 1). The assessment was conducted by ATC Environmental Inc. in response to the request of Mr. Richard Holland and in general accordance with the contract dated 4 November 1996 between American Electronics, Inc. and ATC Environmental Inc. It is the understanding of ATC Environmental Inc. that this work was conducted in connection with a financial transaction.

2.0 OBJECTIVE

The objective of the assessment described in this report was to identify to the extent feasible, pursuant to the processes prescribed herein, the presence of Recognized Environmental Conditions (RECs) as defined in the American Society of Testing and Materials (ASTM) Standard E 1527-94 and Comerica Bank Guidelines (March, 1996).

3.0 SCOPE

The scope of services used to meet the objective was in general accordance with ASTM Standard E 1527-94 and included review of the following readily available information sources:

- Task 1: Site and Site Vicinity
  - Discussions with personnel familiar with the site facility and review of site facility drawings;
  - A site reconnaissance to look for evidence of present and/or past operations that use or may have used potentially hazardous materials; and
  - A site vicinity reconnaissance to compile a list of companies/businesses in the immediate site vicinity that are reported to use, or appear to use or produce, hazardous substances that in our judgment may impact the site.
- Task 2: Historical
  - Fifty year Chain-of-Title;

- City of Fullerton Department of Building and Safety records regarding the site;

- Sanborn Fire Insurance Maps of the site; and

- Historical aerial photographs from 1953 until 1992. The review was intended to provide information on historical land use as it relates to potential sources of hazardous waste (e.g., landfills, sumps, gas stations that are no longer present, or facility changes).

- Task 3: Agency Data

  For the site and a 1-mile radius of the site:

  - Lists maintained by the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control, Cal-Sites Annual Work Plan (AWP), and U.S. Environmental Protection Agency (EPA) National Priorities List (NPL) regarding State and Federal Superfund sites in the site vicinity;

  - Cal-Sites list (formerly the Abandoned Sites Program Information System [ASPIS]); and

  - EPA Resource Conservation and Recovery Information System (RCRIS), Resource Conservation and Recovery Act (RCRA) Treatment, Storage, and Disposal (TSD) facilities list.

  For the site and a 0.5-mile radius of the site:

  - State of California Water Resources Control Board (SWRCB) and/or California Regional Water Quality Control Board (RWQCB) lists regarding unauthorized releases from underground storage tanks (USTs);

  - California Integrated Waste Management Board (CIWMB) and/or County information regarding active or abandoned landfills, proposed landfills, and transfer stations;

  - Oil and gas records regarding present or past oil field activities; and

  - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) list.

For the site and facilities located in the immediate site vicinity:

- State Water Resources Control Board (SWRCB) UST lists; and
- EPA RCRA Facilities and Generators list.

For the site:

- EPA Emergency Response Notification Systems (ERNS) list; and
- Information regarding the hydrogeology of the site and/or site vicinity using selected references.

- Task 4: Data Evaluation, Report Compilation, and Management
  - After completion of Tasks 1 through 3, the data were evaluated and this summary report was prepared.

4.0 LIMITATIONS

Certain information contained in this report may have been rightfully provided to ATC Environmental Inc. by third parties or other sources. ATC Environmental Inc. does not make any warranties or representations, whether expressed or implied, regarding the accuracy of such information, and shall not be held accountable or responsible in the event that any inaccuracies are present. No limitations to data collection were encountered.

The term "hazardous substance" is used here in general accordance with its usage as defined in the following document:

- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended; and

As specified in the ASTM Standard E 1527-94 "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process," the term REC is used to describe environmental conditions or impacts warranting further inquiry. An REC is defined by ASTM as the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The terms "material," "waste," and "substances" are used interchangeably, and no legal distinction is implied between the terms as used herein. The words "impact" or "impacted" are used here to mean the effect or result of a release of a hazardous substance that could be judged an REC.

5.0 SITE REVIEW

The following terms are used in this report:

- "Site" refers to the property within the approximate boundaries shown in Figures 1 and 2 and described in Subsection 5.1;
- "Immediate site vicinity" refers to properties immediately adjacent to the site that share a common boundary with the site; and
- "Site vicinity" refers to the area within approximately a 1-mile radius of the site.

5.1 Site Setting

The site comprises approximately 6.9 acres of developed light industrial land used for electronic components manufacturing (Figure 2). The site is bounded by Valencia Drive to the north; Yokohama Tire to the south; Acacia Street to the east; and NTS to the west (Figure 2). Site boundary information was obtained from a site plan prepared by Applied Geosciences Inc. and from visual observations made during the site reconnaissance.

5.2 Site and Site Vicinity Reconnaissance

5.2.1 Site Reconnaissance - A site reconnaissance was conducted on 11 November 1996 by personnel from ATC Environmental Inc. Color photographs of the site are presented in Figure 3. At the time of the site reconnaissance, the site comprised a two-story building, which was reported to be utilized for the assembly of electronic components including cameras, satellite equipment, and electric motors (Konovalov, 1996).

The northeastern portion of the building was reported to be generally utilized for office purposes, the western portion of the building is utilized for machining, assembly, and testing of electronic equipment, and the western portion of the building is unoccupied (Konovalov, 1996). Machining equipment (such as milling machines, drill presses, and lathes) were noted in the western portion of the building. Potentially hazardous materials reported to be utilized in this area included cutting oil, lubrication oil, kerosene, methyl ethyl ketone (MEK), perchloroethane (PCA), acetone, isopropyl alcohol, and stoddard solvent (Konovalov, 1996). The solvents were reported to be utilized to remove oils and other debris from recently machined metal parts. Only minor surface staining was noted at the base of the machining equipment and the concrete flooring was noted to be in good condition.

In addition, AEI operates a paint booth in the southern portion of the building. Used filters from the booth were reported to be stored in 55-gallon drums and transported off-site for disposal (Konovalov, 1996). AEI also conducts on-site photograph development activities. A dark room was noted in the central portion of the building. The developer was reported to be equipped with a silver recovery unit. The waste photographic fluids were noted to be stored in a labeled plastic container. Approximately five gallons of developer and fixer were noted in the dark room. Potentially hazardous materials and waste are stored in two buildings located on the southern portion of the site. Both buildings were noted to have an elevated plastic grate floor and were equipped with secondary containment. Potentially hazardous materials noted to be stored in one building in 55-gallon drums included MEK, kerosene, PCA, acetone, stoddard solvent, isopropyl alcohol, cutting oil, and lubrication oil. Potentially hazardous waste noted to be stored in the adjacent building in labeled 55-gallon metal drums included oil, a mixture of MEK, acetone, and alcohol, fixer, developer, and paint filters. The waste was reported to be transported off-site for disposal under manifest by Safety Kleen and Pacific Environmental (Konovalov, 1996). No evidence of surface staining was noted in the vicinity of the two storage buildings.

A UST was formerly located near the south-central portion of the site (Figure 2). The 6,000 gallon fiberglass gasoline UST was reported to have been installed in the 1970's and removed in 1994 (Konovalov, 1996). Impacted soil in the vicinity of the UST was consequently transported off-site for disposal. The site has since been granted closure by the Fullerton Fire Department (Konovalov, 1996). Please refer to Subsection 7.9.2 for further information regarding the UST.

A vapor extraction system (VES), which is no longer in use, was noted on the southwestern portion of the site (Figure 2). The VES was reported to have been utilized to remediate impacted soils in the vicinity of a former chemical storage area. Please refer to Section 8.0 for further information regarding the VES. The area is currently used for equipment storage. A small sump, reported to be inactive, was noted to be adjacent to the former chemical storage area.

The facility exterior was observed to consist predominantly of paved parking areas. Surficial drainage of the facility exterior generally flows to the southern portion of the lot. Three pole-mounted transformers were observed in the southern parking area. According to Southern California Edison (SCE), they are unlikely to contain polychlorinated biphenyls (PCBs). Water is supplied to the site by the City of Fullerton.

A visual inspection of potential asbestos containing materials (ACMs) was also conducted during the site reconnaissance. Readily accessible interior finishing materials noted during the site reconnaissance included floor tile, sheet vinyl, ceiling tiles, and wall materials. These materials were generally noted to be in an undamaged condition. Please refer to Section 8.0 for a summary of a previous asbestos survey conducted at the site.

The site facility interior and exterior appeared to be generally maintained in a neat and orderly manner with what appeared to be good housekeeping practices. While this type of appearance does not necessarily preclude RECs, it can provide an indication of facility operations.

5.2.2 Site Vicinity Reconnaissance - A site vicinity reconnaissance was conducted by personnel from ATC Environmental Inc. on 11 November 1996. The site vicinity was observed to consist of light industrial properties.

5.3 Hydrogeologic Setting

The site is located in the northeastern portion of the Orange County Coastal Plain (Department of Water Resources [DWR], 1967). The Coastal Plain is composed of sedimentary strata, up to approximately 20,000 feet thick, overlying a deep northwest-trending structural depression (syncline) composed of igneous and metasedimentary rocks (DWR, 1967). The sediment overlying the syncline consist of marine and nonmarine sedimentary strata dating from Recent to Miocene age. The rapid deposition rate, combined with folding and faulting of the area, has produced lateral variations in the thickness and lithologies encountered throughout the subsurface of the Coastal Plain. Water-bearing strata generally exist above a depth of approximately 4,000 feet, and predominantly consist of unconsolidated stream channel, marine terrace, and alluvial deposits of Pleistocene to Recent age (DWR, 1967).

The site lies within the recharge area of the Lower Santa Ana River Basin (DWR, 1967). The recharge area encompasses approximately 30 square miles in the northern portion of the Lower Santa Ana River Basin (DWR, 1967). The basin is approximately 25 miles long and 20 miles wide, and is bounded by the Puente Hills to the north, the Santa Ana Mountains to the east, the San Joaquin Hills to the south, and the Los Angeles County Line to the west. Water-bearing sediments (aquifers) in the site vicinity consist of relatively thin discontinuous layers of sands and gravels with varying amounts of interbedded sandy silts, silts, and clays. The uppermost aquifer in the site vicinity is the Talbert aquifer. The Talbert aquifer intersects the ground surface in the site vicinity and appears to be unconfined in this area (DWR, 1967).

As part of a separate scope of work, ATC conducted groundwater monitoring at the site during November 1996. The depth-to-groundwater was measured at approximately 112 to 117 feet BGS with a flow direction to the west/southwest (ATC, 1996).

6.0 HISTORICAL REVIEW

6.1 Permits

Building permits for the site were reviewed at the City of Fullerton Department of Building and Safety. Original permits for the construction of the current American Electronics, Inc. structure were not on file. Various tenant improvements, lawn work, fire sprinklers, and seismic calculation documents were on file. In addition, no information regarding installation dates of the water utilities was on-file.

6.2 Sanborn Fire Insurance Maps

A search for Sanborn Fire Insurance Maps for the site and immediate site vicinity was conducted through Sanborn Mapping and Geographic Information Service (Sanborn). Sanborn reported that maps were not available for the site.

6.3 Aerial Photographs

Readily available aerial photographs to assess the historical land use and development of the site and site vicinity were obtained for review from Rupp Aerial Photography, Corona, California. The flight dates of the photographs provided for review were as follows:

- 30 May 1953
- 28 February 1963
- 30 October 1972
- 3 June 1988
- 11 January 1992

Obvious indicators of potential sources of hazardous waste from land use, such as apparent aboveground tank areas, ponds, pits, sumps, landfills, and heavy-industry or oil-field-related developments, were not observed at the site.

Interpretation of the aerial photographs indicated that the site and properties immediately to the south and west appeared to be used for agricultural purposes, Valencia Drive was immediately to the north, and Acacia Street was immediately to the east in 1953. The site appeared approximately as it appeared during the site reconnaissance from at least 1963 until 1992. The 1963 and 1972 aerial photographs indicated the property immediately to the south to be agricultural, the current NTS facility immediately to the west, Valencia Drive immediately to the north, and Acacia Street immediately to the east. The 1988 and 1992 aerial photographs indicated the site and immediate site vicinity approximately as it appeared during the site reconnaissance.

6.4 Chain-of-Title

A 50-year chain-of-title report was requested from Ameristar of Dallas, Texas (Appendix A). The document included plats, grant and quitclaim deeds covering the period from 1918 to 1979 and are summarized below:

Date	Document	Grantor	Grantee
3/15/18	Grant Deed	Albert Heineeke et ux Minnie	Antone Chaistensen
4/21/55	Grant Deed	Antone Chaistensen	American Electronics, Inc.

Date	Document	Grantor	Grantee
5/11/61	Grant Deed	American Electronics, Inc.	Western Medical Centers Management Co.
12/19/61	Grant Deed	Western Medical Centers Management Co.	J.C. Copeland, trustee
1/1/64	Grant Deed	J.C. Copeland, trustee	Investors International Properties, Inc.
4/9/79	Grant Deed	Investors International Properties, Inc.	Coldwell Banker & Company
4/9/79	Grant Deed	Coldwell Banker & Company	American Electronics, Inc.

The title documents gave no indication of potentially adverse site usage or conditions, such as industrial activities, petroleum exploration or sales, pipeline easements, or mineral leases.

7.0 AGENCY LIST REVIEW

To conduct some parts of the regulatory review for this environmental assessment, the services of VISTA Environmental Information, Inc. (VISTA), were used and their report was provided to ATC Environmental Inc. Appendix B presents the report that was provided by VISTA and is the basis for most of the following agency information.

In the following sections, only facilities that are located in the immediate site vicinity, or those that are located upgradient (but are not necessarily located near the site) are discussed. These facilities were selected based on the assumption that hazardous material released to the subsurface generally does not migrate laterally within the soil for a substantial distance, but that hazardous material can migrate in the groundwater in a generally downgradient direction; however, there are limitations to this interpretation.

7.1 Federal NPL Superfund Sites: Distance Searched - 1.0 mile

Federal NPL Superfund sites are facilities that have been assigned the highest priority for cleanup by EPA pursuant to the EPA Hazard Ranking System. According to these records, no facilities are located within the search area.

7.2 Federal CERCLIS List: Distance Searched - 0.5 mile

The CERCLIS list is an EPA-maintained database of potential hazardous waste sites that have come to the attention of EPA, which discovers these sites through citizen reports, routine inspections of hazardous waste generators and treatment, storage, and disposal facilities, and

reporting requirements. Sites on the CERCLIS list are not necessarily hazardous waste sites, but rather sites that EPA plans to investigate in the future or has already investigated. According to EPA, three facilities are located within the search area; none of which are located potentially upgradient from the site. The nearest facility to the site, designated "Globe-Union," is located approximately 0.2 mile to the south of and potentially crossgradient from the site. The second facility, designated "PCA Metal Finishing," is located approximately 0.28 mile to the southeast of and potentially crossgradient from the site. The third facility, designated "Western Roto Engravers Inc." is located approximately 0.3 mile to the west of and potentially downgradient from the site. According to the records, no further regulatory action has been required for these three facilities.

7.3 EPA RCRA TSD Facilities List: Distance Searched - 1.0 mile

The RCRA TSD list is a database maintained by EPA for facilities at which treatment, storage and/or disposal of hazardous waste takes place, as defined and regulated by RCRA. According to the database, one facility is located within the search area. The facility, designated "Johnson Controls Globe Battery," is located approximately 0.2 mile the south of and potentially crossgradient from the site. According to the records, no violations have been issued to this facility.

7.4 EPA RCRA Generators List: Distance Searched - Site and Immediate Site Vicinity

The RCRA generators list is a database maintained by EPA of those facilities, entities, or persons that generate hazardous waste as defined and regulated by RCRA. According to information contained in the RCRA generators list, the site is listed as a large quantity generator. During the site reconnaissance, it was reported that waste solvents, photographic material, and paint booth filters are transported off-site for disposal under manifest (Konovalov, 1996). Refer back to Subsection 5.2.1 for site specific information. No other facilities are listed within the immediate site vicinity.

7.5 EPA ERNS List: Distance Searched - Site Only

The ERNS list is the EPA list of reported CERCLA hazardous substance releases or spills in quantities greater than the reportable quantity, as maintained at the National Response Center. Notification requirements for such releases or spills are codified in 40 CFR Parts 302 and 355. According to the ERNS list, no facilities are located within the search area.

7.6 Cal-EPA Department of Toxic Substances Control State Superfund List, AWP: Distance Searched - 1.0 mile

In California there is a State Superfund program, in addition to the Federal Superfund program, which is administered by Cal-EPA. According to these records, no facilities are located within the search area.

7.7 Cal-Sites: Distance Searched - 1.0 mile

The Cal-Sites (formerly ASPIS) is a Cal-EPA-maintained database of active and inactive cases of the site evaluation and/or site survey programs. This database is used as a tracking system for present or former sites by Cal-EPA. According to the information, three facilities are located within the search area; none of which are located in the immediate site vicinity or potentially upgradient from the site.

7.8 Landfills: Distance Searched - 0.5 mile

CIWMB maintains a list of active and inactive landfills and transfer stations in California. Generally, CIWMB learns of locations of landfills through permit applications and from local enforcement agencies. The CIWMB list indicated that no facilities are located within the search area.

7.9 Underground Storage Tanks

USTs can be sources of hazardous materials that could potentially impact the soil around the tanks and the underlying groundwater if leakage of the contents of the tanks or associated piping were to occur. Information concerning permitted USTs in the immediate site vicinity was obtained from State Water Resources Control Board (SWRCB).

7.9.1 Permitted USTs: Distance Searched - Site and Immediate Site Vicinity - SWRCB is the State agency that implements regulations concerning the permitting and operation of USTs in the site vicinity. SWRCB records regarding permitted USTs were reviewed by personnel from ATC Environmental Inc. The records indicated that a 6,000 gallon UST was located on-site. The UST was reported to have been used for fueling private vehicles. Refer to the following subsection for further information concerning the on-site UST. No other UST facilities were reported in the search area.

7.9.2 UST Releases: Distance Searched - 0.5 mile - The RWQCB and SWRCB maintain records of facilities currently involved in site assessment/mitigation resulting from reported spills or releases from USTs. Records available for the site vicinity pertinent to UST releases were obtained and reviewed by personnel from ATC Environmental Inc. According to the records, fourteen facilities are located within the search area, including the site.

UST records regarding the site were reviewed at the Fullerton Fire Department. According to a Tank Closure Report, prepared by Amwest Environmental (AE) dated January 1995, a 6,000 gallon UST was removed from the south-central portion of the site on 27 October 1994. Two soil samples were collected from the tank excavation and two others were collected from beneath the former fuel dispenser. The samples were analyzed in general accordance with EPA Method Numbers 8015 (modified) for total petroleum hydrocarbons as gasoline (TPHg) and 8020 for benzene, toluene, ethylbenzene, and xylene (BTEX). TPHg and BTEX were not detected in the

samples collected from the former tank area. However, TPHg was detected at a concentration of 11,900 milligrams per kilogram (mg/kg), benzene at 20,900 micrograms per kilogram (μg/kg), toluene at 376,000 μg/kg, ethylbenzene at 122,000 μg/kg, and xylene at 915,000 μg/kg at three feet below ground surface (BGS) below the former fuel dispenser. At five feet BGS below the former fuel dispenser TPHg was detected at a concentration of 49.6 mg/kg, benzene at 72.8 micrograms per kilogram μg/kg, toluene at 1,290 μg/kg, ethylbenzene at 360 μg/kg, and xylene at 4,390 μg/kg (AE, 1995).

Because the soil in the vicinity of the former UST was reported to be stiff plastic clay, which would potentially inhibit the vertical migration of gasoline, it was concluded that the zone of impacted soil would be localized and limited to the shallow soils (AE, 1995). On 5 December 1994, an area approximately 11.5 feet wide, 27 feet long and 10 feet deep was excavated below the former fuel dispenser and approximately 26.65 tons of impacted soil was transported off-site for treatment/disposal. Two additional soil samples were collected from the excavation at depths of approximately 10 and 12 feet BGS and were analyzed for TPHg and BTEX. TPHg and BTEX were not reported to have been detected in either sample at concentrations above the laboratory detection limits (AE, 1995).

Based upon the information presented above, a closure letter was issued to American Electronics, Inc. by the Fullerton Fire Department concerning the former UST on 20 January 1995 (Long, 1995).

None of the other UST release facilities were reported to be located within the immediate site vicinity or potentially upgradient from the site.

7.10 Oil and Gas: Distance Searched - 0.5 mile

According to oil and gas records, no oil and/or gas production activity has been reported to have occurred within the search area (CADOG, 1986).

8.0 REPORTS REVIEW

A Phase I ESA and Asbestos Survey were conducted at the site by ATEC Associates, Inc. (ATEC) in August, 1990. The ESA reported that chemical drum storage within the building was not adequate and that spill containment was recommended for the storage areas (ATEC, 1990a). According to the Asbestos Survey, materials sampled and analyzed for asbestos content included sixteen patterns of floor tile and their associated mastic, two patterns of sheet vinyl, and drywall material. One sample of each pattern of floor tile and sheet vinyl sampled was reported to contain asbestos in concentrations greater than one percent, however, asbestos was not detected in the two samples of drywall material (ATEC, 1990b). It should be noted that each pattern of flooring material sampled, and subsequently observed during the site reconnaissance, was noted to be generally in an undamaged condition.

A preliminary subsurface investigation was conducted at the site by Ray E. Lewis Consulting Engineers, Inc. (REL) during 1989 in order to assess the presence of VOCs in the soil and groundwater beneath the site. The investigation involved drilling, installation and sampling of three groundwater monitoring wells, designated BP-1, BP-2, and BP-3. Results of the investigation indicated the presence of VOCs, primarily tetrachloroethene (PCE) and trichloroethene (TCE), in the soil and groundwater beneath the southwestern portion of the site. REL reported concentrations of PCE and TCE in the soil up to 1,100 micrograms per kilogram (μg/kg), in a soil sample collected from boring BP-1 (REL, 1989).

A subsurface investigation was conducted at the site by Applied Geosciences Inc. in 1991 in order to assess the lateral and vertical extent of VOCs in the southwestern portion of the site that had been reported by REL during their preliminary investigation. The investigation involved drilling and sampling of three soil borings, and drilling, installing, and sampling of three groundwater monitoring wells (designated BP-4, BP-5, and BP-6). Results of this investigation indicated the presence of VOCs, primarily PCE and TCE, in the shallow soil beneath the southwestern portion of the site and to the immediate southwest of the site. Concentrations of PCE and TCE up to 1,100 μg/kg were reported in a soil sample collected from well pilot boring BP-5 (Applied Geosciences Inc., 1991).

The RWQCB, in a response letter to Richard F. Holland, President of American Electronics, Inc. dated October 25, 1991, expressed the following concerns: the lateral and vertical extent of soil impacted by VOCs had not yet been fully assessed; the impacted soil could be a source of TCE and PCE in the groundwater; the nature and extent of impacted groundwater should be more accurately assessed with additional groundwater data; and that groundwater level measurements, and calculated gradients and flow directions, had displayed inconsistent results (RWQCB, 1991a).

To assess the issue of impacted soil at the site Applied Geosciences Inc. proposed conducting a soil-gas survey and advancing soil borings at the site to further assess the lateral and vertical extent of VOC impacted soil. The scope of the additional work was approved by the RWQCB in a letter dated 20 December 1991 from the RWQCB to Mr. Richard F. Holland, President of American Electronics, Inc. (RWQCB, 1991b).

A soil-gas survey was conducted at the southwestern portion of the site on 19 and 20 December 1991. The soil-gas survey consisted of advancing 29 soil-gas probes to depths ranging from approximately 8 to 10 feet below ground surface (BGS) and analyzing one gas sample from each location. The soil-gas samples were analyzed for PCE, TCE, 1,1,1-trichloroethane (1,1,1-TCA), and total volatile petroleum hydrocarbons (TVPH). Of the 30 samples collected in the survey, all 30 had detectable concentrations of 1,1,1-TCA, TCE, PCE and an unknown compound that was reported as 1,1-dichloroethene (1,1-DCE). Although most of the concentrations were relatively low, the presence of relatively high concentrations of total VOCs (greater than 1,000 micrograms per liter μg/L) were reported in the area adjacent to the former chemical storage area in the vicinity of soil-gas sample locations SG-9 and SG-21; on the NTS property in sample location SG-23; and approximately 60 feet to the northeast of the former chemical storage area

in sample location SG-15.

Based on the results of the soil-gas survey, four soil borings were drilled to depths of approximately 20 feet BGS. The soil boring locations were selected based upon the locations of the highest total VOC concentrations observed during the soil-gas survey. The purpose of these borings was to assess the lateral and vertical extent of VOCs in the shallow soil at the southwestern portion of the site that was encountered during the previous subsurface investigations conducted by REL (1989) and Applied Geosciences Inc. (1991). Soil samples were analyzed for VOCs in general accordance with Environmental Protection Agency (EPA) Method No. 8021. One sample from each of the soil borings was analyzed by a RWQCB-selected laboratory for VOCs in general accordance with EPA Method No. 8010. The results indicated PCE and TCE were present at concentrations up to 3,500 μg/kg in a soil sample collected from boring SB-6. The results of the soil-gas survey and the soil borings were presented in a report prepared by Applied Geosciences Inc. dated 18 March 1992 (Applied Geosciences Inc., 1992).

The RWQCB requested that remedial efforts be conducted on the impacted soil on the southwestern portion of the site despite the site receiving approval from the Orange County Health Care Agency (OCHCA) that no action was necessary to protect public health (RWQCB, 1991c, 1992, and 1994a). In order to comply with the RWQCB requests, Applied Geosciences Inc. proposed remediating impacted soil at the site using a vapor extraction system (VES). A VES conceptual system design was presented in a 14 April 1994 letter addressed to American Electronics, Inc. and forwarded to the RWQCB for review (Applied Geosciences Inc., 1994). The RWQCB, in a letter dated 23 May 1994, approved the plan to install and operate the proposed system (RWQCB, 1994b). The VES was assembled and installed at the site during the period from June to October 1994.

The VES startup and initial operations covered the period from 13 October through 15 November 1994 (approximately 34 days), and the results of the startup activities were presented in a progress report dated 4 January 1995 (Applied Geosciences Inc., 1995a). Monitoring of the system was conducted daily for the first two weeks of operation and once a week for the remaining two weeks. The results of the laboratory analyses indicated that detectable concentrations of chlorinated hydrocarbons, namely PCE and TCE, were present in the vapor stream extracted from the subsurface soils. The initial concentrations of PCE and TCE for the sample collected at system startup were reported at 640 and 570 μg/L, respectively. The concentrations were observed to decrease during the startup period and the concentrations of PCE and TCE for the final sample collected at the end of the startup period were reported at 39 and 55 μg/L, respectively.

The VES start-up and first quarter of operations covered the period from 13 October through 31 January 1995 (approximately 110 days) and the results were presented in a progress report dated 23 March 1995 prepared by Applied Geosciences Inc. (Applied Geosciences Inc., 1995b). As discussed above, the initial concentrations of PCE and TCE for the samples collected at system start-up were reported at 640 and 570 μg/L, respectively. The concentrations were observed to

decrease steadily during the first quarter of operation, and the concentrations of PCE and TCE for the final sample collected at the end of the quarter were reported at 13 and 11 μg/L, respectively, which represents a greater than 90 percent reduction in VOC concentration in the extracted vapors. Based upon those observations, it appeared that the remediation efforts were proceeding ahead of schedule, and the system was shut down for approximately 2 weeks prior to the sampling on 4 April 1995 in order to "pulse" the system. The 4 April 1995 analytical results were reported at concentrations of only 19 and 31 μg/L for PCE and TCE, respectively. The two previous rounds of sampling had reported concentrations of 13 and 10 μg/L for PCE, and 11 and 14 μg/L for TCE. The results indicated that there was no significant increase in concentrations after pulsing of the system.

Based on the results obtained from the first quarter of VES operations and the sampling conducted on 4 April 1995, Applied Geosciences Inc. proposed to conduct a subsurface investigation to document the completion of the remedial efforts at the site. The RWQCB had previously discussed a cleanup criteria for VOCs at the site at 1,000 μg/kg. The scope of work developed for the investigation was submitted to the RWQCB and was subsequently approved by the RWQCB in a letter dated 5 July 1995 from the RWQCB to Mr. Richard F. Holland, President of American Electronics, Inc. (RWQCB, 1995).

A total of three soil borings were advanced in locations that had reported concentrations in excess of 1,000 μg/kg from previous investigations at the site. The results of the soil sampling indicated that PCE and TCE were present in the soil samples analyzed at concentrations only up to 17 and 74 μg/kg, respectively (Applied Geosciences Inc., 1995c). The highest total VOC concentration was 88 μg/kg. Due to the 97 percent reduction in VOCs beneath the site, and the concentrations being orders of magnitude less than the cleanup criteria of 1,000 μg/kg, it was the professional judgment of Applied Geosciences Inc. that remediation of the soil was complete (Applied Geosciences Inc., 1995c). The RWQCB concurred and in a review letter dated 19 April 1996, documented that "no further action" regarding the soil at the site was required (RWQCB, 1996a).

In addition to on-site soil remediation activities, groundwater monitoring was conducted at the site from 1989 to 1995 by Applied Geosciences Inc. The groundwater monitoring data indicated that groundwater beneath the site has been impacted by VOCs, primarily PCE and TCE. In addition, data from upgradient monitoring wells indicated that there was an off-site source or sources of VOCs in the site vicinity. At the time of the groundwater monitoring conducted in February 1995, VOC concentrations in wells BP-1 and BP-5, which were drilled through the areas with the highest reported concentrations of PCE and TCE in the soil, had decreased over time by up to two orders of magnitude until they approached the background concentrations observed in the other wells, which have remained consistent since the monitoring program was initiated. PCE concentrations in wells BP-1 and BP-5, which are located in the area of affected soil, were lower than upgradient wells BP-2 and BP-3 over the previous five sampling rounds. TCE concentrations, while still generally higher in well BP-1 compared with wells BP-2 and BP-3, had been of the same order of magnitude over the previous five sampling rounds. These data indicated that the higher initial concentrations of PCE and TCE in wells BP-1 and BP-5 may have been

introduced during the well installation procedures and do not reflect the actual conditions of the aquifer beneath the site. Applied Geosciences Inc. subsequently concluded that the concentration and distribution of chlorinated hydrocarbons detected in samples from the monitoring wells were consistent with the background concentrations in the region and do not support the theory that site operations have impacted the underlying aquifer (Applied Geosciences Inc., 1995b).

The RWQCB, subsequent to a meeting held on 9 May 1996, prepared a letter to American Electronics Inc. which stated that the RWQCB, while not agreeing that the site hasn't contributed to the regional groundwater problem, is not requiring any additional investigation or site specific remediation of groundwater. The RWQCB, as a condition of the "no further action", required that annual groundwater monitoring be conducted on four of the eight wells at the site. The RWQCB indicated that the other four wells not listed to be monitored on an annual basis may be abandoned (RWQCB, 1996b).

The RWQCB letter referenced above also indicated that the Orange County Water District and/or the Regional Board may pursue a region-wide groundwater mitigation effort sometime in the future, which would likely involve the pooling of funds from a potential responsible party (PRP) group. The involvement within a PRP group is typically based upon the magnitude of the impact from the various facilities involved. Although mentioned by the RWQCB, there does not appear to be any current plans to implement a regional mitigation effort for the basin.

9.0 DISCUSSION

9.1 On-Site Potential Sources

Historical records, including City of Fullerton Department of Building and Safety records, and aerial photographs, indicated that the site was used for agricultural purposes in 1953. There is a low to moderate likelihood that agriculturally related chemicals may be present in the shallow subsurface beneath the site as a result of prior agricultural activity. However, it is judged that there is a low likelihood that soil would be considered a waste, and therefore, a hazardous waste unless it is removed from the site. Additionally, it is judged that there is a low likelihood for human exposure to the agriculturally related chemicals based on site usage because the site is capped throughout by buildings and asphalt. Information pertaining to likelihood statements is presented in Appendix C.

The current site occupant, AEI, has conducted electronic component manufacturing at the site since approximately 1960.

A UST, used to store gasoline for private vehicles, was formerly located near the south-central portion of the site. The 6,000 gallon fiberglass UST was reported to have been excavated and removed approximately two years ago. Soil sampling conducted subsequent to the UST removal indicated that TPHg and BTEX impacted soil was present in the vicinity of the fuel dispenser. The impacted soil was excavated to nondetectable levels and transported off-site for

treatment/disposal. The site was granted case closure by the Fullerton Fire Department in January 1995.

Subsurface investigations were conducted at the site from 1989 through 1995 in order to assess the nature and extent of VOC impacted soil in the vicinity of a former chemical storage area located on the southwestern portion of the site. The investigations indicated that the shallow soil in this area of the site was impacted by concentrations of chlorinated hydrocarbons in excess of 1,000 μg/kg. In order to mitigate the shallow soil in the southwestern portion of the site, a VES was installed in October 1994 and operated for approximately six months, after which time the effluent VOC concentrations had reached asymptotic levels. "Confirmation" soil samples were collected in July 1995 and the results indicated an approximate 97 percent reduction in the residual VOC concentrations, to well below the targeted "cleanup level" of 1,000 μg/kg. The RWQCB subsequently issued a "no further action" letter regarding the impacted soil at the site in April 1996.

Groundwater monitoring activities have been conducted at the site since 1989, the results of which indicated that groundwater beneath the site has been impacted with VOCs. The groundwater investigation also indicated that the concentration and distribution of chlorinated hydrocarbons detected in samples from the monitoring wells are consistent with the background concentrations in the region and there is no conclusive evidence that site operations have impacted the underlying aquifer. The RWQCB issued a "no further action" letter regarding the impacted groundwater at the site in June 1996.

Although the soil and groundwater at the site have been impacted by chlorinated hydrocarbons, the RWQCB has issued "no further action" letters for both the soil and groundwater at the site, therefore, this would not constitute an REC. As a condition of the "no further action" status, annual groundwater monitoring of the remaining four monitoring wells is currently ongoing.

The RWQCB has mentioned that a region-wide groundwater mitigation effort may be pursued sometime in the future. However, there does not appear to be any current plans to implement a regional mitigation effort for the basin. Additionally, the minimal impact to the aquifer in the vicinity of the AEI site, and the question as to whether the AEI site operations have actually impacted the groundwater, could preclude AEI's involvement in any PRP contributions to a mitigation effort.

A previous asbestos survey conducted at the site reported that several patterns of floor tile and linoleum are asbestos containing. The flooring materials observed during the site reconnaissance were generally noted to be in an undamaged condition.

Potentially hazardous materials and waste were noted to be stored in two buildings located on the southern portion of the site. Both buildings were noted to have an elevated plastic grate floor and were equipped with secondary containment. Potentially hazardous materials noted to be stored in one building in 55-gallon drums included MEK, kerosene, PCA, acetone, stoddard solvent,

isopropyl alcohol, cutting oil, and lubrication oil. Potentially hazardous waste noted to be stored in the adjacent building in labeled 55-gallon metal drums included oil, a mixture of MEK, acetone, and alcohol, fixer, developer, and paint filters. The waste was reported to be transported off-site for disposal under manifest by Safety Kleen and Pacific Environmental. No evidence of surface staining was noted in the vicinity of the two storage buildings.

The site facility and grounds appeared to be generally maintained in a neat and orderly manner with what appeared to be good housekeeping practices, and no adverse environmental conditions pertaining to hazardous substances were noted. Based on this information, it is our judgment that there is a low likelihood that current activities conducted at the site have adversely impacted the site and it is our judgment that these activities would not constitute an REC.

9.2 Off-Site Potential Sources

The site vicinity reconnaissance and regulatory records review did not reveal any obvious indications of potential off-site sources of hazardous materials/waste. However, the consistent detection of chlorinated hydrocarbons in the samples collected from the upgradient wells at the site, indicates that the groundwater underlying the site has been impacted from an off-site source(s) of VOCs and would constitute an REC.

10.0 CONCLUSION

Based on the information obtained during this assessment, current regulatory guidelines, and the judgment of ATC Environmental Inc., the following conclusion has been drawn:

- ATC has performed a Phase I Environmental Site Assessment in conformance with the scope of work and limitations of ASTM Standard E 1527-94 for the property located at 1600 East Valencia Drive, Fullerton, California. Any exceptions to or deletions from this practice are described in Section 4.0 of this report. The assessment has revealed no evidence of Recognized Environmental Conditions in connection with the site, except for the following.

  - Off-site source or sources of VOCs in groundwater underlying the site.

11.0 RECOMMENDATION

Based on the information obtained during this assessment, current regulatory guidelines, and the judgment of ATC Environmental Inc., the following recommendation has been made:

- Periodic review of RWQCB records pertaining to off-site sources of VOCs in groundwater may be considered.

ATC Environmental Inc. warrants that the services, findings, and/or recommendations provided to AEI and Comerica Incorporated (Comerica), its affiliates and subsidiaries, and their respective successors and assigns, have been prepared, performed and rendered in accordance with procedures, practices and standards generally accepted and customary in the consultant's profession for use in similar assignments. ATC Environmental Inc. shall indemnify, save and hold harmless AEI and Comerica from and against any and all losses, costs, expenses, and liabilities, including without limit reasonable attorneys fees, which are attributable to the breach of the above warranty, up to an aggregate amount of $1,000,000 (One Million Dollars), notwithstanding any limitation (expressed or implied) contained in any other agreement or document relating to the services, findings and/or recommendations provided by ATC Environmental Inc.

The judgments and conclusions described in this report pertain to the conditions judged to be present or applicable at the time the work was performed. Future conditions may differ from those described herein and this report is not intended for use in future evaluations of the site unless an update is conducted by a consultant familiar with environmental assessments. Use of this report is provided to AEI and Comerica for their exclusive use and shall be subject to the terms and conditions in the applicable contract between American Electronics, Inc. and ATC Environmental Inc. Any third party use of this report shall also be subject to the terms and conditions governing the work in the contract between American Electronics, Inc. and ATC Environmental Inc. Any unauthorized release or misuse of this report shall be without risk or liability to ATC Environmental Inc.

Certain information contained in this report may have been rightfully provided to ATC Environmental Inc. by third parties or other outside sources. ATC Environmental Inc. does not make any warranties or representations, whether expressed or implied, regarding the accuracy of such information, and shall not be held accountable or responsible in the event that any such inaccuracies are present.

12.0 REFERENCES

Amwest Environmental, (AE), 1995, UST Closure Report for American Electronics, Inc. Property, Fullerton, California, dated January, 1995.

Applied Geosciences Inc., 1991, Phase II subsurface investigation for the American Electronics Inc. facility located at 1600 East Valencia Drive in the city of Fullerton, California: dated 30 August 1991.

_____, 1992, Additional subsurface investigation and first quarterly round of groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California: Unpublished report dated 18 March 1992.

_____, 1994, Vapor extraction system (VES) conceptual design and plan to install and operate a vapor extraction system at the American Electronics Inc. facility in Fullerton, California: Unpublished report dated 14 April 1994.

_____, 1995a, System startup and progress report for the vapor extraction remediation project at the American Electronics Inc. facility located at 1600 East Valencia Drive, Fullerton, California: Unpublished report dated 4 January 1995.

_____, 1995b, Quarterly vapor extraction system (VES) progress report and fourth round of semiannual groundwater monitoring for the American Electronics facility located in Fullerton, California: Unpublished report dated 23 March 1995.

ATEC Associates, 1990a, Phase I Environmental Site Assessment 1600 E. Valencia Drive, Fullerton, CA, dated August 1990.

_____, 1990b, Asbestos Survey 1600 E. Valencia Drive, Fullerton, CA, dated August, 1990.

California Division of Oil and Gas (CADOG), 1986, Map Number W 1-2, dated 1986.

Department of Water Resources (DWR), 1967, Progress report on groundwater geology of the coastal plain of Orange County, dated July, 1967.

Konovalov, Val, 1996, American Electronics, Inc., Oral communication.

Long, Steve, 1995, Letter to Mr. Val Konovalov of American Electronics Inc., Dated 20 January 1995.

Ray E. Lewis Consulting Engineers, Inc. (REL), 1989, subsurface investigation to determine the extent of contaminant migration: Unpublished report dated 30 June 1989, 10 p.

Region Water Quality Control Board - Santa Ana Region (RWQCB), 1991a, Letter to Richard F. Holland, President of American Electronics, Inc.: Dated 25 October 1991.

_____, 1991b, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 20 December 1991.

_____, 1991c, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 26 December 1991.

_____, 1992, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 22 June 1992.

_____, 1994a, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 22 June 1994.

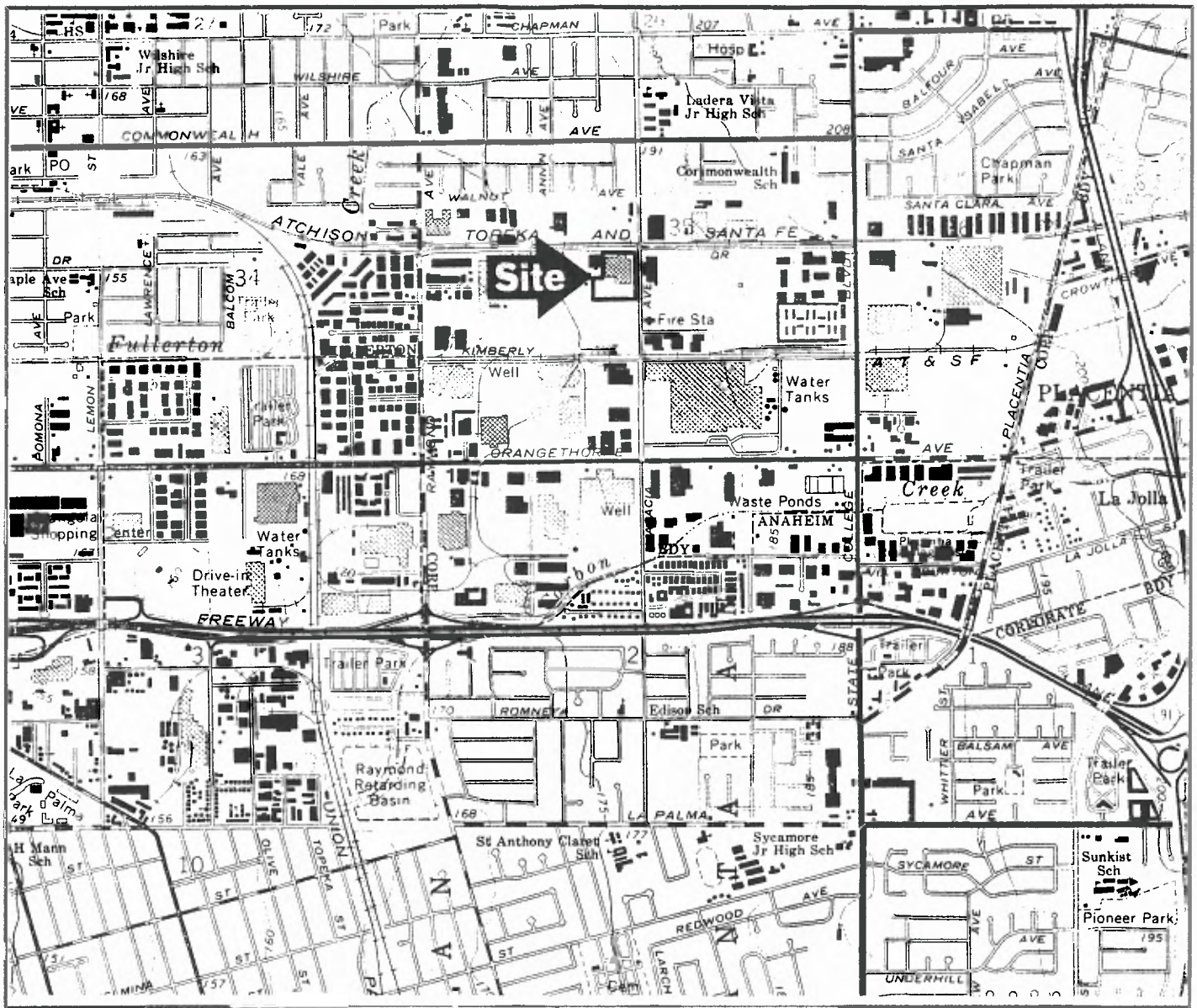
_____, 1994b, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 23 May 1994.

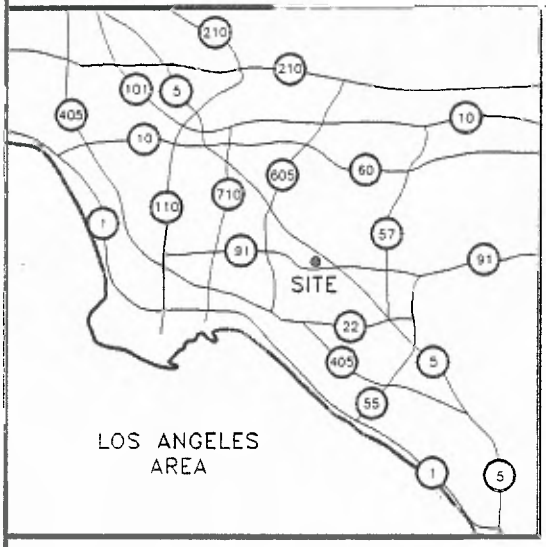
_____, 1995, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 5 July 1995.

_____, 1996a, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 19 April 1996.

_____, 1996b, Letter to Richard F. Holland, President of American Electronics Inc.: Dated 20 June 1996.

VISTA Environmental Information, Inc., (VISTA), 1996, Unpublished government database report, dated 6 November 1996





NORTH

0 ½ 1

SCALE, MILES

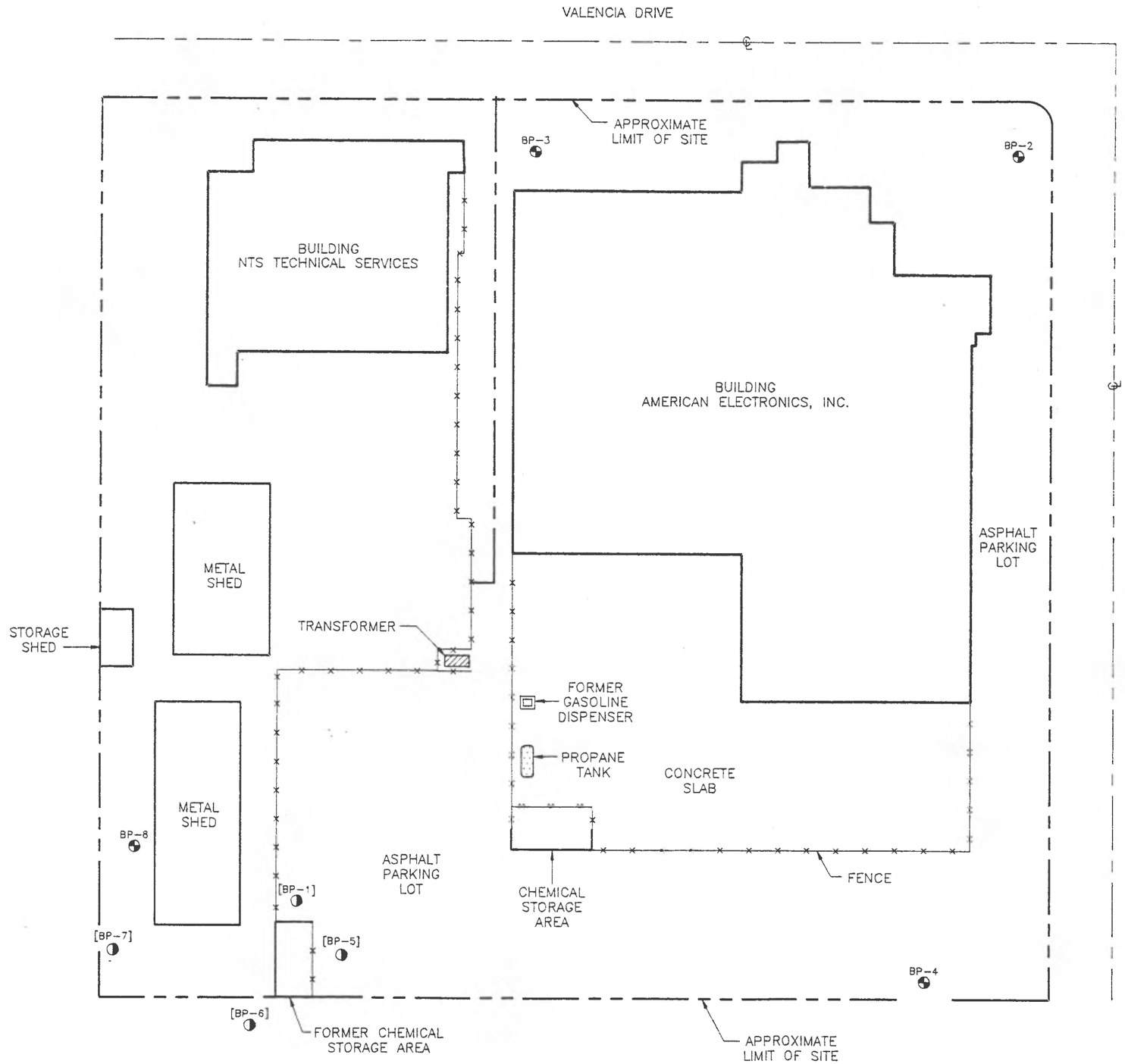
NOTE

BASE MAP IS TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA–ORANGE CO., 7.5–MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

SITE VICINITY MAP

PROJECT NUMBER 14240.0002 | FIGURE 1



EXPLANATION

BP-4 MONITORING WELL LOCATION AND DESIGNATION.

[BP-1] ABANDONED MONITORING WELL LOCATION (22 NOVEMBER 1996)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN – PLUMBING," BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960
3) ug/L = MICROGRAMS PER LITER

NORTH

0 80 160

SCALE, FEET

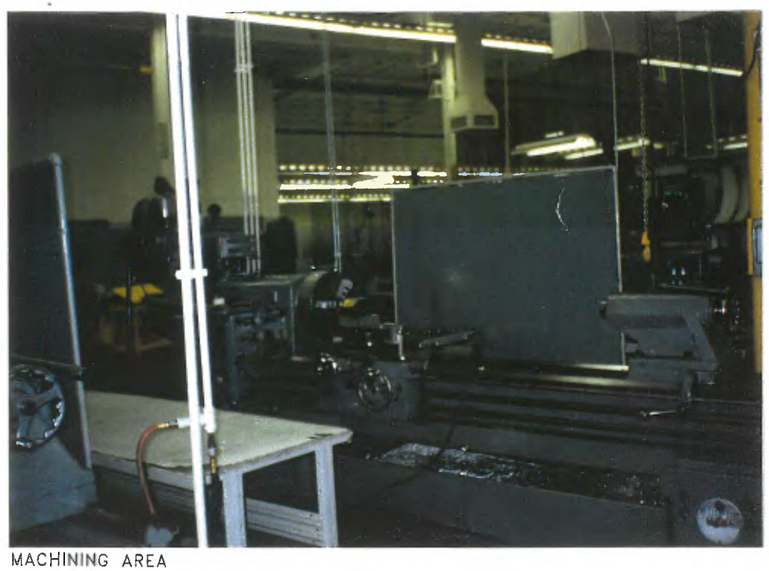
ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

SITE PLAN
AMERICAN ELECTRONICS INC.

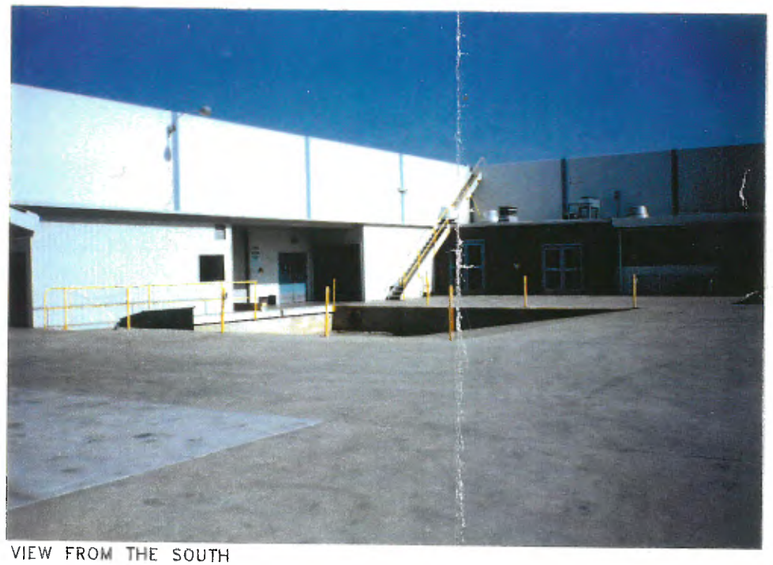
PROJECT NUMBER 14240.0002 | FIGURE 2

VIEW FROM THE NORTH

CHEMICAL STORAGE AREA



MACHINING AREA



VIEW FROM THE SOUTH

ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

PROJECT NUMBER 14240.0002 | FIGURE 3

APPENDIX A

CHAIN-OF-TITLE REPORT

PROPERTY INFORMATION REPORT

ATC ENVIRONMENTAL, INC.
17321 IRVINE BLVD.
TUSTIN, CA 92680

PROJECT NAME/NUMBER:

American Electronics

SITE ADDRESS/LOCATION:

1600 E. Valencia Dr., Fullerton CA

CURRENT LEGAL DESCRIPTION:

Being all the lots, tracts or parcels situated in Parcel 2, Book 128, Page 46 of Parcel Maps, City of Fullerton, Orange County, California.

CURRENT OWNERSHIP:

American Electronics, Inc.

ZONING ORDINANCES:

Commercial

FLOOD DETERMINATION:

ZONE: X (Not within the 100 year to 500 year flood plain.)
MAP: 06059C 0007E
DATE: 9/15/89

TAX APPRAISAL INFORMATION:

LAND VALUE:	1,247,200
IMPROVEMENTS:	1,234,133
TOTAL APPRAISED VALUE:	2,481,333
ASSESSOR'S PARCEL NO.:	033-230-44

BUILDING PERMIT/APPLICATION RESEARCH:

DATE: **PERMIT/APPLICATION:**
Not available for subject site.

PROPERTY INFORMATION REPORT

Ameristar Information Network, Inc. does not guarantee nor include any warranty of any kind, whether expressed or implied, about the correctness or completeness of all information included in this report since this information is retrieved as it is recorded from the various agencies that make it available. This report is for environmental purposes only and for no reason should it be used for any other reason.

OWNERSHIP SUMMARY:

GRANT DEED:

DATE:	3/15/18
GRANTOR:	Albert Heineeke et ux Minnie
GRANTEE:	Antone Chaistensen
VOLUME/PAGE:	335.366

GRANT DEED:

DATE:	4/21/55
GRANTOR:	Antone Chaistensen
GRANTEE:	American Electronics. Inc.
VOLUME/PAGE:	3037.251

GRANT DEED:

DATE:	5/11/61
GRANTOR:	American Electronics. Inc.
GRANTEE:	Western Medical Centers Management Co.
VOLUME/PAGE:	5717.941

GRANT DEED:

DATE:	12/19/61
GRANTOR:	Western Medical Centers Management Co.
GRANTEE:	J. C. Copeland. trustee
VOLUME/PAGE:	5949.769

GRANT DEED:

DATE:	1/01/64
GRANTOR:	J. C. Copeland. trustee
GRANTEE:	Investors International Properties. Inc.
VOLUME/PAGE:	6882.913

GRANT DEED:

DATE:	4/09/79
GRANTOR:	Investors International Properties. Inc.
GRANTEE:	Coldwell Banker & Company
VOLUME/PAGE:	13163.1653

PROPERTY INFORMATION REPORT

GRANT DEED:

DATE:	4/09/79
GRANTOR:	Coldwell Banker & Company
GRANTEE:	American Electronics, Inc.
VOLUME/PAGE:	13163.1669

END OF REPORT.

3-15-1918
Bk 335 Pg 366 [illegible]

3499.

This Indenture. Made the 25th day of September, in the year of our Lord one thousand nine hundred and eighteen

BETWEEN Albert Heinecke and Minnie Heinecke, his wife, of Orange County, California, the parties of the first part, and Antone M. Chaistensen, a single man, of Orange County, California, the party of the second part,

WITNESSETH: That the said parties of the first part, for and in consideration of the sum of Ten (10) Dollars, lawful money of the United States of America, to him in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, do ee by these presents grant, bargain, sell, convey and confirm unto the said party of the second part, and to his heirs and assigns forever, all that certain lot, piece, or parcel of land situate, lying and being in the Rancho San Juan Cajon de Santa Ana, County of Orange, State of California, bounded and particularly described as follows, to-wit:

The North half (N 1/2) of the East half (E 1/2) of the North-east quarter (N E 1/4) of the Southwest quarter (S W 1/4) of Section Thirty-five (35), Township Three (3) South, Range Ten (10) West, S B B & M, estimated to contain ten (10) acres.

Subject to reservations of record.

Albert Heinecke
& Minnie Heinecke
to
Antone M. Chaistensen

U.S.C.R.S. CANCELLED

TOGETHER with all and singular the tenements, hereditaments and appurtenances thereunto belonging or in any wise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof.

TO HAVE AND TO HOLD all and singular the said premises, together with the appurtenances, unto the said party of the second part, and to heirs and assigns forever.

46791 BOOK 3037 PAGE 251

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

Form 1602 Affix I. R. S. 158.40 Order No. 202506-IRB

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
ANTONE MARINUS CHRISTENSEN and MARGARET A. CHRISTENSEN, husband and wife

do
hereby

GRANT to

AMERICAN ELECTRONICS, INC., A California Corporation

the real property in the County of Orange,
State of California, described as:

The East half of the Northeast quarter of theSouthwest quarter of Section 35, Township 3 South, Range 10 West, S.B.B.& M.

EXCEPTING therefrom all wind machines, orchard heaters and equipment which the sellers may remove from the property at their own expense.

Subject to the covenants, conditions, reservations and restrictions and rights of way of record.

Also subject to taxes for fiscal year 1954-1955.

Dated: January 31, 1955

Antone Marinus Christensen
ANTONE MARINUS CHRISTENSEN

Margaret A. Christensen
MARGARET A. CHRISTENSEN

STATE OF CALIFORNIA }
COUNTY OF ORANGE } ss.

On March 24, 1955

before me, the undersigned, a Notary Public in and for said County and State, personally appeared
ANTONE MARINUS CHRISTENSEN and
MARGARET A. CHRISTENSEN

known to me to be the person S whose name S
subscribed to the within instrument and acknowledged that they executed the same.

WITNESS my hand and official seal.

(Seal) K. L. Freel
Notary Public in and for said County and State

SPACE BELOW FOR RECORDER'S USE ONLY

RECORDED AT REQUEST OF
ORANGE CO. TITLE CO.

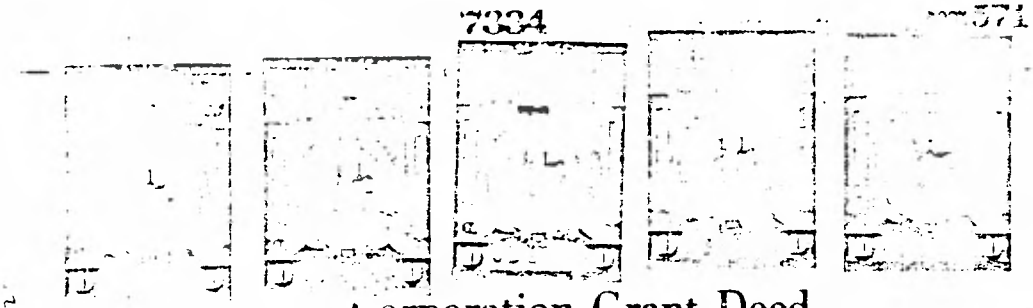
APR 21 1955 9:00 A.M.
BOOK 3037 PAGE 251
OFFICIAL RECORDS
Orange County California

16 0/3 Ruby McFarland
County Recorder

When Recorded Mail to
AMERICAN ELECTRONICS, INC.
4011 Telegraph Road
Los Angeles 22, California

Examined & Compared, Entered [illegible], County Recorder, Hazel Leonard, Deputy

7334 5717 041



Corporation Grant Deed

398A 11-55

THIS FORM FURNISHED BY TITLE INSURANCE AND TRUST COMPANY

Affix I. R. S. $ 2,537.70

T-298310-Kasson

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

AMERICAN ELECTRONICS, INC.

a corporation organized under the laws of the state of California
hereby GRANTS to

WESTERN MEDICAL CENTERS MANAGEMENT CO, a California Corporation

the following described real property in the state of California, county of Orange,

City of Fullerton,

(see attached)

The north half of the east half of the northeast quarter of the southwest quarter of Section 35, Township 3 South, Range 10 West, in the Rancho San Juan Cajon de Santa Ana, city of Fullerton, county of Orange, state of California, as said section is shown on a map recorded in book 51 page 7 of Miscellaneous Maps, in the office of the county recorder of said county.

Said land is included within the area shown on a map filed in book 47 page 10 of Record of Surveys, in the office of the county recorder of said county.

[illegible] dated April 17, 1960, executed by [illegible] Management Co., a corporation, in favor [illegible], a corporation, recorded June 2, [illegible], page [illegible], official records of Orange County, California, there being no intention on the part of the grantor or the grantee to cancel or merge said lease, it being understood that said lease shall remain in full force and effect.

Accepted and consented to by:

WESTERN MEDICAL CENTERS MANAGEMENT CO.

By R. S. Daniels
President

By B. M. Mellers
Secretary

STATE OF CALIFORNIA)
)ss.
COUNTY OF LOS ANGELES)

On May 8, 1961 before me, the undersigned, a Notary Public in and for said County and State, personally appeared R. S. Daniels, known to me to be the President, and B. M. Mellers, known to me to be the Secretary of the Corporation that executed the within Instrument, known to me to be the persons who executed the within Instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the within Instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

(SEAL) [signature]
Notary Public in and for said County and State

NOTARY PUBLIC
[illegible] COUNTY OF LOS ANGELES [illegible]
My Commission Expires August [illegible] 61.

275668

In Witness Whereof, said corporation has caused its corporate name and seal to be affixed hereto and this instrument to be executed by its President and Secretary thereunto duly authorized.

Dated: as of May 26, 1960

AMERICAN ELECTRONICS, INC.

By P. W. Zonne President

By F. A. Simpson Secretary

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } ss.

On May 8, 1961

before me, the undersigned, a Notary Public in and for said County and State, personally appeared P. W. Zonne, known to me to be the President, and F. A. Simpson, known to me to be the Secretary of the corporation that executed the within instrument, and known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

E. W. MacDiarmid, Jr.

(Seal) E. W. MacDiarmid, Jr.
Notary Public in and for said County and State.

My commission expires July 19, 1962

SPACE BELOW FOR RECORDER'S USE ONLY

RECORDED AT REQUEST OF
TITLE INS. & TRUST CO.
IN OFFICIAL RECORDS OF
ORANGE COUNTY, CALIF.
8 AM MAY 11 1961
RUBY McFARLAND, County Recorder

$2.80

WHEN RECORDED MAIL TO

Western Medical Centers Management Co.
11675 San Vicente Blvd.
Los Angeles 19, California

Title Order No. 298310

Escrow or Loan No. 107-8583-S

BOOK 5949 PAGE 769

RECORDING REQUESTED BY
J. C. COPELAND
P. O. BOX 49798
LOS ANGELES 49, CALIF.
WHEN RECORDED MAIL TO

J. C. COPELAND
P. O. BOX 49798
LOS ANGELES 49, CA

13201

RECORDED AT REQUEST OF
J. C. Copeland
IN OFFICIAL RECORDS OF
ORANGE COUNTY, CALIF.
9:05 AM DEC 19 1961
RUBY McFARLAND, County Recorder
$2.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

AFFIX I.R.S. $ IN THIS SPACE

Corporation Grant Deed

THIS FORM FURNISHED BY TITLE INSURANCE AND TRUST COMPANY

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

WESTERN MEDICAL CENTERS MANAGEMENT CO.

a corporation organized under the laws of the state of California
hereby GRANTS to

J. C. COPELAND, TRUSTEE

the following described real property in the city of Fullerton
county of Orange state of California:

The North half of the East half of the Northeast quarter of the Southwest quarter of Section 35, Township 3 South, Range 10 West, in the Rancho San Juan Cajon de Santa Ana, in the city of Fullerton, county of Orange, state of California, as said Section is shown on a map recorded in book 51 page 7 of Miscellaneous Maps, in the office of the county recorder of said county.

Said land is included within the area shown on a map filed in book 47 page 10 of Record of Surveys, in the office of the county recorder of said county.

In Witness Whereof, said corporation has caused its corporate name and seal to be affixed hereto and this instrument to be executed by its President and Secretary thereunto duly authorized.

Dated: June 13, 1960

STATE OF CALIFORNIA
COUNTY OF Los Angeles } ss.

On June 13, 1960, before me, the undersigned, a Notary Public in and for said County and State, personally appeared J. C. Copeland, known to me to be the Vice President, and B. W. Mellus known to me to be Secretary of the Corporation that executed the within instrument, known to me to be the persons who executed the within instrument on behalf of the corporation therein named, and acknowledged to me that such corporation executed the within instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

(Seal) [illegible] County and State

WESTERN MEDICAL CENTERS MANAGEMENT CO.

By J. C. Copeland
Vice President

By B. W. Mellus
Secretary

Title Order No.

Escrow or Loan No.

RECORDING REQUESTED BY

10689

6882 913

AND WHEN RECORDED MAIL TO

Name Investors International Property Ltd.
Street Address P. O. BOX 49798
City & State LOS ANGELES 49, CALIF.

$2.00

RECORDED AT REQUEST OF
J. C. Copeland
IN OFFICIAL RECORDS OF
ORANGE COUNTY, CALIF.
1:05 AM JAN 14 1964
RUBY McFARLAND, County Recorder

SPACE ABOVE THIS LINE FOR RECORDER'S USE

AFFIX I.R.S. $.....IN THIS SPACE

Grant Deed

THIS FORM FURNISHED BY TITLE INSURANCE AND TRUST COMPANY

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

J.C. Copeland, Trustee

hereby GRANT(S) to

Investors International Properties, Ltd.

the following described real property in the city of Fullerton
county of Orange, state of California:

The North half of the East half of the Northeast quarter of the Southwest quarter of Section 35, Township 3 South, Range 10 West, in the Rancho San Juan Cajon de Santa Ana, in the city of Fullerton, county of Orange, state of California, as said section is shown on a map recorded in book 51 page 7 of Miscellaneous Maps, in the office of the county recorder of said county.

Said land is included within the area shown on a map filed in book 47 page 10 of Record of Surveys, in the office of the county recorder of said county.

Dated: January 1, 1964

J C Copeland, Trustee

STATE OF CALIFORNIA
COUNTY OF Los Angeles } SS.

On January 13, 1964 before me, the undersigned, a Notary Public in and for said County and State, personally appeared J. C. Copeland, Trustee

, known to me to be the person whose name is subscribed to the within instrument and acknowledged that he executed the same.

WITNESS my hand and official seal.

(Seal)

Signature Midge Graydon

OFFICIAL (Typed or Printed)
Notary Public in and for said County and State
Acknowledgment

MIDGE GRAYDON - NOTARY PUBLIC
In and for the County of Los Angeles and State of California

Title Order No.

Escrow No.

BK 13163 PG 1693

39823

$3.00

RECORDED AT REQUEST OF
SAFECO TITLE INS. CO.
IN OFFICIAL RECORDS OF
ORANGE COUNTY, CALIFORNIA
3:00 A.M. MAY 30 1979
LEE A. BRANCH, County Recorder

COLDWELL BANKER & COMPANY
333 So. Hope Street
Los Angeles, Calif. 90071
ATTN: Mr. Frank Mahoney

SAME

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Corporation Grant Deed

035-230-34

THIS FORM FURNISHED BY TICOR TITLE INSURANCE

A.P.N.

The undersigned grantor(s) declare(s):
Documentary transfer tax is $ 2,516.80
( ) computed on full value of property conveyed, or
(XX computed on full value less value of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: (XX City of Fullerton, and

DOC TRANSFER TAX
LEE A. BRANCH
ORANGE CO. RECORDER

3

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, INVESTMENT BANKERS, LTD., a California corporation as successor in interest to INVESTORS INTERNATIONAL PROPERTIES, LTD.
a corporation organized under the laws of the State of California hereby GRANTS to

COLDWELL BANKER & COMPANY, a California corporation.

the following described real property in the County of Orange, State of California:

Parcels 1 and 2, in the City of Fullerton, as shown on a Map filed in Book 128, Page 46 of Parcel Maps, records of said Orange County.

In Witness Whereof, said corporation has caused its corporate name and seal to be affixed hereto and this instrument to be executed by its President and Secretary thereunto duly authorized.
Dated: April 9, 1979

INVESTMENT BANKERS, LTD.

By Barbara M. Copeland
President

By Marjorie J. Kelley
Secretary

STATE OF CALIFORNIA
COUNTY OF Los Angeles } ss.

On April 13, 1979 before me, the undersigned, a Notary Public in and for said State, personally appeared Barbara M. Copeland known to me to be the President, and Marjorie J. Kelley known to me to be Secretary of the Corporation that executed the within Instrument, known to me to be the persons who executed the within Instrument on behalf of the Corporation therein named, and acknowledged to me that such Corporation executed the within Instrument pursuant to its by-laws or a resolution of its board of directors.

WITNESS my hand and official seal.

Signature Evelyne Morland

OFFICIAL SEAL
EVELYNE MORLAND
NOTARY PUBLIC - CALIFORNIA
PRINCIPAL OFFICE IN
LOS ANGELES COUNTY
My Commission Expires April 8, 1982

(This area for official notarial seal)

Title Order No. Escrow or Loan No.

MAIL TAX STATEMENTS AS DIRECTED ABOVE

RECORDING REQUESTED BY

AND WHEN RECORDED MAIL TO

Mr. R. F. Holland, Pres.
AMERICAN ELECTRONICS, INC.
[illegible] E. Valencia Drive
Fullerton, Calif. 92631

BK 13163 PG 1669

39668

$3.00

RECORDED AT REQUEST OF
SAFECO TITLE INS. CO.
IN OFFICIAL RECORDS OF
ORANGE COUNTY, CALIFORNIA
5:00 A.M. MAY 30 1979
LEE A. BRANCH, County Recorder

Address above

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Corporation Grant Deed

THIS FORM FURNISHED BY TICOR TITLE INSURERS

33-23 1-34

The undersigned grantor(s) declare(s):
Documentary transfer tax is $ [illegible].10
FIS computed on full value of property conveyed, or
( ) computed on full value less value of liens and encumbrances remaining at time of sale.
( ) Unincorporated area: [illegible] City of [illegible], and
FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,
COLDWELL BANKER AND COMPANY

a corporation organized under the laws of the State of California hereby GRANTS to

AMERICAN ELECTRONICS, INC., a California corporation

the following described real property in the County of Orange, State of California:

Parcel 2, in the City of Fullerton, as shown on a Map filed in Book 128, Page 46 of Parcel Maps, Records of said Orange County.

484821

In Witness Whereof, said corporation has caused its corporate name and seal to be affixed hereto and this instrument to be executed by its [illegible] President and [illegible] Secretary thereunto duly authorized.

Dated: [illegible]

Corporate Seal

COLDWELL BANKER AND COMPANY

STATE OF CALIFORNIA
COUNTY OF [illegible]
On [illegible]

[illegible] President

[illegible] Secretary

WITNESS my hand and official seal

Signature [illegible]

Title Order No.

APPENDIX B

REPORT PROVIDED BY
VISTA ENVIRONMENTAL INFORMATION, INC.

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

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APPENDIX C

LIKELIHOOD STATEMENTS

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LIKELIHOOD STATEMENTS

Many statements have been made in this report regarding the likelihood of the occurrence of certain adverse events. The term "likelihood," as used here, pertains to chances of a match between the prediction for the event and its actual occurrence. Likelihood statements are based on the professional judgments of ATC Environmental Inc. A prediction made for the occurrence of an event will either match the actual occurrence or not. Uncertainty about the natural processes, lack of adequate scientific understanding of the physical and chemical interactions at the site, and insufficient data and information about the specific site conditions usually preclude a perfect or 100 percent likelihood of match between predictions and actual occurrences. Therefore, where a perfect match is not possible, the likelihood statement assigns a measure for a "degree of belief" or a "betting score" for the match between the prediction for the event and the actual event outcome.

The likelihood statements can be made either qualitatively, expressed verbally, or quantitatively, expressed in percent ranges. The qualitative terms expressed verbally, however, can be approximately related to percent ranges. The following approximate percent ranges have been used by ATC Environmental Inc. for the qualitative terms used in likelihood statements.

QUALITATIVE TERMS	APPROXIMATE PERCENT RANGE
Very Low	Less than 10%
Low	10% to 20%
Low to Moderate	20% to 40%
Moderate	40% to 60%
Moderate to High	60% to 80%
High	80% to 90%
Very High	More than 90%

The following is a typical likelihood statement and its interpretation.

- **Statement**: Based on site conditions, data collected, and current regulatory guidelines delineating a hazardous waste, it is the judgment of ATC Environmental Inc. that there is a low likelihood that hazardous waste from the landfill has migrated to the site.

- **Interpretation of Statement**: The statement reflects an extrapolation of a discrete data set to the entire site. This statement is made within the context of regulatory guidelines delineating hazardous wastes in effect at the time the statement is made. It is important to note that these guidelines periodically change; consequently, the judgment made corresponds to the guidelines cited in the report.

  An extrapolation made from a discrete data set precludes making a statement with certainty that the event has occurred (i.e., one cannot really say with 100 percent certainty that hazardous waste from the landfill has not migrated to the site). Therefore, a professional judgment is made for the event that is expressed in terms of the likelihood (less than 100 percent) that the event either has or has not occurred.

- The statement given above renders a professional judgment that there is a low likelihood that the event has occurred. The above statement could also have been expressed as "there is a high likelihood that hazardous waste from the landfill has not migrated to the site."

ATC ENVIRONMENTAL INC.

16 December 1996
14240.0001

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Attention: Mr. Augustine Anijielo

SUBJECT: NOVEMBER 1996 GROUNDWATER MONITORING REPORT FOR THE AMERICAN ELECTRONICS, INC. FACILITY, LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report summarizes the activities and results of the November 1996 round of groundwater monitoring conducted on 14 and 15 November 1996 at the American Electronics, Inc. (AEI) facility (site) located at 1600 East Valencia Drive, Fullerton, California (Figure 1). This round of groundwater monitoring was conducted at the request of the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) and this letter report is presented to you at the request and authorization of Mr. Richard F. Holland of AEI.

The locations of the four wells that were sampled at the site, designated BP-2, BP-3, BP-4 and BP-8 are shown in Figure 2. Monitoring wells BP-1, BP-5, BP-6, and BP-7 were recently abandoned in accordance with the conditions stated in the RWQCB review letter dated 20 June 1996 (RWQCB, 1996). The well abandonment procedures were documented in a letter to the RWQCB dated 6 December 1996 (ATC Environmental Inc., 1996). Fourteen rounds of groundwater monitoring samples have been collected from monitoring wells BP-2 and BP-3 since their installation in March 1989; 12 rounds of groundwater monitoring samples have been collected from monitoring well BP-4 since its installation in December 1990; and 6 rounds of groundwater monitoring samples have been collected from monitoring well BP-8 since its installation in July 1993.

OBJECTIVE

The objective of the work summarized in this report was to monitor the spatial and temporal changes in the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

17321 Irvine Blvd. • Tustin, CA 92780 • (714) 734-0303 • FAX (714) 734-0510

SCOPE

The scope of work used to meet the objective included the following tasks:

- Measurement of groundwater levels in each of the on-site monitoring wells;
- Purging and groundwater sampling of the four monitoring wells;
- Laboratory analyses of the groundwater samples; and
- Data evaluation and report preparation.

GROUNDWATER MONITORING

Groundwater Sample Collection

The groundwater monitoring conducted at the site included the collection of groundwater elevation measurements and groundwater samples from the four existing wells (BP-2, BP-3, BP-4 & BP-8). The groundwater monitoring activities were conducted under the supervision of a California-registered geologist (RG) and the field procedures are presented in Appendix A. Groundwater levels in each of the four wells were measured prior to well purging. Water was pumped from each of the wells until measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and up to three well volumes of water were extracted. Approximately 150 gallons of water were purged from the monitoring wells. The volume of water purged, pH, temperature, and electrical conductivity for each well were recorded on groundwater collection logs (presented in Appendix B). The submersible pump was set approximately 5 to 10 feet below the top of the screened interval in each monitoring well and the wells were purged at the approximate recharge rate in order to minimize the cascading of water into the wells. Groundwater was allowed to recharge to at least 80 percent of the static water level prior to sample collection.

Groundwater Gradient Assessment

Table 1 presents the results of static groundwater elevation measurements obtained by Applied Geosciences Inc. (now ATC Environmental Inc.) from January 1991 to 14 November 1996. Hydrographs of the groundwater elevation levels over time (time line beginning in March 1989) are presented in Figures 3 through 6. The groundwater gradient is interpreted to be approximately 0.001 ft/ft to the west/southwest (Figure 2).

Laboratory Analyses of November 1996 Groundwater Samples

Groundwater samples were analyzed by Del Mar Analytical of Irvine, California. Groundwater samples collected from the monitoring wells were analyzed for VOCs in general accordance with U.S. Environmental Protection Agency (EPA) Method No. 8021. As part of the quality assurance/quality control (QA/QC) program, one duplicate groundwater sample (BP-A) collected

from well BP-4 was analyzed for VOCs.

The results of the analyses reported that three VOCs were detected in groundwater samples collected from the site; tetrachloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethene (1,1-DCE). PCE, TCE, and 1,1-DCE were reported in the samples collected from each of the four monitoring wells (BP-2, BP-3, BP-4, and BP-8) at concentrations ranging from 4 to 13, 5.1 to 44, and 1.1 to 3.9 micrograms per liter (μg/L), respectively. No VOCs were reported in the laboratory method blank samples at concentrations exceeding the laboratory detection limits. A summary of the laboratory analytical results is presented in Table 2 and the laboratory reports are presented in Appendix D. Graphs of the PCE and TCE concentrations in the groundwater samples over time (time line beginning in March 1989) are presented in Figures 7 through 10.

DISCUSSION

The groundwater gradient is interpreted to be relatively flat (0.001 ft/ft) with a general flow direction to the west/southwest. The interpreted gradient is generally consistent with previous rounds of monitoring conducted at the site. The graphs showing the groundwater elevations versus time (Figures 3 through 6) illustrate a declining elevation trend over the past 2.5 years after a 3 year upward trend.

The primary compounds consistently detected in the groundwater samples collected during this and previous rounds of monitoring were the chlorinated hydrocarbons PCE, TCE, and 1,1-DCE, which were reported at concentrations up to 13, 44, and 3.9 μg/L, respectively. Aromatic hydrocarbons, previously observed sporadically in wells BP-3 and BP-4 during the time period from 1991 to 1993, have not been detected at concentrations exceeding the laboratory detection limits during the last six sampling rounds.

Graphs showing VOC concentrations versus time (Figures 7 through 10) were prepared to illustrate the variations in PCE and TCE concentrations over the course of the monitoring program. The graphs were prepared using a logarithmic scale because concentration differences are generally significant when considered in orders of magnitude. Examination of the graphs illustrate that the concentrations of PCE and TCE, while observed to go through minor fluctuations, have been generally consistent over the past six years of groundwater monitoring. The observed concentration variations would be considered "normal", especially given the large variations in groundwater elevations (>30 feet) observed over the course of the monitoring period (Figures 3 through 6). A slight decrease in concentrations was observed in monitoring wells BP-2, BP-3, and BP-4, compared with the previous round of sampling conducted in February 1995. A more significant decrease was observed in the TCE concentration in monitoring well BP-8, which dropped nearly a full order of magnitude from 64 to 8.3 μg/L, compared with the previous round of sampling conducted in February 1995. The distribution of chlorinated hydrocarbons observed during this and the previous three sampling rounds is relatively consistent from well to well, and there does not appear to be a significant difference between the upgradient wells (BP-2,

BP-3, and BP-4) and the downgradient well (BP-8).

In summary, the concentrations and distribution of chlorinated hydrocarbons detected in samples collected from the monitoring wells are consistent with the background concentrations in the region and do not support the theory that the site operations have impacted the underlying aquifer.

If there are any questions regarding this letter report, please feel free to contact either of us at your convenience.

Sincerely,
ATC ENVIRONMENTAL INC.

REGISTERED GEOLOGIST
JON R. LOVEGREEN
CERTIFIED
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STATE OF CALIFORNIA

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Enclosures:

Table 1: Groundwater Elevation Measurements
Table 2: Laboratory Analytical Results of Groundwater Samples

Figure 1: Site Vicinity Map
Figure 2: Groundwater Gradient and Chemical Analytical Results, November 1996
Figure 3: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-2
Figure 4: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-3
Figure 5: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-4
Figure 6: Graph - Groundwater Elevation -vs- Time: Monitoring Well BP-8
Figure 7: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-2
Figure 8: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-3
Figure 9: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-4
Figure 10: Graph - PCE and TCE Concentrations -vs- Time: Monitoring Well BP-5

Appendix A: Field Procedures
Appendix B: Groundwater Collection Logs
Appendix C: Laboratory Analytical Reports

cc: Mr. Richard F. Holland, American Electronics, Inc.
Dave Peterson, Esq., Hill Wynne Troop & Meisinger
Mr. Mark Cousineau, Hazard Management Consulting, Inc.

REFERENCES

ATC Environmental Inc., 1996, Monitoring well abandonment letter for the American Electronics Inc. facility, Fullerton, California, prepared on behalf of American Electronics, Inc. for submittal to the RWQCB, dated 6 December 1996.

California Regional Water Quality Control Board (RWQCB), 1996, Review letter dated 20 June 1996.

TABLE 1
GROUNDWATER ELEVATION MEASUREMENTS

Well Number	BP-1 [178.14]		BP-2 [183.13]		BP-3 [180.61]		BP-4 [179.89]		BP-5 [177.69]		BP-6 [177.31]		BP-7 [176.96]		BP-8 [177.51]	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
01-10-91	136.68	41.46	141.81	41.32	139.34	41.27	138.50	41.39	136.80	40.89						
01-17-91	136.74	41.40	141.90	41.23	139.34	41.27	138.49	41.40	136.80	40.89						
01-30-91	137.13	41.01	142.30	40.83	139.79	40.82	138.95	40.94	137.31	40.38						
06-21-91			143.19	39.94	140.66	39.95	139.76	40.13	138.09	39.60	137.50	39.81				
07-15-91	138.39	39.75	143.55	39.58	141.05	39.56	140.15	39.74	138.50	39.19	137.93	39.38				
12-19-91	138.05	40.09	143.05	40.08	140.40	40.21	139.34	40.55	137.75	39.94	137.35	39.96				
05-14-92	131.71	46.43	136.50	46.63	134.13	46.48	132.77	47.12	131.34	46.35	130.90	46.41				
08-25-92	131.85	46.29	136.36	46.77	134.18	46.43	133.04	46.85	131.56	46.13	131.09	46.22				
05-10-93	128.15	49.99	132.87	50.26	130.51	50.10	129.05	50.84	127.71	49.98	127.32	49.99				
08-09-93	120.45	57.69	124.93	58.20	122.89	57.72	120.92	58.97	119.92	57.77	119.62	57.69	119.51	57.45	120.13	57.38
02-14-94	116.25	61.89	120.76	62.37	119.75	60.86	117.37	62.52	115.82	61.87	115.45	61.86	115.21	61.75	115.80	61.71
08-23-94	103.80	74.34	108.19	74.94	106.28	74.33	104.56	75.33	103.31	74.38	103.00	74.31	102.82	74.14	103.44	74.07
02-15-95	106.37	71.77	110.80	72.33	108.70	71.91	107.62	72.27	105.94	71.75	105.58	71.73	105.32	71.64	105.89	71.62
11-14-96			117.36	65.77	115.10	65.51	114.24	65.65	---	---	---	---	---	---	112.42	65.09

NOTES:

1) Surveyed top of well casing elevations (shown in brackets below well number) are given in feet relative to mean sea level.
2) Depth = depth-to-groundwater measured in feet below the top of the well casing.
3) Elev. = elevation of groundwater in feet relative to mean sea level.
4) Blank spaces denote that the well was not measured or not yet in existence during the indicated measuring round.
5) "---" indicates that the well was abandoned and is no longer in existence.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
BP-1	04-05-89	<10	290	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	1,500	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	07-02-90	<25	230	<25	<25	<25	<25	NR	<25	<25	89	<25	NA	NR	NR	NA	NA	NA	NA
	08-08-90	<2	520	<2	<2	<2	<2	NR	<2	<5	<2	<2	<0.5	NR	NR	<1	<1	<1	NA
	08-25-92	67	740	<10	<10	<10	14	NR	<10	<10	<10	<10	<10	NR	NR	<10	<10	<20	22
	05-10-93	9	51	<1	<1	<1	<1	1	3	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	7	22	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	6	76	<1	<1	<1	<1	1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	2.8	81	<0.5	<0.5	<0.5	<0.5	<0.5	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-24-94	3	80	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	5.1	72	<0.5	<0.5	<0.5	<0.5	<0.5	5.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-2	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	110	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	6	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	50	36	1	<0.3	<0.4	<0.4	NR	<0.6	<0.6	<0.3	<0.8	<0.2	NR	NR	<0.7	<0.2	<0.8	82
	01-30-91	54	40	2.6	<0.3	<0.4	<0.4	NR	6.8	*21*	0.4	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	15
	07-16-91	68	43	1.1	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.4	NR	NR	0.4	<0.2	0.3	70
	12-23-91	29	19	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.4*	<0.3	<0.2	<0.2	NR	NR	0.6	<0.3	0.6	15
	05-15-92	19	21	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	05-10-93	61	35	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-10-93	32	25	1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	15	47	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	13	15	<0.5	<0.5	<0.5	<0.5	<0.5	3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	14	33	1.4	<0.5	<0.5	<0.5	<0.5	6.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	10	24	<0.5	<0.5	<0.5	<0.5	<0.5	3.9	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-3	04-05-89	<10	40	<10	<10	<10	<10	NR	<10	<10	<10	<10	<0.5	NR	NR	<1	<2	<2	NA
	09-20-89	<20	40	<20	<20	<20	<20	NR	<20	<20	<20	<20	<20	NR	NR	<20	<20	<20	NA
	08-08-90	<2	30	<2	<2	<2	<2	NR	<2	<2	<2	<2	<0.5	NR	NR	<1	<2	<2	NA
	01-10-91	7.7	6.5	0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	0.7	3.1	32
	01-30-91	75	41	2	<0.3	<0.4	<0.4	NR	6.8	*19*	0.4	1.6	<0.2	NR	NR	<0.2	<0.2	<0.2	25
	07-16-91	32	19	0.4	<0.3	<0.4	<0.4	NR	<0.6	*1.1*	<0.3	<0.2	<0.2	NR	NR	0.5	<0.2	<0.2	7.8
	12-23-91	26	31	0.6	<0.3	<0.4	<0.4	NR	1.2	*1.6*	<0.3	<0.2	0.2	NR	NR	0.6	<0.3	0.6	7
	05-15-92	5.4	42	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	05-10-93	52	39	1	<1	<1	<1	<1	6	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-10-93	24	23	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	25	20	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	12	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	08-23-94	12	11	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	26	52	1.9	<0.5	<0.5	<0.5	<0.5	9.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	13	44	<1	<1	<1	<1	<1	3.5	<2	<1	<2	<1	<1	<1	<1	<1	<1	NA
BP-4	01-11-91	2	4	0.4	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	120
	01-30-91	2.1	3.9	<0.3	<0.3	<0.4	<0.4	NR	2.1	20	<0.3	1.7	<0.2	NR	NR	<0.2	<0.2	<0.2	85
	07-16-91	9	7	0.3	<0.3	<0.4	<0.4	NR	<0.6	1	<0.3	<0.3	<0.2	NR	NR	<0.2	<0.2	<0.2	17
	12-26-91	4.2	15	0.6	<0.3	<0.4	<0.4	NR	1.2	17	0.6	<0.2	0.2	NR	NR	1.4	<0.3	0.4	10
	05-15-92	15	24	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	4	7.2	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	0.9	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	30
	05-10-93	8	10	<1	<1	<1	<1	<1	2	<2	<1	<1	3	1	3	10	2	9	<0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	08-09-93	8	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	8	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-23-94	5.4	4.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	10	<0.5	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11-14-96	5	5.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
DUP	11-14-96	4.7	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.94	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-5	01-11-91	35	68	1.3	<0.3	<0.4	<0.4	NR	<0.6	<5	0.8	<0.3	<0.2	NR	NR	<0.7	<0.2	<0.8	125
	01-30-91	40	85	2.8	<0.3	<0.4	<0.4	NR	3.5	19	1.7	1.3	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	53	65	1.1	<0.3	0.5	<0.4	NR	<0.6	1.1	0.7	<0.2	0.2	NR	NR	0.3	<0.2	<0.2	7.7
	12-23-91	170	260	7.8	<0.3	3.6	3.6	NR	<0.6	11	5.4	<0.2	0.6	NR	NR	1.2	<0.3	0.6	18
	05-15-92	22	190	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	11	34	0.7	<0.5	<0.5	<0.5	NR	1.6	<0.5	1.2	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	88
	05-10-93	8	23	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	0.1
DUP	05-10-93	8	24	1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.1
	08-09-93	8	5	<1	<1	<1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-15-94	8	12	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
DUP	02-15-94	7	10	<1	<1	<1	<1	<1	5	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	08-24-94	5.4	4.7	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.9	8.6	<0.5	<0.5	<0.5	<0.5	<0.5	2.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	6.8	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-6	06-28-91	7.5	71	<0.3	<0.3	<0.4	0.5	NR	<0.6	0.6	0.3	<0.2	1.2	NR	NR	0.2	0.9	1	86
	07-18-91	6	48	<0.3	<0.3	<0.4	0.4	NR	<0.6	1	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	23
	05-15-92	3	300	<0.5	<1	<0.5	<0.5	NR	<0.5	<2	<0.5	<1	<0.5	NR	NR	<0.5	<0.5	<0.5	0
	08-25-92	40	86	1	<0.5	<0.5	<0.5	NR	0.6	<0.5	1	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	53
	05-10-93	12	54	<1	<1	<1	<1	<1	2	<2	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-09-93	7	9	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.2
	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.9
DUP	02-14-94	7	16	<1	<1	<1	<1	<1	4	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-23-94	6	15	<0.5	<0.5	<0.5	<0.5	<0.5	3.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.4	19	<0.5	<0.5	<0.5	<0.5	<0.5	4.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
DUP	02-15-95	7	21	<0.5	<0.5	<0.5	<0.5	<0.5	3.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
BP-7	07-16-93	3	~~12~~	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	85
	08-10-93	6	7	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	02-14-94	10	8	<1	<1	<1	<1	<1	6	<1	<1	<1	<1	<1	<1	<1	<1	<1	3.9
	08-24-94	6.1	9.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	6.5	16	<0.5	<0.5	<0.5	<0.5	<0.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
BP-8	07-16-93	9	~~160~~	<1	<1	<1	<1	6	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	200
	08-10-93	7	15	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	0.8
	02-14-94	7	39	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
	08-24-94	4.2	51	<0.5	<0.5	<0.5	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	02-15-95	5.2	64	<0.5	<0.5	<0.5	<0.5	<0.5	4.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5
	11-14-96	4	8.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
Trip Blnk.	01-11-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	<5	<0.3	<0.8	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	01-30-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	0.6	21	<0.3	1.6	<0.2	NR	NR	<0.1	<0.2	<0.8	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	14	<0.3	<0.2	0.2	NR	NR	<0.2	<0.3	<0.4	NA
	08-25-92	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NR	<0.5	<0.5	<0.5	<0.5	<0.5	NR	NR	<0.5	<0.5	<1	NA

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Chlorinated Hydrocarbons (ug/L)											Aromatic Hydrocarbons (ug/L)						Turb. (NTU)
		PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	cis-1,2-DCE	1,1-DCE	Meth. Chloride	Chloro-form	Chloro-benzene	Benzene	1,3,5-TMB	TBB	Toluene	Ethyl-benzene	Total Xylenes	
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	07-16-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-09-93	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
Lab Blnk.	01-30-91	<0.3	<0.3	<0.3	**0.3**	<0.4	<0.4	NR	<0.6	**5.6**	<0.3	**1.6**	<0.2	NR	NR	**0.5**	<0.2	**0.6**	NA
	06-28-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**0.8**	<0.3	<0.2	**0.5**	NR	NR	<0.2	<0.2	<0.2	NA
	07-16-91	<0.3	<0.3	<0.3	<0.3	<0.2	<0.2	NR	<0.6	**1.4**	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.2	<0.2	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**1.6**	<0.3	<0.2	<0.2	NR	NR	<0.2	<0.3	<0.4	NA
	12-19-91	<0.3	<0.3	<0.3	<0.3	<0.4	<0.4	NR	<0.6	**0.4**	<0.3	<0.2	<0.2	NR	NR	**0.5**	<0.3	<0.4	NA
	05-10-93	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-15-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	02-17-94	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NA
	08-26-94	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-15-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	02-16-95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
	11-14-96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	NA
MCL		5	5	200	32	5	0.5	6	6	40	N/A	30	0.7	N/A	N/A	100	680	1750	

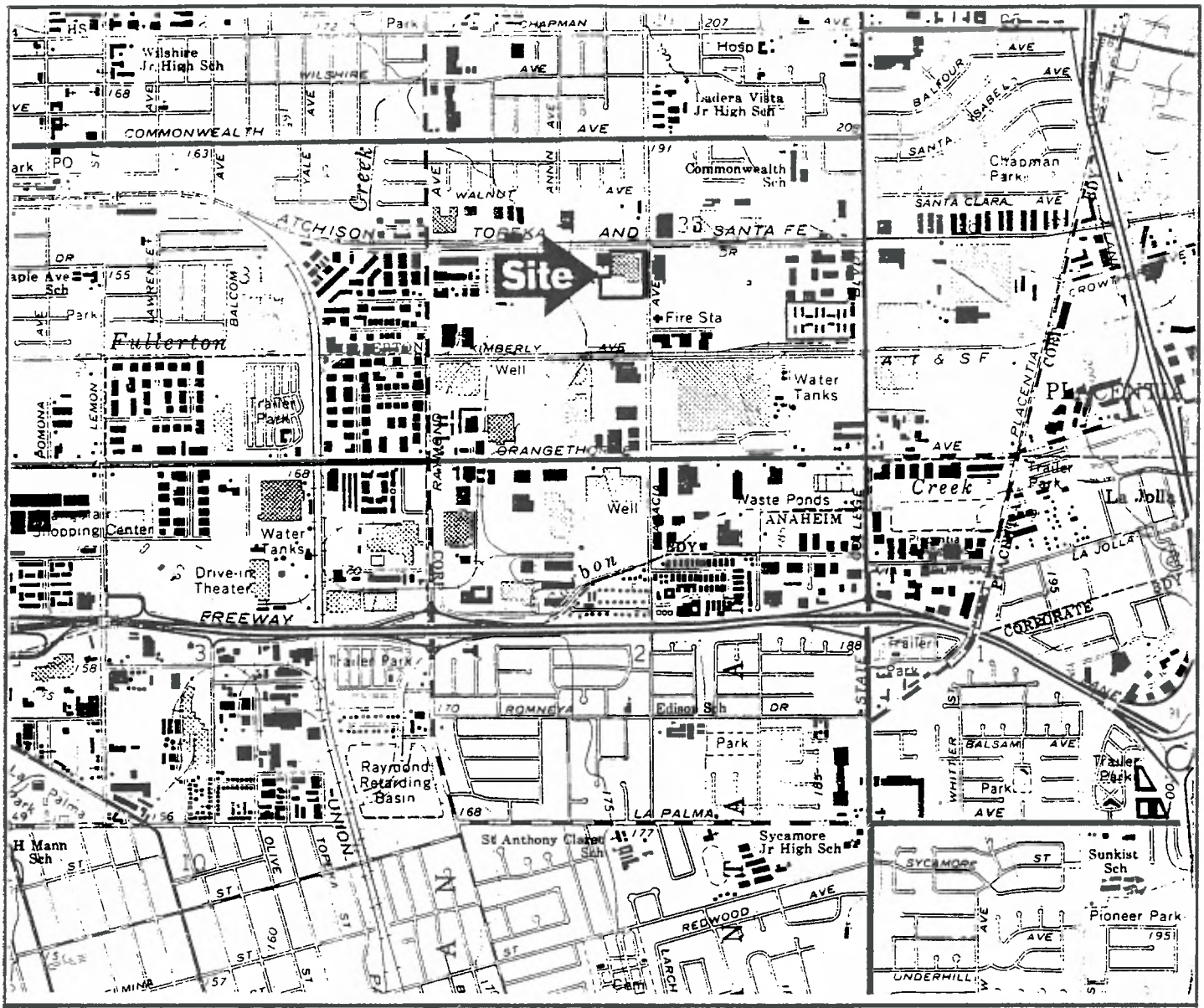
NOTES:

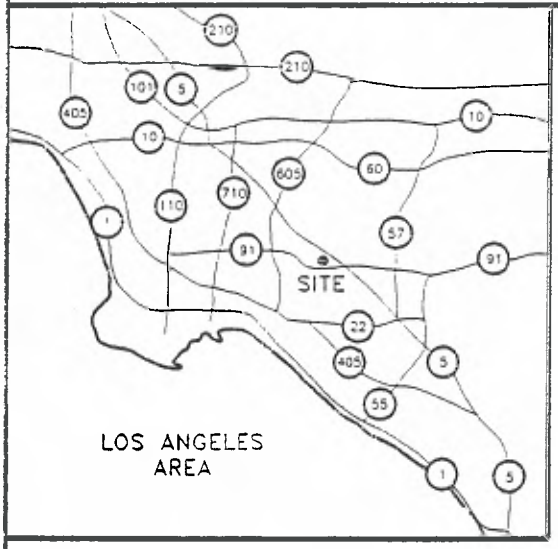
1) Samples were analyzed for volatile organic compounds (VOCs) and turbidity in general accordance with EPA Method Nos. 8021 (8010/8020) and 180.1, respectively.
2) ug/L = micrograms per liter.
3) NTU = nephelometric turbidity unit.
4) PCE = tetrachloroethene.
5) TCE = trichloroethene.
6) TCA = trichloroethane.
7) DCA = dichloroethane.
8) DCE = dichloroethene.
9) Meth. Chloride = methylene chloride.
10) TMB = trimethylbenzene.
11) TBB = tert-butylbenzene.
12) Turb. = turbidity.
13) The less than symbol (<) denores that the compound was not detected at a concentration greater than the indicated laboratory detection limit.
14) Concentrations reported in italics indicate that the compound was also detected in the laboratory method blank for the sample batch.
15) NR = not reported.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR
GROUNDWATER SAMPLES COLLECTED TO DATE

NOTES (continued):

16) NA = not analyzed for.
17) DUP = duplicate sample.
18) Trip Blnk. = deionized water trip blank sample.
19) Lab Blnk. = laboratory internal quality assurance/quality control blank sample analysis.
20) MCL = State maximum contaminant level for drinking water. State action levels were used for methylene chloride and toluene as MCLs were not available for these compounds.
21) N/A = MCL or action level not available for this compound.





NORTH

0 ½ 1

SCALE, MILES

ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

NOTE

BASE MAP IS TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA–ORANGE CO., 7.5–MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

SITE VICINITY MAP

PROJECT NUMBER 14240.0001 | FIGURE 1

VALENCIA DRIVE

APPROXIMATE LIMIT OF SITE

BP-3
65.51
[13/44]

BP-2
65.77
[10/24]

BUILDING
NTS TECHNICAL SERVICES

BUILDING
AMERICAN ELECTRONICS, INC.

65.1

65.2

65.3

65.4

65.5

65.6

65.7

ASPHALT PARKING LOT

ACACIA STREET

METAL SHED

STORAGE SHED

TRANSFORMER

GRADIENT = 0.001 FT/FT

PROPANE TANK

CONCRETE SLAB

METAL SHED

BP-8
65.09
[4/8.3]

[BP-1]

ASPHALT PARKING LOT

CHEMICAL STORAGE AREA

FENCE

[BP-7]

[BP-5]

BP-4
65.65
[5/5.1]

[BP-6]

FORMER CHEMICAL STORAGE AREA

APPROXIMATE LIMIT OF SITE

EXPLANATION

BP-4 — MONITORING WELL LOCATION AND DESIGNATION.

65.65 — GROUNDWATER ELEVATION GIVEN IN FEET RELATIVE TO MEAN SEA LEVEL (MSL).

[5/5.1] — TETRACHLOROETHENE (PCE) AND TRICHLOROETHENE (TCE) CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).

[BP-1] — ABANDONED MONITORING WELL LOCATION (22 NOVEMBER 1996)

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN – PLUMBING," BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960

NORTH

0 80 160

SCALE, FEET

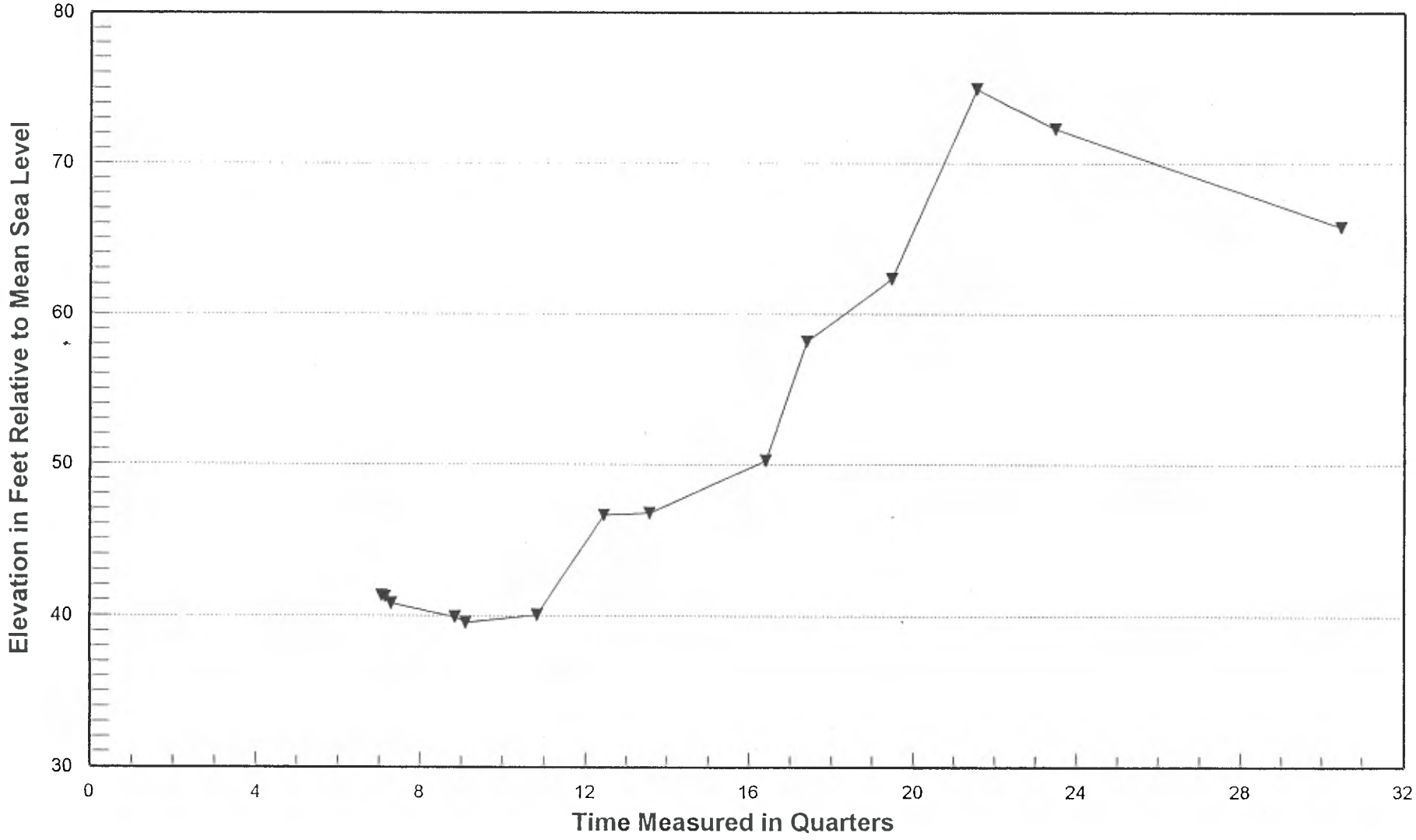
ATC ENVIRONMENTAL INC.
Solutions For Environmental Concerns

GROUNDWATER GRADIENT AND CHEMICAL ANALYTICAL RESULTS NOVEMBER 1996 SAMPLING ROUND

PROJECT NUMBER 14240.0001 | FIGURE 2

Groundwater Elevation -vs- Time

Monitoring Well BP-2

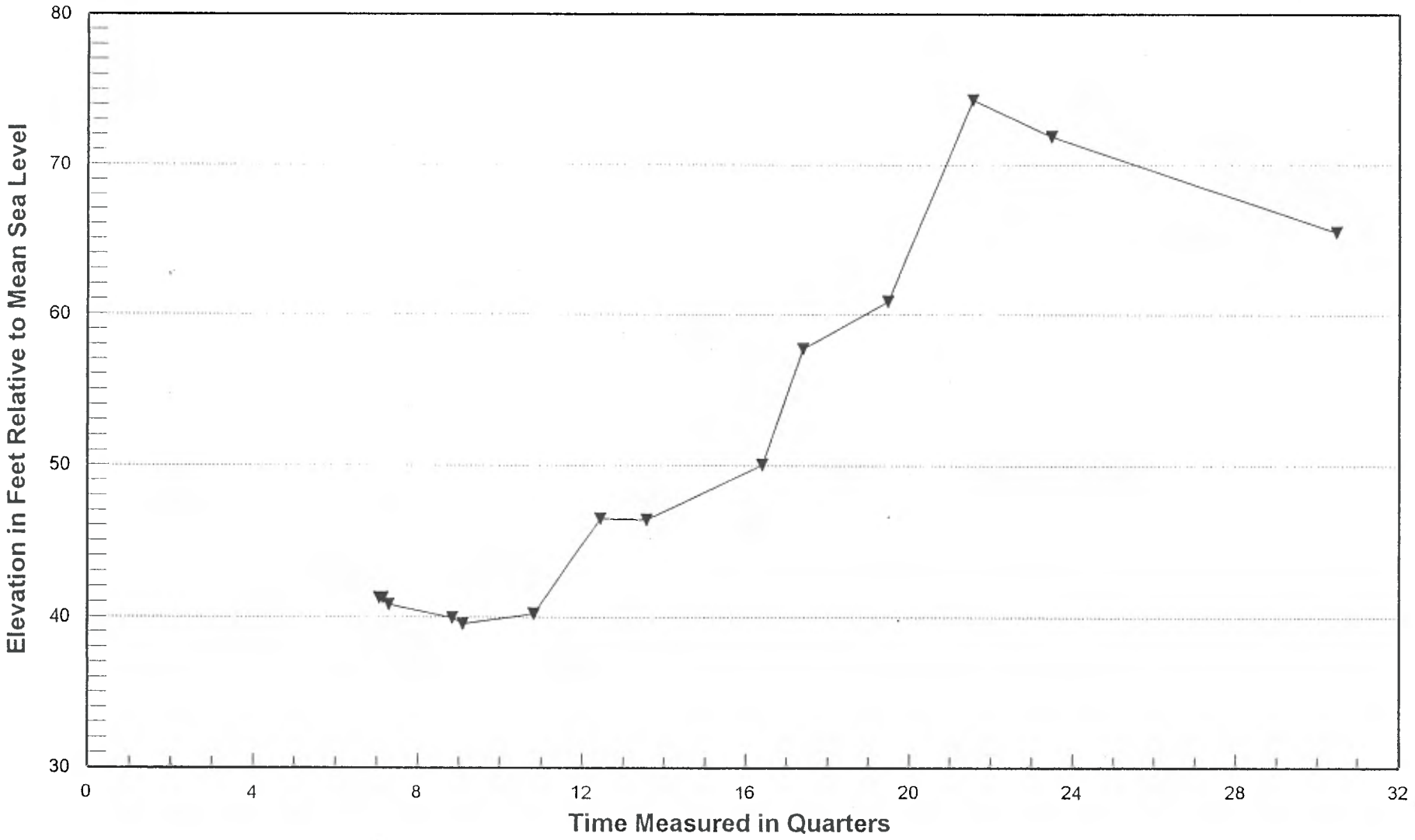


ATC Environmental Inc. AEI - November 1996

Project Number: 14240.0001 Figure: 3

Groundwater Elevation -vs- Time

Monitoring Well BP-3

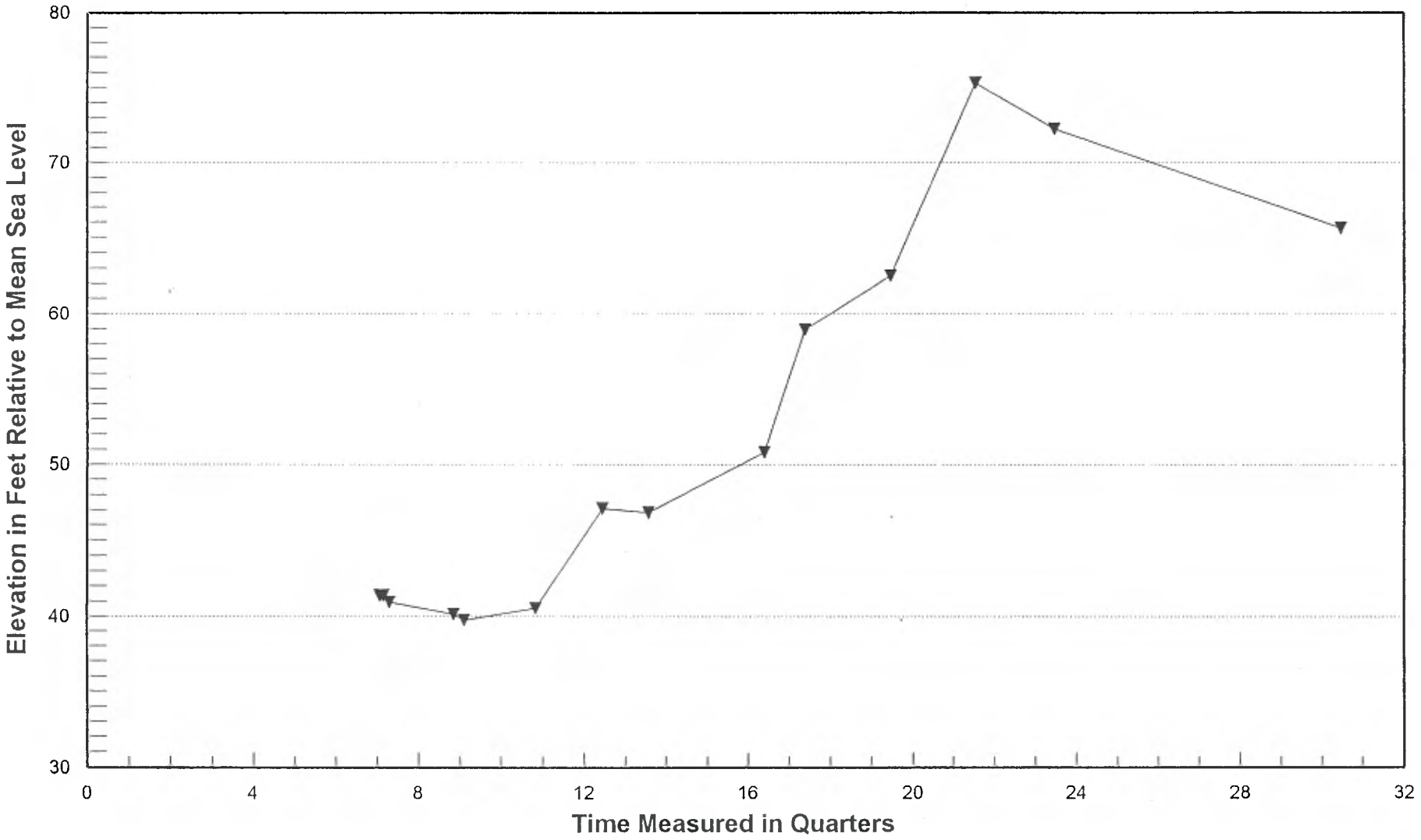


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 4

Groundwater Elevation -vs- Time

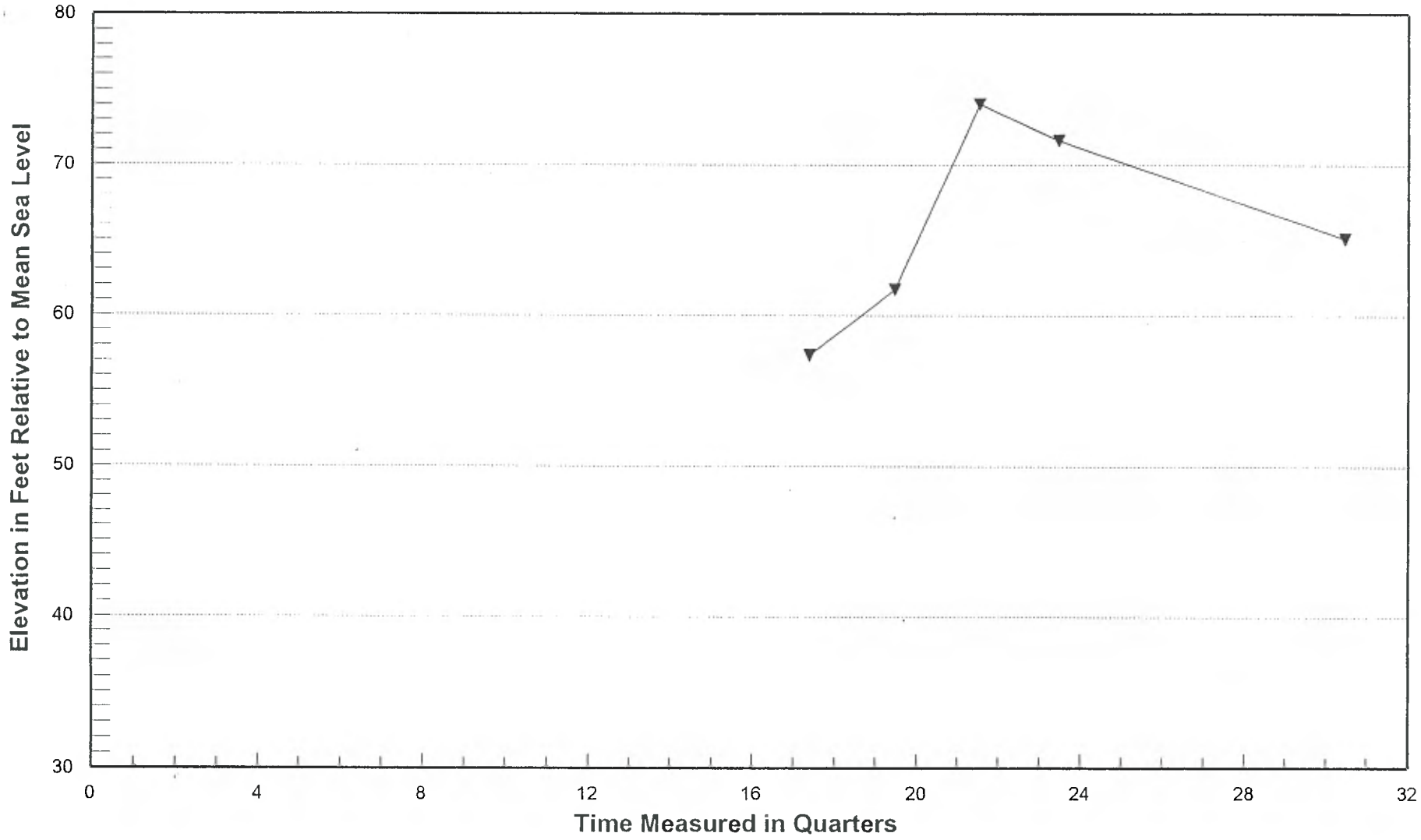
Monitoring Well BP-4



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 5

Groundwater Elevation -vs- Time

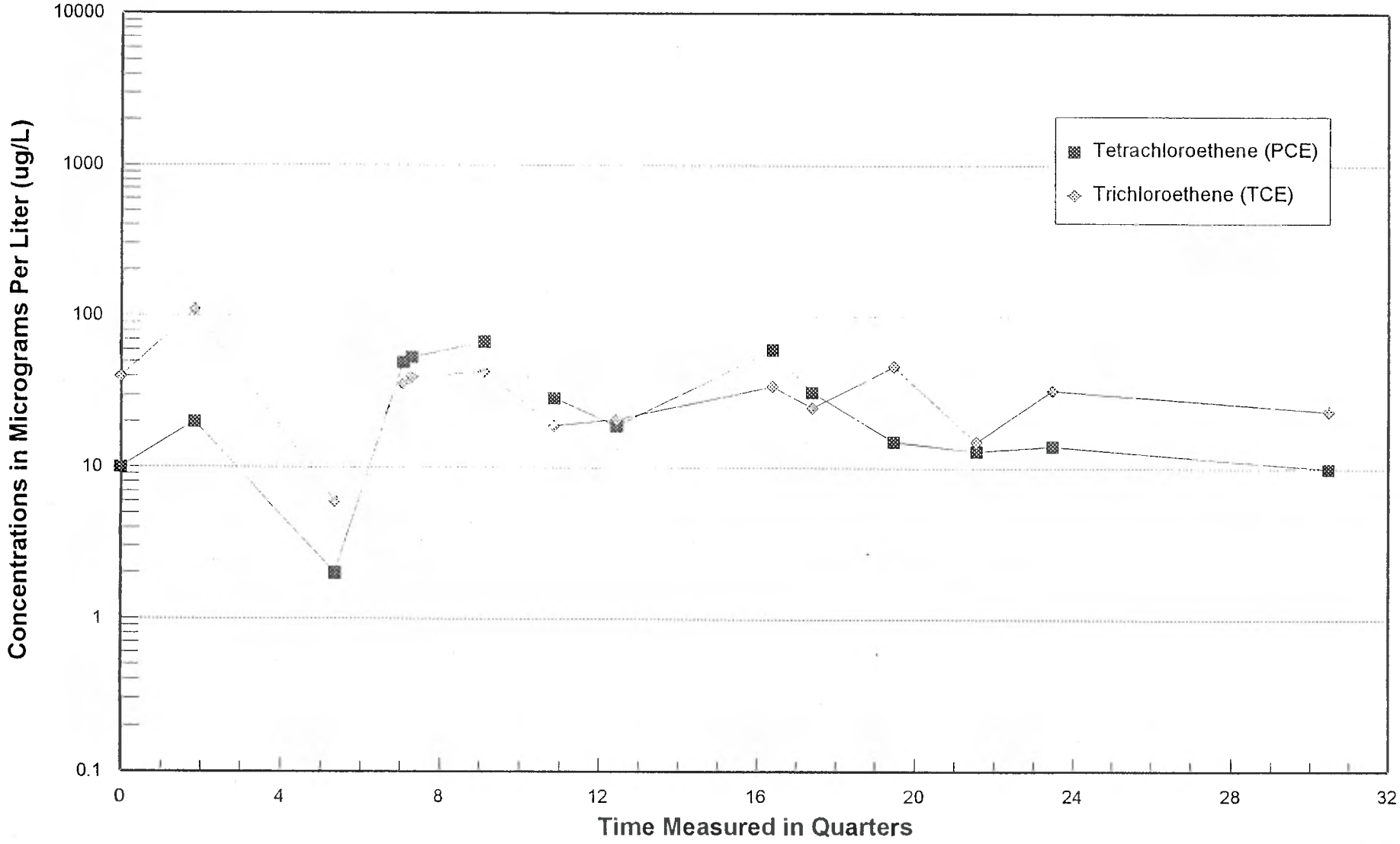
Monitoring Well BP-8



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 6

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-2

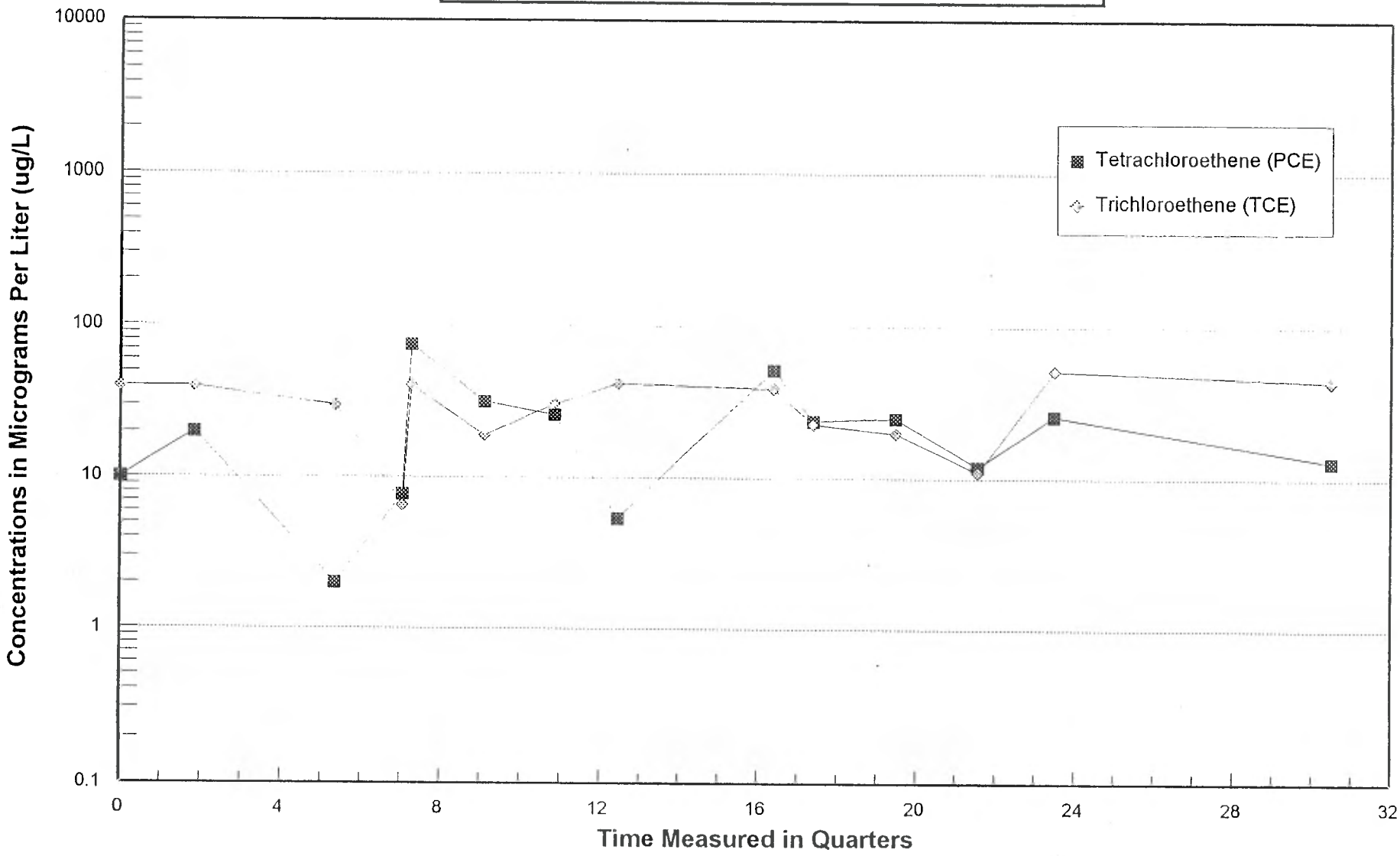


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 7

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-3

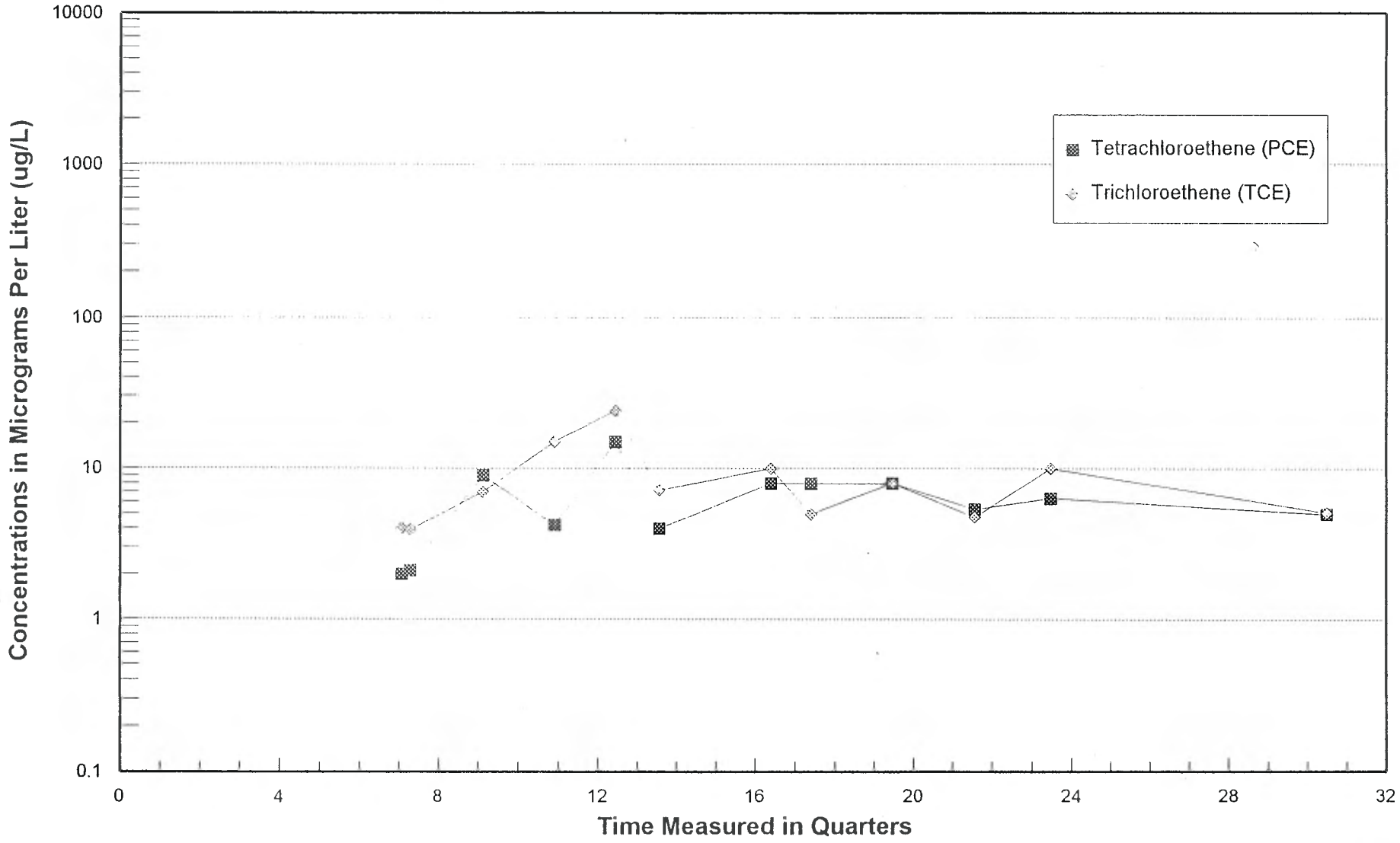


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 8

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-4

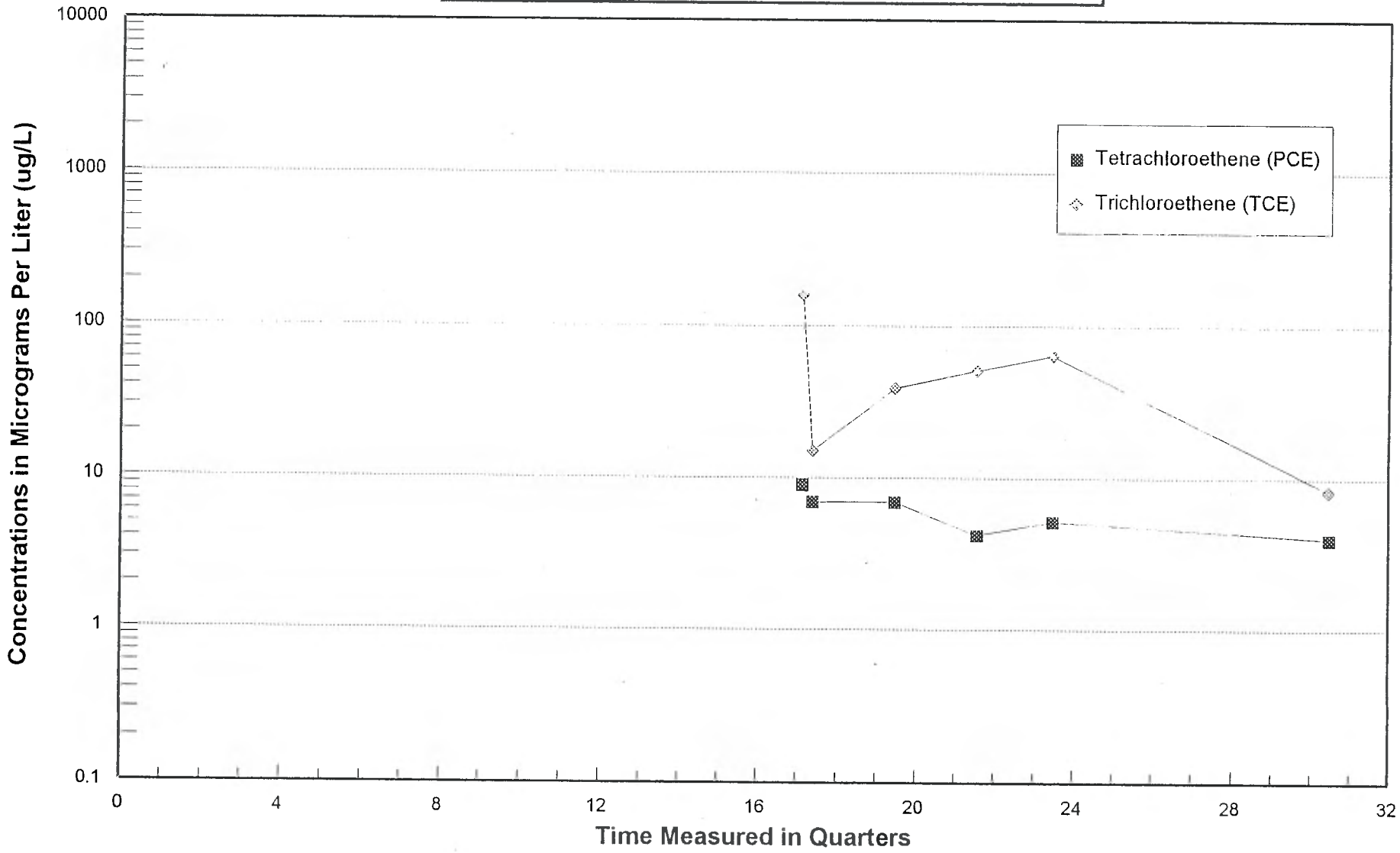


ATC Environmental Inc. **AEI - November 1996**

Project Number: 14240.0001 Figure: 9

PCE & TCE Concentrations -vs- Time

Monitoring Well BP-8



ATC Environmental Inc.	**AEI - November 1996**
Project Number: 14240.0001	Figure: 10

APPENDIX A

FIELD PROCEDURES

APPENDIX A

FIELD PROCEDURES

A.1 Groundwater Sample Collection

1. Prior to sampling, the water level in each well was measured to the nearest 0.01 foot using a conductance probe. Prior to each use, the probe was rinsed in a solution of TSP, followed by two tapwater rinses and deionized-water rinse.

2. Prior to sampling, the wells were purged of standing water with a submersible pump. During purging, measurements of pH, temperature, electrical conductivity, and turbidity were collected for the purged water. Samples were collected from the wells when the measurements of pH, temperature, and electrical conductivity "leveled off" to within 5 percent over three consecutive readings and up to three casing volumes of water were purged from the wells (where possible).

3. The water purged from the wells was placed in Department of Transportation (DOT)-approved 55-gallon drums.

4. The samples were collected using a Grundfos submersible sampling pump, at a flow rate of approximately 100 milliliters per minute. The pump was washed in a laboratory detergent solution and triple-rinsed with deionized water prior to being used and between each well.

A.2 Groundwater Sample Handling

1. The samples collected for chemical analysis were placed in Ziploc bags and stored in an ice chest cooled using ice to a temperature of approximately 40 degrees Fahrenheit.

2. The samples collected for chemical analysis were delivered to the laboratory within 24 hours of collection. Sample handling, transport, and delivery to the laboratory were documented using chain-of-custody procedures.

APPENDIX B

GROUNDWATER COLLECTION LOGS

Groundwater Collection Log

Well Number: BP-2
Sample Number BP-2
Date of Collection: 15-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 115.10
Top of Casing Elevation: 180.61
Groundwater Elevation: 65.51

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
09:48	0	7.20	1.15	18.4	---	Clear, no odor.
09:52	10	6.96	1.41	20.1	---	" "
09:56	20	6.96	1.43	20.4	---	" "
09:59	30	6.97	1.45	20.5	---	" "
10:03	40	6.97	1.45	20.5	---	" "
10:07	50	6.98	1.46	20.5	---	" "
10:11	60	6.98	1.46	20.5	---	" "
10:15	70	6.99	1.47	20.5	---	" "
10:19	80	6.99	1.47	20.5	---	" "
10:23	90	6.99	1.47	20.5	---	" "
10:27	100	6.99	1.47	20.5	---	" "
10:31	110	6.99	1.48	20.5	---	" "
10:35	120	7.01	1.48	20.5	---	" "
10:38	130	7.01	1.48	20.5	---	" "
10:42	140	7.01	1.48	20.5	---	" "
10:46	150	7.01	1.48	20.5	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-3
Sample Number BP-3
Date of Collection: 14-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 115.10
Top of Casing Elevation: 180.61
Groundwater Elevation: 65.51

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
02:08	0	7.20	1.27	19.3	---	Clear, no odor.
02:13	10	7.03	1.47	20.1	---	" "
02:17	20	7.05	1.45	20.3	---	" "
02:21	30	7.01	1.46	20.4	---	" "
02:26	40	7.01	1.48	20.3	---	" "
02:30	50	7.09	1.47	20.3	---	" "
02:35	60	7.06	1.47	20.2	---	" "
02:39	70	7.05	1.47	20.2	---	" "
02:44	80	7.06	1.46	20.3	---	" "
02:48	90	7.07	1.45	20.1	---	" "
02:51	100	7.05	1.45	20.3	---	" "
02:56	110	7.06	1.44	20.3	---	" "
03:01	120	7.04	1.44	20.3	---	" "
03:05	130	7.06	1.44	20.2	---	" "
03:09	140	7.09	1.44	20.2	---	" "
03:13	150	7.11	1.43	20.1	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-4
Sample Number: BP-4 & BP-A
Date of Collection: 15-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 114.24
Top of Casing Elevation: 179.89
Groundwater Elevation: 65.65

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
07:52	0	6.15	1.22	17.2	---	Clear, no odor.
07:57	10	6.59	1.22	19.6	---	" "
08:00	20	6.76	1.20	19.9	---	" "
08:04	30	6.87	1.19	19.9	---	" "
08:07	40	6.90	1.19	20.0	---	" "
08:12	50	6.93	1.19	19.9	---	" "
08:16	60	6.96	1.18	19.8	---	" "
08:20	70	6.96	1.18	19.8	---	" "
08:24	80	6.97	1.17	19.9	---	" "
08:28	90	6.99	1.17	20.0	---	" "
08:31	100	7.02	1.19	20.0	---	" "
08:35	110	7.02	1.17	20.0	---	" "
08:39	120	7.04	1.17	20.0	---	" "
08:43	130	7.07	1.17	19.7	---	" "
08:47	140	7.06	1.17	19.9	---	" "
08:50	150	7.14	1.18	19.6	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

Groundwater Collection Log

Well Number: BP-8
Sample Number BP-8
Date of Collection: 14-Nov-96
Page 1 of 1

Project Number: 14240.0001
Project Name: American Electronics
Purge Method: 2" Submersible Pump
Sample Method: 2" Submersible Pump

Depth to Groundwater: 111.77
Top of Casing Elevation: 177.51
Groundwater Elevation: 65.74

Time	Gallons Purged	pH	Electrical Conductivity	Temp. (C)	Turbidity NTUs	Comments
10:50	0	5.95	1.21	19.3	---	Clear, no odor.
10:55	10	6.70	1.18	20.0	---	" "
10:59	20	6.89	1.17	20.2	---	" "
11:03	30	6.94	1.17	20.2	---	" "
11:09	40	7.00	1.18	20.2	---	" "
11:12	50	7.03	1.24	20.3	---	" "
11:16	60	7.04	1.18	20.3	---	" "
11:20	70	7.06	1.18	20.1	---	" "
11:24	80	7.09	1.18	20.2	---	" "
11:29	90	7.11	1.18	20.2	---	" "
11:32	100	7.07	1.18	20.3	---	" "
11:36	110	7.12	1.18	20.2	---	" "
11:40	120	7.13	1.18	20.2	---	" "
11:44	130	7.14	1.19	20.2	---	" "
11:48	140	7.15	1.19	20.1	---	" "
11:53	150	7.23	1.19	20.1	---	" "

General Notes:
Turbidity meter not functioning.

1	Number of Samples
2	VOA Vial(s)
---	1 Liter Bottle(s)
---	Other:

Date Shipped to Laboratory:	15-Nov-96
Laboratory Shipped To:	Del Mar Analytical
Method of Shipment:	Delivered by Sampler
Sampler:	Parker Steel

APPENDIX C

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

Del Mar Analytical

2852 Alton Ave., Irvine, CA 92714 (714) 261-1022 FAX (714) 261-1228
1014 E. Cooley Dr., Suite A, Colton CA 92324 (909) 370-4667 FAX (909) 370-1046
16525 Sherman Way, Suite C-11, Van Nuys, CA 91406 (818) 779-1844 FAX (818) 779-1843
2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-3
Lab Number: FK02815

RECEIVED

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	1.0	N.D.	trans-1,3-Dichloropropene	1.0	N.D.
Bromobenzene	1.0	N.D.	Ethylbenzene	1.0	N.D.
Bromochloromethane	1.0	N.D.	Hexachlorobutadiene	1.0	N.D.
Bromodichloromethane	1.0	N.D.	Isopropylbenzene	1.0	N.D.
Bromoform	1.0	N.D.	p-Isopropyltoluene	1.0	N.D.
Bromomethane	2.0	N.D.	Methylene chloride	2.0	N.D.
n-Butylbenzene	1.0	N.D.	Naphthalene	1.0	N.D.
sec-Butylbenzene	1.0	N.D.	n-Propylbenzene	1.0	N.D.
tert-Butylbenzene	1.0	N.D.	Styrene	1.0	N.D.
Carbon tetrachloride	1.0	N.D.	1,1,1,2-Tetrachloroethane	1.0	N.D.
Chlorobenzene	2.0	N.D.	1,1,2,2-Tetrachloroethane	1.0	N.D.
Chloroethane	5.0	N.D.	**Tetrachloroethene**	**1.0**	**13**
2-Chloroethylvinyl Ether	5.0	N.D.	Toluene	1.0	N.D.
Chloroform	1.0	N.D.	1,2,3-Trichlorobenzene	1.0	N.D.
Chloromethane	2.0	N.D.	1,2,4-Trichlorobenzene	1.0	N.D.
2-Chlorotoluene	1.0	N.D.	1,1,1-Trichloroethane	1.0	N.D.
4-Chlorotoluene	1.0	N.D.	1,1,2-Trichloroethane	1.0	N.D.
Dibromochloromethane	1.0	N.D.	**Trichloroethene**	**1.0**	**44**
1,2-Dibromo-3-chloropropane	1.0	N.D.	Trichlorofluoromethane	1.0	N.D.
1,2-Dibromoethane	1.0	N.D.	1,2,3-Trichloropropane	1.0	N.D.
Dibromomethane	1.0	N.D.	1,2,4-Trimethylbenzene	1.0	N.D.
1,2-Dichlorobenzene	2.0	N.D.	1,3,5-Trimethylbenzene	1.0	N.D.
1,3-Dichlorobenzene	2.0	N.D.	Vinyl chloride	1.0	N.D.
1,4-Dichlorobenzene	2.0	N.D.	o-Xylene	1.0	N.D.
Dichlorodifluoromethane	1.0	N.D.	m,p-Xylenes	2.0	N.D.
1,1-Dichloroethane	1.0	N.D.			
1,2-Dichloroethane	1.0	N.D.			
1,1-Dichloroethene	**1.0**	**3.5**			
cis-1,2-Dichloroethene	1.0	N.D.			
trans-1,2-Dichloroethene	1.0	N.D.			
1,2-Dichloropropane	1.0	N.D.			
1,3-Dichloropropane	1.0	N.D.			
2,2-Dichloropropane	1.0	N.D.			
1,1-Dichloropropene	1.0	N.D.			
cis-1,3-Dichloropropene	1.0	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection. Due to matrix effects and/or other factors, the sample required dilution. Detection limits for this sample have been raised by a factor of 2.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	98%
a,a,a-Trifluorotoluene	98%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical

Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-8
Lab Number: FK02816

Sampled: Nov 14, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**4.0**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**8.3**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**1.1**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Method Blank

Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996
Matrix: Water

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	N.D.			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	101%
a,a,a-Trifluorotoluene	100%

Results pertain only to samples tested in the laboratory. This report shall not be reproduced, except in full, without written permission from Del Mar Analytical

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-133

MS/MSD DATA REPORT

EPA METHOD: 8021
Matrix: Water

Date: 11/25/96

Sample #: BLANK

Batch #: FK25111W

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	10	9.9	9.9	99%	99%	0.57%	99%
Chloroform	0	10	9.7	8.7	97%	87%	12%	92%
1,1-Dichloroethane	0	10	9.0	9.1	90%	91%	1.2%	91%
1,2-Dichloroethane	0	10	9.6	9.7	96%	97%	1.4%	97%
1,1-Dichloroethene	0	10	8.7	8.9	87%	89%	1.7%	88%
Tetrachloroethene	0	10	9.3	9.2	93%	92%	0.92%	92%
Toluene	0	10	10	10	101%	101%	0.058%	101%
Trichloroethene	0	10	9.2	9.4	92%	94%	1.6%	93%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS; ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD; ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference; ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

TC L...ROI...NTA... ...C.

Chain of Custody

ATC ENVIRONMENTAL INC.

17321 Irvine Blvd.
Tustin, CA 92780
(714) 734-0303 • Fax (714) 734-0510

Project Name: American Electronics
Project Number: 14240.0001
Project Manager: Will Weaver

Laboratory Name:

Method of Shipment: HAND DEL

Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270					
BP-3			11/14		X		X	X						X						
BP-8			11/14		X		X	X						X						

Remarks:
- Please FAX results to Will Weaver at 714-734-0510

INTACT / COOL

Turnaround Time:
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

	Date	Time		Date	Time
Relinquished by sampler: Paul Roberts	11/15/96	8:25	Received by:	11/15	8:25
Relinquished by:	11/15	9:52	Received by:		
Relinquished by:	Date	Time	Received by laboratory:	11/15	9:52

Del Mar Analytical

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-2
Lab Number: FK02812

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**10**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**24**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**3.9**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D			
1,3-Dichloropropane	0.50	N.D			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	100%
a,a,a-Trifluorotoluene	101%

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-4
Lab Number: FK02813

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	**Tetrachloroethene**	**0.50**	**5.0**
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	**Trichloroethene**	**0.50**	**5.1**
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	**0.50**	**1.1**			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	97%
a,a,a-Trifluorotoluene	99%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-1338

ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Client Project ID: 14240.0001
American Electronics
Sample Descript: Water, BP-A
Lab Number: FK02814

Sampled: Nov 15, 1996
Received: Nov 15, 1996
Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.
Bromobenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
n-Butylbenzene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	1.0	N.D.
Chloroethane	2.5	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
2-Chlorotoluene	0.50	N.D.
4-Chlorotoluene	0.50	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.
Dibromomethane	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
Dichlorodifluoromethane	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	**0.50**	**0.94**
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D
1,3-Dichloropropane	0.50	N.D.
2,2-Dichloropropane	0.50	N.D.
1,1-Dichloropropene	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Ethylbenzene	0.50	N.D.
Hexachlorobutadiene	0.50	N.D.
Isopropylbenzene	0.50	N.D.
p-Isopropyltoluene	0.50	N.D.
Methylene chloride	1.0	N.D.
Naphthalene	0.50	N.D.
n-Propylbenzene	0.50	N.D.
Styrene	0.50	N.D.
1,1,1,2-Tetrachloroethane	0.50	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	**0.50**	**4.7**
Toluene	0.50	N.D.
1,2,3-Trichlorobenzene	0.50	N.D.
1,2,4-Trichlorobenzene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	**0.50**	**4.7**
Trichlorofluoromethane	0.50	N.D.
1,2,3-Trichloropropane	0.50	N.D.
1,2,4-Trimethylbenzene	0.50	N.D.
1,3,5-Trimethylbenzene	0.50	N.D.
Vinyl chloride	0.50	N.D.
o-Xylene	0.50	N.D.
m,p-Xylenes	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	96%
a,a,a-Trifluorotoluene	98%

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ATC Environmental
17321 Irvine Blvd.
Tustin, CA 92680
Attention: Will Weaver

Method Blank

Extracted: Nov 25, 1996
Analyzed: Nov 25, 1996
Reported: Nov 26, 1996
Matrix: Water

HALOGENATED VOLATILES by GC (EPA 8021)

Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)	Analyte	Detection Limit µg/L (ppb)	Sample Result µg/L (ppb)
Benzene	0.50	N.D.	trans-1,3-Dichloropropene	0.50	N.D.
Bromobenzene	0.50	N.D.	Ethylbenzene	0.50	N.D.
Bromochloromethane	0.50	N.D.	Hexachlorobutadiene	0.50	N.D.
Bromodichloromethane	0.50	N.D.	Isopropylbenzene	0.50	N.D.
Bromoform	0.50	N.D.	p-Isopropyltoluene	0.50	N.D.
Bromomethane	1.0	N.D.	Methylene chloride	1.0	N.D.
n-Butylbenzene	0.50	N.D.	Naphthalene	0.50	N.D.
sec-Butylbenzene	0.50	N.D.	n-Propylbenzene	0.50	N.D.
tert-Butylbenzene	0.50	N.D.	Styrene	0.50	N.D.
Carbon tetrachloride	0.50	N.D.	1,1,1,2-Tetrachloroethane	0.50	N.D.
Chlorobenzene	1.0	N.D.	1,1,2,2-Tetrachloroethane	0.50	N.D.
Chloroethane	2.5	N.D.	Tetrachloroethene	0.50	N.D.
2-Chloroethylvinyl Ether	2.5	N.D.	Toluene	0.50	N.D.
Chloroform	0.50	N.D.	1,2,3-Trichlorobenzene	0.50	N.D.
Chloromethane	1.0	N.D.	1,2,4-Trichlorobenzene	0.50	N.D.
2-Chlorotoluene	0.50	N.D.	1,1,1-Trichloroethane	0.50	N.D.
4-Chlorotoluene	0.50	N.D.	1,1,2-Trichloroethane	0.50	N.D.
Dibromochloromethane	0.50	N.D.	Trichloroethene	0.50	N.D.
1,2-Dibromo-3-chloropropane	0.50	N.D.	Trichlorofluoromethane	0.50	N.D.
1,2-Dibromoethane	0.50	N.D.	1,2,3-Trichloropropane	0.50	N.D.
Dibromomethane	0.50	N.D.	1,2,4-Trimethylbenzene	0.50	N.D.
1,2-Dichlorobenzene	1.0	N.D.	1,3,5-Trimethylbenzene	0.50	N.D.
1,3-Dichlorobenzene	1.0	N.D.	Vinyl chloride	0.50	N.D.
1,4-Dichlorobenzene	1.0	N.D.	o-Xylene	0.50	N.D.
Dichlorodifluoromethane	0.50	N.D.	m,p-Xylenes	1.0	N.D.
1,1-Dichloroethane	0.50	N.D.			
1,2-Dichloroethane	0.50	N.D.			
1,1-Dichloroethene	0.50	N.D.			
cis-1,2-Dichloroethene	0.50	N.D.			
trans-1,2-Dichloroethene	0.50	N.D.			
1,2-Dichloropropane	0.50	N.D.			
1,3-Dichloropropane	0.50	N.D.			
2,2-Dichloropropane	0.50	N.D.			
1,1-Dichloropropene	0.50	N.D.			
cis-1,3-Dichloropropene	0.50	N.D.			

Analytes reported as N.D. were not present above the stated limit of detection.

DEL MAR ANALYTICAL (ELAP #1197)

Rick DiMaio
Project Manager

Surrogate Standard Recoveries:	
1-Chloro-3-fluorobenzene	101%
a,a,a-Trifluorotoluene	100%

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2465 W. 12th St., Suite 1, Tempe, AZ 85281 (602) 968-8272 FAX (602) 968-13..

MS/MSD DATA REPORT

EPA METHOD: 8021
Matrix: Water

Date: 11/25/96

Sample #: BLANK

Batch #: FK25111W

Analyte	R1	Sp	MS	MSD	PR1	PR2	RPD	MEAN PR
	ppb	ppb	ppb	ppb	%	%	%	%
Benzene	0	10	9.9	9.9	99%	99%	0.57%	99%
Chloroform	0	10	9.7	8.7	97%	87%	12%	92%
1,1-Dichloroethane	0	10	9.0	9.1	90%	91%	1.2%	91%
1,2-Dichloroethane	0	10	9.6	9.7	96%	97%	1.4%	97%
1,1-Dichloroethene	0	10	8.7	8.9	87%	89%	1.7%	88%
Tetrachloroethene	0	10	9.3	9.2	93%	92%	0.92%	92%
Toluene	0	10	10	10	101%	101%	0.058%	101%
Trichloroethene	0	10	9.2	9.4	92%	94%	1.6%	93%

Definition of Terms:

R1..... Result of Sample Analysis

Sp..... Spike Concentration Added to Sample

MS..... Matrix Spike Result

MSD..... Matrix Spike Duplicate Result

PR1..... Percent Recovery of MS: ((MS-R1) / SP) X 100

PR2..... Percent Recovery of MSD: ((MSD-R1) / SP) X 100

RPD..... Relative Percent Difference: ((MS-MSD)/(MS+MSD)/2)) X 100

Del Mar Analytical

ATC ENVIRONMENTAL INC.

Chain of Custody

ATC ENVIRONMENTAL INC.
17321 Irvine Blvd.
Tustin, CA 92780
(714) 734-0303 • Fax (714) 734-0510

Project Name: American Electronics
Project Number: 14240.0001
Project Manager: Will Weaver

Laboratory Name: Del Mar Analytical
Method of Shipment: Delivery
Special QA / QC:

Sample I.D.	Boring / Well	Depth / Time	Date of Collection	Matrix: Soil	Matrix: Water	Matrix: Other	Pres.: Ice	Pres.: Acid	TPH 8015 Modified Gas __ Diesel __	BTEX EPA 8020	BTEX / TPH EPA 8015 / 8020	TPH EPA 418.1	VOCs EPA 8260 / 8240	VOCs EPA 8021	BNAs EPA 8270
BP-2			11-15		X		X	X						X	
BP-4			↓		↓		↓	↓						↓	
BP-A			↓		↓		↓	↓						↓	
									-2 x 40 mL VOAs				per sample		

Remarks:
- Fax results to Will Weaver at 714-734-0510

intact
cool

Turnaround Time
- Same Day ☐
- Priority Rush 1 Business Day ☐
- Rush 2 Business Days ☐
- Standard 5 to 10 Business Days ☒
- Other ___ Business Days ☐

Relinquished by sampler	Date	Time	Received by
Relinquished by	Date	Time	Received by
Relinquished by	Date	Time	Received by laboratory
	11-15-96	3:40	11/15/96 3:40

ATC ASSOCIATES INC.
ENVIRONMENTAL, GEOTECHNICAL AND MATERIALS PROFESSIONALS

JAN 1998
Received
CRWQCB
Santa Ana Region 8

8 January 1998
14240.0003

California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

Attention: Mr. Augustine Anijielo

SUBJECT: DECEMBER 1997 GROUNDWATER MONITORING REPORT FOR THE AMERICAN ELECTRONICS, INC. FACILITY, LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Anijielo:

This letter report summarizes the activities and results of the December 1997 round of groundwater monitoring conducted on 4 December 1997 at the American Electronics, Inc. (AEI) facility (site) located at 1600 East Valencia Drive, Fullerton, California (Figure 1). This round of groundwater monitoring was conducted at the request of the California Regional Water Quality Control Board - Santa Ana Region (RWQCB) and this letter report is presented to you at the request and authorization of Mr. William E. Holland of AEI.

The locations of the four wells that were sampled at the site, designated BP-2, BP-3, BP-4 and BP-8 are shown in Figure 2. Monitoring wells BP-1, BP-5, BP-6, and BP-7 were abandoned in 1996 in accordance with the conditions stated in the RWQCB review letter dated 20 June 1996 (RWQCB, 1996). The well abandonment procedures were documented in a letter to the RWQCB dated 6 December 1996 (ATC Environmental Inc., 1996). Fifteen rounds of groundwater monitoring samples have been collected from monitoring wells BP-2 and BP-3 since their installation in March 1989; thirteen rounds of groundwater monitoring samples have been collected from monitoring well BP-4 since its installation in December 1990; and seven rounds of groundwater monitoring samples have been collected from off-site monitoring well BP-8 since its installation in July 1993.

OBJECTIVE

The objective of the work summarized in this report was to monitor the spatial and temporal changes in the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

APPLIED GEOSCIENCES INC.
Environmental Consultants

29B Technology Drive
Suite 100
Irvine, CA 92718
TEL: 714/453-8545
FAX: 714/453-0510

6 July 1992
A901978D
AED-4

California Regional Water Quality Control Board
Santa Ana Region
2010 Iowa Avenue, Suite 100
Riverside, California 92507-2409

Attention: Mr. Dennis L. Merklin

SUBJECT: SECOND ROUND OF QUARTERLY GROUNDWATER MONITORING FOR THE AMERICAN ELECTRONICS INC. FACILITY LOCATED IN FULLERTON, CALIFORNIA

Dear Mr. Merklin:

This letter report presents the results of the second round of quarterly groundwater monitoring conducted at the American Electronics, Inc. facility (site), located at 1600 East Valencia Drive, Fullerton, California (Figure 1). The work was conducted by Applied Geosciences Inc. in general accordance with Amendment 1 to Attachment 4 to the existing contract between Applied Geosciences Inc. and American Electronics. The results of a subsurface investigation and the first round of quarterly groundwater monitoring at the site were summarized in a letter report to the Regional Water Quality Control Board dated 18 March 1992.

OBJECTIVE

The objective of the work summarized in this report was to monitor the concentrations of volatile organic compounds (VOCs) present in the shallow groundwater beneath the site.

SCOPE OF WORK

The scope of work developed to meet the objectives included the following.

- Task 1: Groundwater Monitoring

  This task included measurement of groundwater elevations, purging wells of standing water, and collection of groundwater samples for chemical analysis from

five of the six groundwater monitoring wells located at the site. Groundwater monitoring well BP-1 was not included in the monitoring program because of the lack of groundwater in that well in previous rounds of groundwater monitoring.

- Task 2: Laboratory Analyses

  Groundwater samples from each of the five wells were analyzed for VOCs and turbidity in general accordance with U.S. Environmental Protection Agency (EPA) Method Nos. 601/602 and 180.1, respectively.

- Task 3: Data Evaluation, Reporting, and Project Management

  This task consisted of management of the field activities and preparation of this report.

GROUNDWATER MONITORING

Groundwater Sampling

Groundwater level measurements were conducted on 14 May 1992 in accordance with the groundwater sampling procedures presented in Appendix A (Section A1.0). The results are listed in Table 1. Groundwater samples were collected on 14 and 15 May 1992 in accordance with the groundwater sampling procedures presented in Appendix A (Section A1.0). Well BP-1 was not sampled because it had contained only approximately 2 feet of measurable groundwater in December 1990, approximately 0.5 foot in June 1991, approximately 1 foot in December 1991, and it was judged that this well would not provide a representative groundwater sample. As mentioned in our previous report, well BP-5 was installed to replace well BP-1 for this reason (Applied Geosciences Inc., 1991). Groundwater samples collected from the wells were submitted for chemical analyses as discussed below to Orange Coast Analytical, Inc. of Tustin, California, a State-certified laboratory. Groundwater collection logs are presented in Appendix A.

ANALYTICAL RESULTS

Groundwater Samples

Groundwater samples were analyzed for VOCs in general accordance with EPA Method No. 601/602. A companion sample of each was analyzed for turbidity in general accordance with EPA Method No. 180.1. Results of the VOC laboratory analyses are summarized in Table 2, and the laboratory reports are presented in Appendix B. Table 2 also presents the analytical results for the groundwater samples collected during previous investigations by Applied Geosciences Inc. and others; and the maximum contaminant levels (MCLs) as published in the California Code of Regulations (CCR), Title 22, for the given chemical constituents.

Two VOCs, trichloroethene (TCE) and tetrachloroethene (PCE), were detected in the groundwater samples collected during this phase of the investigation. The highest reported concentration of TCE was 300 ppb in the sample collected from well BP-6, and the lowest concentration of TCE reported was 21 ppb in the sample collected from well BP-2.

The highest reported concentration of PCE encountered during this phase of the investigation was 30 ppb in the sample collected from well BP-6 and the lowest concentration of PCE reported was 1.5 ppb in the sample collected from well BP-4.

DISCUSSION

Groundwater Monitoring

The groundwater gradient is interpreted to be relatively flat with a general flow direction to the west and northwest (Figure 2). The relatively flat groundwater gradient makes accurate assessments of the groundwater flow direction difficult, and fluctuations have been observed between groundwater monitoring dates. Groundwater elevations were observed to have risen approximately 6.5 feet in each of the six wells at the site between the last elevation measurement in December 1991 and this round of monitoring (Table 1).

VOCs detected in groundwater samples collected during this round of monitoring were TCE and PCE; no other VOCs were detected above their respective detection limits.

Should you have any questions regarding the information contained in this letter report, please feel free to contact either of us at your convenience.

Very truly yours,
APPLIED GEOSCIENCES INC.

Mark S. Cousineau, R.E.A.
Associate

Craig A. Metheny, R.E.A.
Project Manager

Elliot Leventhal
Staff Scientist

ATTACHMENTS

Table 1: Groundwater Elevation Measurements
Table 2: Laboratory Analytical Results of Groundwater Samples Collected to Date
Figure 1: Site Vicinity Map
Figure 2: Groundwater Elevations Measured 14 May 1992
Appendix A: Summary of Field Procedures
Appendix B: Laboratory Analytical Reports

cc: John Allen, Esq., Graham & James
Mr. Richard F. Holland, American Electronics
David T. Peterson, Esq., Hill, Wynne, Troop and Meisinger
Mr. Fred B. Warburton, Yokohama Tire Center

REFERENCES

Applied Geosciences Inc., 1991, Phase II subsurface investigation for the American Electronics Inc. facility located at 1600 East Valencia Drive in the city of Fullerton, California: Dated 30 August 1991.

Applied Geosciences Inc., 1992, Additional subsurface investigation and first quarterly round of groundwater monitoring for the American Electronics Inc. facility located in Fullerton, California: Dated 18 March 1992.

TABLE 1

GROUNDWATER ELEVATION MEASUREMENTS

GROUNDWATER SURFACE MEASUREMENTS												
Well Number	BP-1		BP-2		BP-3		BP-4		BP-5		BP-6	
Elevation of the Top of the Well Casing	178.14		183.13		180.61		179.89		177.69		177.31	
Date	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.	Depth	Elev.
1/10/91	136.68	41.46	141.81	41.32	139.34	41.27	138.50	41.39	136.80	40.89	NM	NM
1/17/91	136.74	41.40	141.90	41.23	139.34	41.27	138.49	41.40	136.80	40.89	NM	NM
1/30/91	137.13	41.01	142.30	40.83	139.79	40.82	138.95	40.94	137.31	40.38	NM	NM
6/21/91	NM	NM	143.19	39.94	140.66	39.95	139.76	40.13	138.09	39.60	137.50	39.81
7/15/91	138.39	39.75	143.55	39.58	141.05	39.56	140.15	39.74	138.50	39.19	137.93	39.38
12/19/91	138.05	40.09	143.05	40.08	140.40	40.21	139.34	40.55	137.75	39.94	137.35	39.96
5/14/92	131.71	46.43	136.50	46.63	134.13	46.48	132.77	47.12	131.34	46.35	130.90	46.41

Notes:

Elevation data are given in feet above mean sea level.
Depth = depth-to-groundwater measured in feet below top of well casing.
NM = no groundwater measurements were made.

TABLE 2
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Turbidity	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									
			Benzene	Toluene	Xylenes	Ethyl Benzene	PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	DCE	Meth. Chloride	Chloro-form	Chloro-benzene
BB	1/11/91	NA	(0.2)	(0.1)	(0.8)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.8)
	1/30/91	NA	(0.2)	(0.1)	(0.8)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	0.6	21	(0.3)	1.6
Trip Bl.	12/19/91	NA	0.2	(0.2)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	14 B	(0.3)	(0.2)
Lab Bl.	1/30/91	NA	(0.2)	0.5	0.6	(0.2)	(0.3)	(0.3)	(0.3)	0.3	(0.4)	(0.4)	(0.6)	5.6	(0.3)	1.6
	6/28/91	NA	0.5	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	0.8	(0.3)	(0.2)
	7/16/91	NA	(0.2)	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.3)	(0.3)	(0.2)	(0.2)	(0.6)	1.4	(0.3)	(0.2)
	12/19/91	NA	(0.2)	(0.2)	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	1.6	(0.3)	(0.2)
	12/19/91	NA	(0.2)	0.5	(0.4)	(0.3)	(0.3)	(0.3)	(0.3)	(0.3)	(0.4)	(0.4)	(0.6)	0.4	(0.3)	(0.2)
BP-1	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	290	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	1500	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
	7/02/90	NA	NA	NA	NA	NA	(25)	230	(25)	(25)	(25)	(25)	(25)	(25)	89	(25)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	520	(2)	(2)	(2)	(2)	(2)	(5)	(2)	(2)
BP-2	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	40	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	110	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	6	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	1/10/91	82	(0.2)	(0.7)	(0.8)	(0.2)	50	36	1	(0.3)	(0.4)	(0.4)	(0.6)	(0.3)	(0.3)	(0.8)
	1/30/91	15	(0.2)	(0.2)	(0.2)	(0.2)	54	40	2.6	(0.3)	(0.4)	(0.4)	6.8	21	0.4	1.7
	7/16/91	70	(0.4)	0.4	0.3	(0.2)	68	43	1.1	(0.3)	(0.4)	(0.4)	(0.6)	1.1	(0.3)	(0.2)
	12/23/91	15	(0.2)	0.6	0.6	(0.3)	29	19	0.6	(0.3)	(0.4)	(0.4)	1.2	1.4 B	(0.3)	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	19	21	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)

TABLE 2 (Continued)
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Well Number	Date	Turbidity	AROMATIC HYDROCARBONS				CHLORINATED HYDROCARBONS									
			Benzene	Toluene	Xylenes	Ethyl Benzene	PCE	TCE	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	DCE	Meth. Chloride	Chloro-form	Chloro-benzene
BP-3	4/05/89	NA	(0.5)	(1)	(2)	(2)	(10)	40	(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	9/20/89	NA	(20)	(20)	(20)	(20)	(20)	40	(20)	(20)	(20)	(20)	(20)	(20)	(20)	(20)
	8/08/90	NA	(0.5)	(1)	(2)	(2)	(2)	30	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)
	1/10/91	32	(0.2)	(0.7)	3.1	0.7	7.7	6.5	0.3	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.3)
	1/30/91	25	(0.2)	(0.2)	(0.2)	(0.2)	75	41	2	(0.3)	(0.4)	(0.4)	6.8	19	0.4	1.6
	7/16/91	7.8	(0.2)	0.5	(0.2)	(0.2)	32	19	0.4	(0.3)	(0.4)	(0.4)	(0.6)	1.1	(0.3)	(0.2)
	12/23/91	7	0.2	0.6	0.6	(0.3)	26	31	0.6	(0.3)	(0.4)	(0.4)	1.2	1.6 B	(0.3)	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	5.4	42	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
BP-4	1/11/91	120	(0.2)	(0.7)	(0.8)	(0.2)	2	4	0.4	(0.3)	(0.4)	(0.4)	(0.6)	(5)	(0.3)	(0.3)
	1/30/91	85	(0.2)	(0.2)	(0.2)	(0.2)	2.1	3.9	(0.3)	(0.3)	(0.4)	(0.4)	2.1	20	(0.3)	1.7
	7/16/91	17	(0.2)	(0.2)	(0.2)	(0.2)	9	7	0.3	(0.3)	(0.4)	(0.4)	(0.6)	1	(0.3)	(0.3)
	12/26/91	10	0.2	1.4 B	0.4	(0.3)	4.2	15	0.6	(0.3)	(0.4)	(0.4)	1.2	17 B	0.6	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	15	24	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
BP-5	1/11/91	125	(0.2)	(0.7)	(0.8)	(0.2)	35	68	1.3	(0.3)	(0.4)	(0.4)	(0.6)	(5)	0.8	(0.3)
	1/30/91	NA	(0.2)	(0.2)	(0.2)	(0.2)	40	85	2.8	(0.3)	(0.4)	(0.4)	3.5	19	1.7	1.3
	7/16/91	7.7	0.2	0.3	(0.2)	(0.2)	53	65	1.1	(0.3)	0.5	(0.4)	(0.6)	1.1	0.7	(0.2)
	12/23/91	18	0.6	1.2	0.6	(0.3)	170	260	7.8	(0.3)	3.6	3.6	(0.6)	11 B	5.4	(0.2)
	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	22	190	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
BP-6	6/28/91	86	1.2	0.2	1	0.9	7.5	71	(0.3)	(0.3)	(0.4)	0.5	(0.6)	0.6	0.3	(0.2)
	7/18/91	23	(0.2)	(0.2)	(0.2)	(0.2)	6	48	(0.3)	(0.3)	(0.4)	0.4	(0.6)	1	(0.3)	(0.2)
	12/24/91	7	0.4	0.4	0.6	(0.3)	11	17	0.4	(0.3)	(0.4)	(0.4)	(0.6)	25 B	(0.3)	(0.2)
BP-6	5/15/92	0	(0.5)	(0.5)	(0.5)	(0.5)	3.0	300	(0.5)	(1.0)	(0.5)	(0.5)	(0.5)	(2.0)	(0.5)	(1.0)
MCL			1	100*	1750	680	5	5	200	32	5	0.5	6	40*	N/A	30

TABLE 2 (Continued)
LABORATORY ANALYTICAL RESULTS FOR GROUNDWATER SAMPLES COLLECTED TO DATE

Groundwater samples were analyzed in general accordance with EPA Methods No. 8010/8020 or 601/602. Only compounds reported to have been detected in concentrations greater than the detection limits are included in the table.

Concentrations are reported in micrograms per liter (μg/L) (1 μg/L is equivalent to 1 part per billion [ppb]). Values in parentheses denote nondetection at the enclosed detection limit.

Samples collected on 4/05/89, 9/02/89, and 8/20/90 were collected by Ray .E. Lewis Consulting Engineers, Inc. (REL).

PCE = tetrachloroethylene

TCE = trichloroethylene

1,1,1-TCA = 1,1,1-trichloroethane

1,1,2-TCA = 1,1,2-trichloroethane

1,1-DCA = 1,1-dichloroethane

1,2-DCA = 1,2-dichloroethane

DCE = dichloroethene

Meth. Chloride = methylene chloride

BB = Blank samples were prepared by pouring deionized water directly into the volatile organic analysis vials.

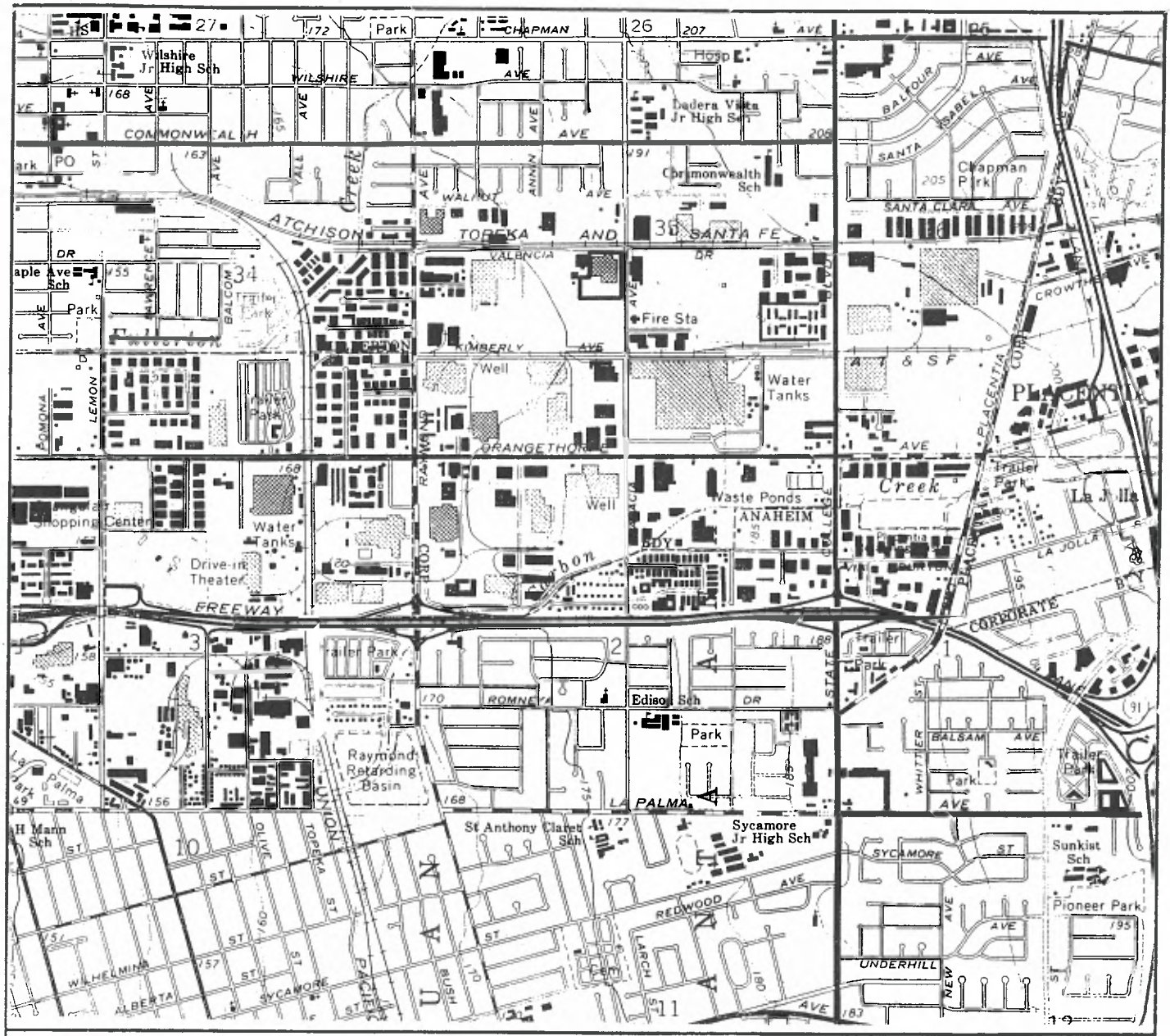
NA = not analyzed

Trip Bl. = Trip blank.

Lab Bl. = Laboratory-prepared blank analyzed as part of West Coast Analytical Service, Inc.'s internal quality control.

Values accompanied by a "B" denote that the substance was also detected in the blank sample.

MCL = maximum contaminant level published in the California Code of Regulations, Title 22. California action levels are listed for methylene chloride and toluene, as MCLs are not available for these chemicals.



NOTE

BASE MAP TAKEN FROM USGS ANAHEIM QUADRANGLE, CALIFORNIA-ORANGE CO., 7.5-MINUTE SERIES (TOPOGRAPHIC), 1965, PHOTOREVISED 1981

EXPLANATION

SITE

NORTH

0 ½ 1

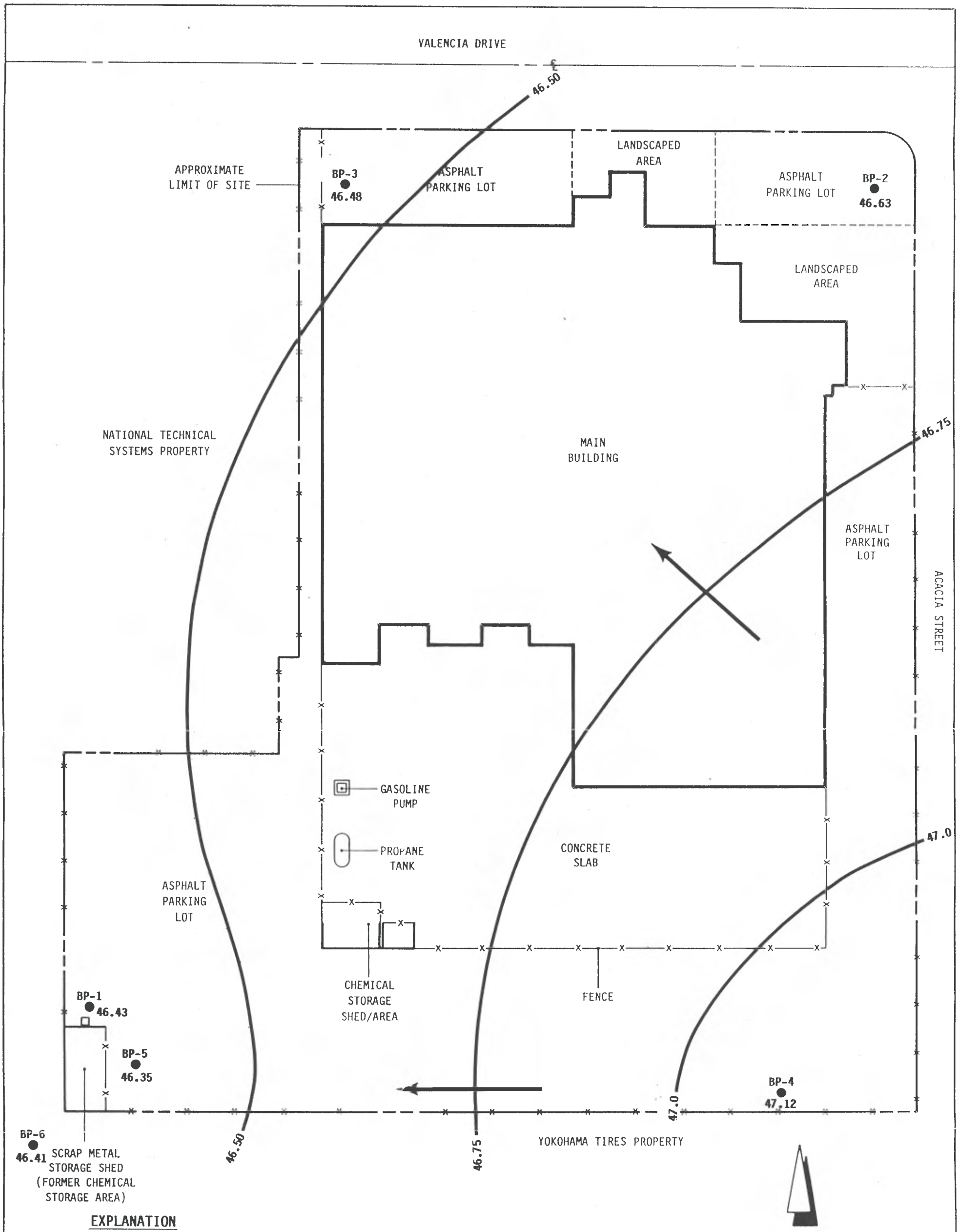
SCALE, MILES

APPLIED GEOSCIENCES INC.

Engineering Geology and Hazardous Materials Consultants

SITE VICINITY MAP

PROJECT NUMBER A901978D | FIGURE 1



EXPLANATION

BP-1 ● 46.43 — MONITORING WELL LOCATION AND DESIGNATION WITH GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL

← APPROXIMATE DIRECTION OF GROUNDWATER FLOW

46.50 — GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL = 0.25 FEET)

□ CONCRETE-LINED SUMP

NOTES

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) BASE MAP IS TAKEN FROM A DRAWING ENTITLED, "PLOT PLAN - PLUMBING", BY EUGENE, KINN, CHOY AND ASSOCIATES, DATED 12 MARCH 1960
3) GEOSTATISTICAL METHOD OF "KRIGING" USED TO INTERPRET GROUNDWATER CONTOURS

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

GROUNDWATER ELEVATIONS
MEASURED 14 MAY 1992

PROJECT NUMBER A901978D | FIGURE 2

APPENDIX A

SUMMARY OF FIELD PROCEDURES AND GROUNDWATER COLLECTION LOGS

APPENDIX A

SUMMARY OF FIELD PROCEDURES

A1.0 WATER-SAMPLE COLLECTION PROCEDURES

1. Field activities and equipment utilization were recorded on a field report form.

2. The water level and depth to the bottom of each well was measured using a conductance probe; the measurements were recorded to the nearest 0.01 foot. Prior to use, the probe was rinsed in a solution of TSP, followed by two deionized-water rinses.

3. A water sample was collected following purging of three well volumes of water and stabilization of pH, temperature, and electrical conductivity readings to within 5 percent of each other for three consecutive measurements. Measurements of pH, temperature and electrical conductivity were recorded on groundwater collection logs enclosed herein. Well volumes were estimated using the following equation:

$$\text{well volume} = (\text{pi})\ (\text{h})\ [0.3(r_2^2 - r_1^2) + r_1^2)]$$

4. A 55-gallon drum was used to measure the volumes of water removed.

5. Stainless-steel bailers were used for sampling the wells. The bailers were triple rinsed with deionized water prior to their use.

6. Water samples were collected by lowering the bailer approximately 3 to 5 feet below the static water level, and raising the bailer slowly in order to minimize agitation of the water sample in the bailer.

7. Water was discharged from the bailer through a bottom discharge valve. Discharge to the sample container was at a rate slow enough to minimize bubbling or significant agitation of the liquid. The sample container was filled to the top (from the bottom up) and overfilled with the intention of having no remaining headspace.

8. Samples were collected in laboratory-approved 40-millimeter (ml) glass vials with Teflon septum lids.

9. Following collection. all samples were placed in an ice chest cooled with ice to a temperature of approximately 40 to 50 degrees Fahrenheit.

10. Samples were delivered to the laboratory within approximately 24 hours of collection. Sample handling, transport, and delivery to the laboratory was documented using chain-of-custody procedures, including the use of chain-of-custody forms.

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP2
WELL NO.: BP2
PAGE: 1 OF 1
DATE: 5/15/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
8:20	30	6.75	1190	19.7	Slightly turbid
8:25	40	6.92	1190	19.7	
8:30	60	7.08	1190	19.7	Becomes clear
8:34	70	7.11	1180	19.5	
8:38	80	7.20	1180	19.7	
8:43	90	7.22	1190	19.8	
8:45	100	7.24	1190	19.7	
8:48	105	7.23	1190	19.7	Finished purging

TOTAL NUMBER OF SAMPLES COLLECTED	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP3
WELL NO.: BP3
PAGE: 1 OF 1
DATE: 5/15/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
10:50	30	6.55	1150	20.2	Slightly turbid
11:00	50	6.83	1100	19.8	
11:03	55	7.01	1100	19.8	
11:06	60	7.12	1190	19.8	Becomes clear
11:08	65	7.20	1000	19.8	
11:10	70	7.23	1000	19.8	
11:12	75	7.28	1050	19.8	
11:13	80	7.30	1200	19.8	
11:15	85	7.33	1100	19.8	
11:17	90	7.34	1190	19.8	
11:20	100	7.36	1190	19.8	
11:24	110	7.35	1190	19.8	
	110				Total purged

TOTAL NUMBER OF SAMPLES COLLECTED	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP4
WELL NO.: BP4
PAGE: 1 OF 1
DATE: 5/14/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
1:20	35	6.78	1200	21.2	Clear
1:25	70	6.95	1300	20.2	
1:31	90	7.04	1300	20.8	
1:38	120	7.07	1250	20.2	
1:41	130	7.08	1300	20.0	
1:43	150	7.10	1300	20.1	Crystal clear
1:46	160	7.13	1260	20.0	
1:47	165				Total purged

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP5
WELL NO.: BP5
PAGE: 1 OF 1
DATE: 5/14/92

URGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
1:20	35	6.78	1200	21.2	Clear
1:25	70	6.95	1300	20.2	
1:31	90	7.04	1300	20.8	
1:38	120	7.07	1250	20.2	
1:41	130	7.08	1300	20.0	
1:43	150	7.10	1300	20.1	Crystal clear
1:46	160	7.13	1260	20.0	
1:47	165				Total purged

TOTAL NUMBER OF SAMPLES COLLECTED		
	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE

GROUNDWATER COLLECTION LOG

SAMPLE NO.: BP6
WELL NO.: BP6
PAGE: 1 OF 1
DATE: 5/15/92

PURGE METHOD: Submersible Pump
SAMPLE METHOD: Stainless Steel Bailer

PROJECT NO.: A901978D
PROJECT NAME: AEI

TIME	CUMULATIVE	pH	ELECTRICAL CONDUCTIVITY	TEMP	COMMENTS
1:00	0				Slightly turbid
1:26	45	7.09	1300	21.1	Becomes clear
1:30	60	7.08	1290	20.7	Becomes clear
1:36	80	7.08	1300	20.9	Becomes clear
1:42	95	7.26	1225	20.6	Becomes clear
1:46	110	7.35	1290	20.6	Becomes clear
1:55	130	7.21	1290	20.6	Becomes clear
	135	7.33	1280	20.2	Becomes clear
	160	7.37	1290	20.6	Becomes clear
2:04	165	7.38	1280	20.1	Stopped purging

TOTAL NUMBER OF SAMPLES COLLECTED	2	VOA VIAL(S)
		1 LITER BOTTLE(S)
		OTHER

DATE SHIPPED TO LAB: 5/15/92

LAB SHIPPED TO: Orange Coast Analytical

SHIPPED VIA: Delivered by AGI

SAMPLERS SIGNATURE:

APPENDIX B

LABORATORY ANALYTICAL REPORTS

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

RECEIVED
MAY 26 1992
APPLIED GEOSCIENCES IN

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-2
Laboratory Sample #: 9205404
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	**19** <----
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	**21** <----
Trichloroflouromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	*97*
2-Bromo-1-chloropropane	*103*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-3
Laboratory Sample #: 9205405
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	**5.4** <----
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	**42** <----
Trichloroflouromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	92
2-Bromo-1-chloropropane	99

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-4
Laboratory Sample #: 9205406
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	0.5	N.D.
Bromodichloromethane	0.5	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	1.0	N.D.
Chlorobenzene	1.0	N.D.
Chlorodibromomethane	0.5	N.D.
Chloroethane	1.0	N.D.
2-Chloroethyl vinyl ether	5.0	N.D.
Chloroform	0.5	N.D.
Chloromethane	1.0	N.D.
1,2-Dichlorobenzene	1.0	N.D.
1,3-Dichlorobenzene	1.0	N.D.
1,4-Dichlorobenzene	1.0	N.D.
1,1-Dichloroethane	0.5	N.D.
1,2-Dichloroethane	0.5	N.D.
1,1-Dichloroethene	0.5	N.D.
Trans 1,2-Dichloroethene	1.0	N.D.
1,2-Dichloropropane	1.0	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Ethylbenzene	0.5	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	1.0	N.D.
Tetrachloroethene	0.5	**1.5** <----
Toluene	0.5	N.D.
1,1,1-Trichloroethane	0.5	N.D.
1,1,2-Trichloroethane	1.0	N.D.
Trichloroethene	0.5	**24** <----
Trichloroflouromethane	2.0	N.D.
Vinyl chloride	1.0	N.D.
Total Xylenes	0.5	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	91
2-Bromo-1-chloropropane	99

Mark Noorani
Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-5
Laboratory Sample #: 9205407
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	5.0	N.D.
Bromodichloromethane	5.0	N.D.
Bromoform	10	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	10	N.D.
Chlorobenzene	10	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	50	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	10	N.D.
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Ethylbenzene	5.0	N.D.
Methylene chloride	20	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	5.0	**22** <----
Toluene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	10	N.D.
Trichloroethene	5.0	**190** <----
Trichloroflouromethane	20	N.D.
Vinyl chloride	10	N.D.
Total Xylenes	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	*102*
2-Bromo-1-chloropropane	*96*

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water, BP-6
Laboratory Sample #: 9205408
Laboratory Reference #: AGI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-18-92
Reported: 05-20-92

VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

ANALYTE	*DETECTION LIMIT ug/l*	*SAMPLE RESULTS ug/l*
Benzene	5.0	N.D.
Bromodichloromethane	5.0	N.D.
Bromoform	10	N.D.
Bromomethane	10	N.D.
Carbon tetrachloride	10	N.D.
Chlorobenzene	10	N.D.
Chlorodibromomethane	5.0	N.D.
Chloroethane	10	N.D.
2-Chloroethyl vinyl ether	50	N.D.
Chloroform	5.0	N.D.
Chloromethane	10	N.D.
1,2-Dichlorobenzene	10	N.D.
1,3-Dichlorobenzene	10	N.D.
1,4-Dichlorobenzene	10	N.D.
1,1-Dichloroethane	5.0	N.D.
1,2-Dichloroethane	5.0	N.D.
1,1-Dichloroethene	5.0	N.D.
Trans 1,2-Dichloroethene	10	N.D.
1,2-Dichloropropane	10	N.D.
cis-1,3-Dichloropropene	10	N.D.
trans-1,3-Dichloropropene	10	N.D.
Ethylbenzene	5.0	N.D.
Methylene chloride	20	N.D.
1,1,2,2-Tetrachloroethane	10	N.D.
Tetrachloroethene	5.0	**30** <----
Toluene	5.0	N.D.
1,1,1-Trichloroethane	5.0	N.D.
1,1,2-Trichloroethane	10	N.D.
Trichloroethene	5.0	**300** <----
Trichloroflouromethane	20	N.D.
Vinyl chloride	10	N.D.
Total Xylenes	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

Surrogate Recovery	%
alpha, alpha, alpha-triflourotoluene	104
2-Bromo-1-chloropropane	99

ORANGE COAST ANALYTICAL

Mark Noorani
Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Applied Geosciences, Inc.
ATTN: Mr. Craig Metheny
29B Technology Dr., Ste. 100
Irvine, CA 92718

Client Project ID: AEI
Client Project #: A901978D

Sample Description: Water

Laboratory Reference #: HAI 1890

Sampled : 05-15-92
Received: 05-15-92
Analyzed: 05-15-92
Reported: 05-20-92

TURBIDITY (EPA 180.1)

Laboratory Sample Number	*Client Sample Number*	*Sample Result NTU*
9205404	BP-2	N.D.
9205405	BP-3	N.D.
9205406	BP-4	N.D.
9205407	BP-5	N.D.
9205408	BP-6	N.D.
Detection Limit:		10

Analyte reported as N.D. was not present above the stated limit of detection.

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

ORANGE COAST ANALYTICAL, INC.
3002 DOW, SUITE 532 TUSTIN, CA 92680
(714) 832-0064 FAX (714) 832-0067

Q C D A T A R E P O R T

Analysis: VOLATILE ORGANIC COMPOUNDS (EPA 601/602)

Date of Analysis: 05/18/92

Laboratory Sample No.: 9205442

Laboratory Reference No.: AGI 1890

Analyte	R1 (ppb)	SP (ppb)	MS (ppb)	MSD (ppb)	PR1 %	PR2 %	RPD %
Benzene	0	20.0	18.8	19.3	94	97	3
1,1-Dichloroethene	0	20.0	19.3	20.9	97	105	8
Trichloroethene	0	20.0	19.7	20.9	99	105	6
Toluene	0	20.0	20.4	19.8	102	99	3
Tetrachloroethene	0	20.0	19	19.7	95	99	4

Definition of Terms:

R1 Results of First Analysis
SP Spike Concentration Added to Sample
MS Matrix Spike Results
MSD Matrix Spike Duplicate Results
PR1 Percent Recovery of MS: (MS - R1) / SP X 100
PR2 Percent Recovery of MSD: (MSD - R1) / SP X 100
RPD Relative Percent Difference: {(MSD - MS)/(MSD + MS)} X 100 X 2

ORANGE COAST ANALYTICAL

Mark Noorani
Laboratory Director

APPLIED GEOSCIENCES INC.

SHIPMENT NO. _____

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

PROJECT NAME: AEI

DATE 5/15/92

PROJECT NO. A9019780

Sample Number	Location	Type of Sample: Material	Type of Sample: Method	Type of Container	Type of Preservation: Temp	Type of Preservation: Chemical	Analysis Required*
BP2		Water	Stainless Steel bailer	40mL VOA vials	Chill	Ice	601/602
BP2							180.1
BP3							601/602
BP3							180.1
BP4							601/602
BP4							180.1
BP5							601/602
BP5							180.1
BP6							601/602
BP6							180.1
							FTU
							NO

Total Number of Samples Shipped: 10 | Sampler's Signature: Elliot Leventhal

Relinquished By: Signature: Elliot Leventhal; Printed Name: Elliot Leventhal; Company: Applied Geosciences; Reason: To Lab	Received By: Signature: Michele Florence; Printed Name: Michele Florence; Company: O.CA	Date: 5/15/92	Time: 16:00
Relinquished By: Signature: ; Printed Name: ; Company: ; Reason:	Received By: Signature: ; Printed Name: ; Company:	Date: / /	Time:
Relinquished By: Signature: ; Printed Name: ; Company: ; Reason:	Received By: Signature: ; Printed Name: ; Company:	Date: / /	Time:
Relinquished By: Signature: ; Printed Name: ; Company: ; Reason:	Received By: Signature: ; Printed Name: ; Company:	Date: / /	Time:

Special Shipment / Handling / Storage Requirements:

Normal Turn-around

Send Results to Craig Metheny

* Note – This does not constitute authorization to proceed with analysis

South Coast
AIR QUALITY MANAGEMENT DISTRICT

HEADQUARTERS, 9150 FLAIR DR., EL MONTE, CA 91731

AUGUST 03, 1992

ID - 017786
AMERICAN ELECTRONICS INC
1600 E. VALENCIA DR.
FULLERTON CA 92631-4747

PERMIT RENEWALS

PERMIT NUMBER	DESCRIPTION	APPLIC NUMBER	EXPIRATION DATE
S00119	OVEN, BAKING	00290A	07/01/93
S00191	SPRAY BOOTH PAINT AND SOLVENT	00671A	07/01/93
S01162	DIP TANK COATING MISC	00780A	07/01/93
M84912	SERV STAT STORAGE & DISPENSING GASOLINE	105374	07/01/93
S07624	SPRAY BOOTH PAINT AND SOLVENT	10511A	07/01/93
001125	OVEN, BAKING	11125W	07/01/93
002033	DEGREASER PERCHLOROETHYLENE (>1LB VOC/D)	12033W	07/01/93
M44057	OVEN, BAKING	126955	07/01/93
D07300	SPRAY BOOTH PAINT AND SOLVENT	185587	07/01/93

DEVELOPMENT SERVICES DEPARTMENT
303 WEST COMMONWEALTH AVENUE • FULLERTON, CALIFORNIA 92632
Telephone: (714) 738-6540
FAX: (714) 738-3110

September 4, 1990

Mr. Val Konovalov
American Electronics, Inc.
1600 East Valencia Drive
Fullerton, CA 92631

Re: 1600 East Valencia Drive, Fullerton

Dear Mr. Konovalov:

In response to your request dated August 15, 1990, for a Certificate of Occupancy for the subject property, we have reviewed our permit files and have found that the original structure was permitted and approved on November 2, 1960.

The original Certificate of Occupancy shows the previous address of 1536 East Ross. The City's records show that this address was subsequently changed to 1600 East Valencia Drive. Since there may have been a change in the use of the building, I personally made a field inspection to determine compliance of the building and its use (occupancy). Based on this field inspection, I have determined that the building is essentially in compliance.

Therefore, this letter constitutes a "Certificate of Occupancy" effective this date. Should you need additional assistance in this matter, please do not hesitate to contact me.

Your very truly,

Chuck Daleo
Building Official

jd

CITY OF FULLERTON

303 WEST COMMONWEALTH AVENUE
FULLERTON, CA 92632

Development Services Department
Building Division

FOR INFORMATION: (714) 738-6540

CALL FOR INSPECTION
Requests for inspections should be made at least twenty-four hours in advance by telephone at (714) 738-6542, 7:30 A.M. - 5:00 P.M.

Inspectors office hours are:
7:30 - 8:00 A.M. and 3:30 - 4:30 P.M.

BLDG. PLUMBING ELEC. MECH. SEWER DEMO.

09/26/91 10:14

1600 E VALENCIA DR

Permit	: 91-02373	Project No	: AP-00340
Status	: APPROVED	Validated by	: KC
		Inspector area:	
This type	: SEISMIC PERMIT	Applied	: 05/23/91
		Approved	: 09/26/91
Parcel number	:	Completed	:
Group-occup/use	: B-2	To Expire	:

Owner : AMERICAN ELCTRONICS
Applicant : KONOVALOV, VAL
Applicant Addr : 1600 E VALENCIA DR FULLERTON, CA 92632
Job Address : 1600 E VALENCIA DR
Phone number : 871-3020
Class code : O/S
Valuation : 96,800
Construction : ALT
Permit to do : SEISMIC T/U RETROFIT CHPATER 89
Units : 0
ENGINEER : JOHN B HOERNER 2145 Lic. E844333001 09/26[illegible]-79[illegible]
City License : OWNER/BUILDER 844333001 09/2604227110 [illegible] 96.80
Work To Be Done COMM'L SEISMIC RET[illegible] 09/2612BUILD-4220[illegible] 437.75
PER CHAPTER 89 TILT-UP.
96,800 SQ FT TOTAL

Fee description	Units	Fee/Unit	Ext fee	Data
Plan Check Fee (Enter 'Y' to Calc)>			275.60	Y
Total Seismic Fees:			14.52	
General Plan Fees:		1.00	96.80	
Total Building Fees:			824.67	

*** Fees Required *** *** Fees Collected & Credits ***

Receipt No.	Date	Payment	
	09/26/91	14.52	4608
	09/26/91	96.80	4227
	09/26/91	437.75	4220

Fees:	824.67		
Adjustments:	.00	Total Credits:	.00
Total Fees:	824.67	Total Payments:	824.67
		Balance Due:	.00

YES ☐ NO ☒ WILL THE APPLICANT OR FUTURE BUILDING OCCUPANT HANDLE A HAZARDOUS MATERIAL OR A MIXTURE CONTAINING A HAZARDOUS MATERIAL EQUAL TO OR GREATER THAN THE AMOUNTS SPECIFIED ON THE HAZARDOUS MATERIALS INFORMATION GUIDE?

YES ☐ NO ☒ WILL THE INTENDED USE OF THE BUILDING BY THE APPLICANT OR FUTURE BUILDING OCCUPANT REQUIRE A PERMIT FOR CONSTRUCTION OR MODIFICATION FROM THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)? SEE PERMITTING CHECKLIST FOR GUIDELINES.

Print Name Val Konovalov

YES ☐ NO ☒ WILL THE PROPOSED BUILDING OR MODIFIED FACILITY BE WITHIN 1000 FEET OF THE OUTER BOUNDARY OF A SCHOOL?

I HAVE READ THE HAZARDOUS MATERIAL INFORMATION GUIDE AND THE SCAQMD PERMITTING CHECKLIST. I UNDERSTAND MY REQUIREMENTS UNDER THE STATE OF CALIFORNIA HEALTH & SAFETY CODE, SECTIONS 25505, 25533, AND 25534 CONCERNING HAZARDOUS MATERIALS REPORTING.

Owner or Authorized Agent X Val Konovalov

APPLICANT'S COPY

Plan Check Approvals:

Planning _____
Building [illegible] / KC
Engineering _____
Fire _____

FORM NO. S-603 (REV. 9/87)

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
DIVISION OF OCCUPATIONAL SAFETY AND HEALTH
P.O. BOX 603 • SAN FRANCISCO, CA 94101-0603

L-P GAS TANK

INVOICE No. L 76976 SF

Permit to operate will be issued when the Department of Industrial Relations has received payment for this invoice and when written notice has been received that all safety requirements have been complied with. Labor Code, Division 5, Part 6.

Please make remittances payable to DEPARTMENT OF INDUSTRIAL RELATIONS (Safety), addressed to P.O. Box 603, San Francisco, California 94101-0603.
In correspondence, always give the LP Gas Tank Number shown on this invoice.

American Electronics
1600 East Valencia
Fullerton, CA 92631

TANK NO. 11150-65
Ser. B-23475

INSPECTED BY NR C. Ho

Owner or User	Location of Tank
Same	yard 1600 E. Valencia, Fullerton

Date of Inspection	Date of Invoice		
9-12-89	12-1-89	Inspection Fee	$
		Permit Processing Fee	$ 75.00

XX

Max. Allowable Working Pressure
250

Inspection Agency

[XX] Div. of Occupational Safety & Health

[ ] _____ (Other)

Please return attached copy of invoice with payment to assure credit of correct account.

Postmark of payment must be dated before 60 days from invoice date, otherwise 100% penalty will be charged. Labor Code, Section 7728.

COUNTY OF ORANGE/HEALTH CARE AGENCY
ENVIRONMENTAL HEALTH (714) 834-8175
1725 West 17th Street, P.O. Box 355
Santa Ana, CA 92702

HAZARDOUS WASTE INSPECTION

DBA: American Electronics INC.
ADDRESS: 1600 E. Valencia Dr.
Fullerton, CA. 92632

PERMIT NUMBER: _____

WASTE ID: [ ] WASTE NAME: MEIC TS [ ]
MAX VOL STORED: 55 UNIT: [ ] gal FORM: [ ] liquid
HOW STORED: [ ] 55 gal drum ANNUAL VOL DISPOS: 550gal
HOW DISPO: [ ] recycled off site
LOCATION: storage yard
HAULER: [ ] Rho-Chem

WASTE ID: [ ] WASTE NAME: Potassium Dichromate TS [ ]
MAX VOL STORED: 30 UNIT: [ ] gal FORM: [ ] liquid
HOW STORED: [ ] process container ANNUAL VOL DISPOS: 30gal
HOW DISPO: [ ] not yet disposed
LOCATION: _____
HAULER: [ ] not yet hauled

WASTE ID: [ ] WASTE NAME: Iodine (Chromic Acid Ferrocyanate) TS [ ]
MAX VOL STORED: 30 UNIT: [ ] gal FORM: [ ] liquid
HOW STORED: [ ] process container ANNUAL VOL DISPOS: 30 gal
HOW DISPO: [ ] not yet disposed
LOCATION: _____
HAULER: [ ] not yet hauled

WASTE ID: [ ] WASTE NAME: Na OH (Sodium Hydroxide) TS [ ]
MAX VOL STORED: 30 UNIT: [ ] gal FORM: [ ] liquid
HOW STORED: [ ] process container ANNUAL VOL DISPOS: 30gal
HOW DISPO: [ ] not yet disposed
LOCATION: _____
HAULER: [ ] not yet hauled

INSPECTOR # 217 SIGNATURE: Mike McCall

RECEIVED BY: Val Honorato DATE RECEIVED 9/7/89

PART II

F272-9.1515 (RS)

ORANGE COAST BUSINESS FORMS (714) 727-9550

SHIPPING MEMORANDUM

AMERICAN ELECTRONICS, INC.

17317

1600 E. Valencia Drive
Fullerton, California 92631-4735
(714) 871-3020

SHIPPED TO

Date 10/18/91

CUSTOMER Neutron Plating

Our Order No. None

ADDRESS 2993 E. Bluestar

Via OT

Anaheim, CA 92806

M. W. O. No. N/A

Attn: Junior/George (lead man)

ITEM NO.	QUANTITY	DESCRIPTION
1	1 lot	Various chemicals per attached list. NOTE: Material Safety Data sheets are included with each chemical. (~~X~~ 16 different chemicals are on attached list)

Yes ☐ ABOVE ITEMS SUBJECT TO INSPECTION AT OUR PLANT

Yes ☐ COPY OF CERTIFICATION TO ACCOMPANY PARTS

Yes ☐ ADVISE AEI PURCHASING OF ESTIMATED CHARGES BEFORE COMMENCING WORK.

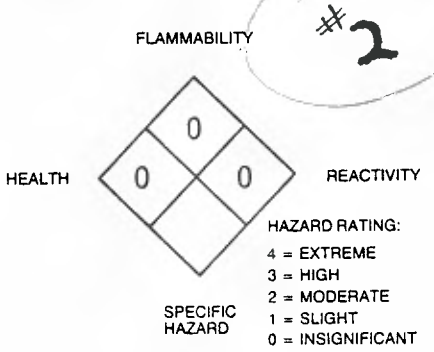
AEI FORM 407

MANUFACTURER	NAME/PART NUMBER	AMOUNT	RECORD NO.
Hooker Parker	Bonderite 723B	1 gallon	002
Amchem	Ridoline 53 (powder)	55 lbs.	007
Lonco	Cream Wire Stripper 504	3 gallon	076
Rapid	Bright Nickel Coatalyte 310	1 qt-16 oz	024
Rapid	Activator #3	26 oz.	213
Rapid	Cadmium Coatlyte 312	1 gallon	215
Rapid	Activator #7	½ gallon	786
Krohn	Rose Gold Plating Solution PM 304	1 pint	789
Amchem	Auxiliary Test Solution 46	4 oz.	787
Krohn	Electro Cleaner	1 pint	788
Amchem	Deoxidizer Make-up #7	3 gallon	005
Amchem	Alodine 1200	4.1 gallon	004
Kester	Solder Flux 197	4 oz.	230
Amchem	Indicator Solution 11	28 oz.	544
Amchem	Hydro Fax 214 Reducer	10 lbs.	008
Gray Mills	GM571 Cleaner	13 lbs.	-

MATERIAL SAFETY DATA SHEET
(Similar to Form OSHA-20)

PARKER CHEMICAL COMPANY
32100 Stephenson Hwy., Madison Heights, Michigan 48071 (313) 583-9300

#2



NFPA Designation 704

Date: August 26, 1983

VOC = 0

I. PRODUCT IDENTIFICATION:

Product Name: BONDERITE® 723B CATALYST.

Code Number: 200422

Identification: Conversion Coating Chemical - Acidic.

II. HEALTH HAZARD DATA

Emergency and First Aid Procedures

EYES: Immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION.

SKIN: Immediately remove contaminated clothing and shoes. Flush skin thoroughly with water for at least 15 minutes. Rinse clothing. If irritation persists, GET MEDICAL ATTENTION.

INGESTION: Drink large quantities of water. INDUCE VOMITING. GET MEDICAL ATTENTION. Never give anything by mouth to an unconscious person.

Effects of Overexposure

Contact with eyes, skin or mucous membrane can cause irritation, possibly severe.

Precautions

AVOID CONTACT WITH SKIN, EYES, CLOTHING.

For industrial use only.

Although the information presented herein is to the best of our knowledge true and accurate, no warranty or guarantee, express or implied, is made regarding the information or the performance of any product. We assume no liability for incidental, consequential or direct damages of any kind, no matter what the cause, including negligence. Nothing contained herein shall be construed as a recommendation to use a product in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. The above includes confidential and proprietary information of Parker Chemical Company and is furnished to you for your use solely on products or processes supplied by us to you.

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III. HAZARDOUS INGREDIENTS

Ingredients Presenting A Significant Hazard	%	TLV	CAS
Complexed cyanide, as CN	5-10	-	-

IV. FIRE AND EXPLOSION HAZARD DATA

Flash Point: None.

Flammable Limits: Non-flammable.

Extinguishing Media: As required to extinguish surrounding fire.

Unusual Fire and Explosion Hazard: If permitted to dry and then heated to decomposition, toxic fumes of cyanide can be released.

V. SPECIAL PROTECTION

Respiratory Protection: Not normally required.

Ventilation: As necessary to avoid inhalation and contact.

Protective Gloves: Neoprene or Plastic.

Eye and Face Protection: Chemical goggles, face shield.

Other Protective Equipment: As required to avoid contact.

Other Protective Equipment: Eye wash facility and emergency shower should be in close proximity.

VI. PHYSICAL DATA

Boiling Point: 210° - 250°F.

Specific Gravity: 1.113 ± 0.005

Solubility in water: Complete.

Appearance and Odor: Clear liquid, no odor

pH: 9 - 10

VII. REACTIVITY DATA

Stability: Stable.

Incompatibility: Keep separate from acids.

Hazardous Decomposition Products: Dried product contacted with acid can produce toxic fumes of cyanide.

Hazardous Polymerization: Will not occur.

VIII. HANDLING AND STORAGE:

We recommend that ALL CHEMICALS be stored and used in locations which will not permit direct access to sanitary or surface drains. These areas should be constructed in such a manner that any chemicals lost can be either salvaged or suitably treated to prevent pollution.

IX. SPILL, LEAK AND DISPOSAL PROCEDURES

Steps To Be Taken In Case Material is Released or Spilled:

Wear protective clothing; respirator.

Dike to contain spill.

Absorb or otherwise collect spill and store in polyethylene or polyethylene-lined steel container.

Absorb on non-combustible material (vermiculite, sand, earth) and store in suitable drum.

Waste Disposal Method:

This chemical does not exhibit any of the characteristics of hazardous waste as defined in Title 40 CFR 261.3.

Wastewater treatment sludges from chemical conversion coating of aluminum are normally hazardous waste unless delisted. (40 Code of Federal Regulations 261.3)

Waste Treatment Information Bulletin: No. 1004
(Available on request).

X. REGULATORY STATUS

Clean Water Act

Toxic Pollutant List (Sec. 307): Does not contain any chemical(s)/compound(s) which are included on this list.

Designated Hazardous Substances (Sec 311): Does not contain any chemical(s)/compound(s) which are included on this list.

Department of Transportation:

This chemical is not regulated by the Department of Transportation.

Bill of Lading Description: Compounds, Iron or Steel, Rust Preventing or Removing, OT Petroleum, N.O.I.

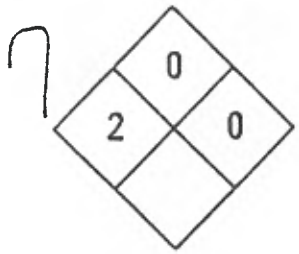
Department of Transportation Label: Not Required.

Department of Transporation Hazard Classification: None.

Prepared by S. Whitney S Whitney

Parker+Amchem

HENKEL CORPORATION
32100 Stephenson Highway
Madison Heights, Michigan 48071



MATERIAL SAFETY DATA SHEET

AMERICAN ELECTRONICS INC. CUSTOMER # 299542

PLANT MANAGER

VOC=0

PRODUCT TRADE NAME	RIDOLINE 53
DOT PROPER SHIPPING NAME	Not Regulated
DOT HAZARD CLASSIFICATION	None
TECHNICAL CONTACT (NAME)	Product Acceptance Office
TELEPHONE NUMBER	(313) 583-9300 EMERGENCY NUMBER (517) 263-9430

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV/PEL
Tetrasodium Pyrophosphate	7722-88-5	20-30	Irritant	5 mg/M^3
Sodium Metasilicate	6834-92-0	30-40	Irritant	2 mg/M^3

2 PHYSICAL DATA

APPEARANCE	White powder		
SOLUBILITY IN WATER	Appreciable		
ODOR	None	pH of CONCENTRATE	N/A
SPECIFIC GRAVITY	N/A	BOILING POINT, °F.	N/A

OTHER: N/A

3 FIRE & EXPLOSION DATA

FLASH POINT None
TEST METHOD N/A
EXTINGUISHING MEDIA Water
UNUSUAL FIRE OR EXPLOSION HAZARDS
None
SPECIAL FIRE FIGHTING PROCEDURES
None

4 REACTIVITY DATA

STABLE ☒ UNSTABLE ☐

CONDITIONS TO AVOID

INCOMPATIBLE MATERIALS

Acids

HAZARDOUS POLYMERIZATION WILL OCCUR ☐

WILL NOT OCCUR ☒

CONDITIONS TO AVOID

HAZARDOUS DECOMPOSITION PRODUCTS

Oxides of phosphorus

5 HEALTH HAZARD DATA

Skin:	Will burn.
Eyes:	Will burn.
Ingestion:	Will burn mucous membranes.
Inhalation:	Will irritate; may burn.

6 FIRST AID RECOMMENDATIONS

SKIN: Wash with soap and water and rinse thoroughly.

EYES: Flush immediately with copious amounts of water for at least 15 minutes. Call a doctor.

INGESTION: Dilute by drinking several glasses of water, milk, or fruit juice. Call a doctor. Do not induce vomiting unless directed by a doctor.

INHALATION: Remove from contaminated area to fresh air.

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Transfer any excess to a clean polyethylene container. Neutralize remaining residue with dilute hydrochloric acid or dilute acetic acid to pH 7-8.

WASTE TREATMENT

Flush neutralized material to treatment plant with plenty of water and with approval of regulatory agency.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS	GENERAL AREA EXHAUST	☐
	LOCAL EXHAUST	☒
	NO EXHAUST NECESSARY	☐

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION	Safety goggles
SKIN PROTECTION	Rubber gloves and apron
RESPIRATORY PROTECTION	Dust mask - NIOSH approved
OTHER REQUIRED EQUIPMENT	None

9 SPECIAL PRECAUTIONS & STORAGE

Store in a dry place away from acids.

PREPARED BY

DATE 10/23/86

TITLE

CHEMICAL EMERGENCY TELEPHONE 1-800-424-9300

Conditions: although the information presented herein is to the best of our knowledge true and accurate, no warranty or guarantee, express or implied, whether of merchantability, fitness for any particular purpose or otherwise, is made regarding the information or the performance of any product. In each case we strongly recommend that purchasers before using any product in full production make their individual tests to verify to their own satisfaction whether the product is of acceptable quality and is suited for their specific purposes under their own manufacturing conditions. Further, no representative of ours has any authority to waive or change the foregoing provisions. However, subject to such provisions, our technical personnel are available to assist purchasers in modifying our products for use consistent with their needs and conditions in existence in their business. Nothing contained herein shall be construed as recommendation to use a product in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. We assume no liability for incidental, consequential or direct damages of any kind, no matter what the cause, including negligence. The above includes confidential and proprietary information of Parker+Amchem and is furnished to you for your use solely on products or processes supplied by us to you and should not be otherwise used or disclosed.

PROP-C-Controlled/Proprietary Business Information Claimed

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R.N. 076
1-'90

LONCO

MATERIAL SAFETY DATA SHEET

EFFECTIVE DATE: Revised August 11, 1989

Copyright © 1985 London Chemical Company, Inc.

Union Carbide Corporation urges the customer receiving this Material Safety Data Sheet to study it carefully to become aware of hazards, if any, of the product involved. In the interest of safety you should (1) notify your employees, agents, and contractors of the information on this sheet, (2) furnish a copy to each of your customers for the product, and (3) request your customers to inform their employees and customers as well.

3

I. IDENTIFICATION

WS 020

PRODUCT NAME:	Wire Stripper #504 (Cream)
CHEMICAL NAME:	NA
CHEMICAL FAMILY:	Mixture
FORMULA:	NA
MOLECULAR WEIGHT:	NA
SYNONYMS:	NA
	SHORT TERM EXPOSURE LIMIT 15 MIN.

II. PHYSICAL DATA VOC = 291 g/l

BOILING POINT, 760 mm. Hg	104°F(Initial)	FREEZING POINT	NA
SPECIFIC GRAVITY (H_2O = 1)	1.18	VAPOR PRESSURE	~224mm@20°C
VAPOR DENSITY (air = 1)	Greater than 2	SOLUBILITY IN WATER, % BY WT.	~22%
PER CENT VOLATILES BY VOLUME	90+%	EVAPORATION RATE (Butyl Acetate = 1)	< 1
APPEARANCE AND ODOR	Viscous tan liquid with sweetish odor		

III. HAZARDOUS INGREDIENTS* See Section X for other PEL/TLV's

MATERIAL	NOT MORE THAN	PEL (units)	TLV (units)	CAS NUMBER
Dichloromethane; Methylene chloride	67%	500ppm	50 ppm	75-09-2
			175 mg/m^3	
Phenol (Skin)	17%	5ppm	5ppm	108-95-2
		19mg/m^3	19mg/m^3	
Ammonia, (from Ammonium Hydroxide)	4%	*	25ppm *	7664-41-7

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT [test method(s)]	None - Setaflash closed cup

FLAMMABLE LIMITS IN AIR, % by volume	LOWER	NA	UPPER	NA

EXTINGUISHING MEDIA	Carbon dioxide, dry chemical foam - water fog.
SPECIAL FIRE FIGHTING PROCEDURES	Use blanket effect to smother fire, use water only in fine mist or spray. Fire fighters should use respiratory protection for fumes and toxic degradation products.
UNUSUAL FIRE AND EXPLOSION HAZARDS	None
EMERGENCY PHONE NUMBER	Union Carbide H.E.L.P. (304) 744-3487 This number is available days, nights, weekends, and holidays.

V. HEALTH HAZARD DATA

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE

Persons with pre-existing skin disorders may be more susceptible to this product because of its defatting and irritant properties. Because of reports of excessive carbon monoxide levels following exposure to methylene chloride, persons with cardiac disease may be at increased risk.

EFFECTS OF ACUTE OVEREXPOSURE

SWALLOWING	Can cause severe poisoning and death if swallowed. Symptoms can include salivation, vomiting, burning sensations of the mouth, bloody vomiting, diarrhea and pain. In severe poisoning, person can go into shock. Person may also have kidney damage.
Primary Route of Entry SKIN CONTACT	Severe irritation, and burns, can occur. Readily absorbably through the skin. Can be fatal, if enough is spilled on skin.
Primary Route of Entry INHALATION	Can cause irritation of nose, throat and respiratory tract plus nasal discharge and coughing. Other symptoms from Methylene Chloride exposures (500-1200ppm) include mental confusion, light headedness, nausea, vomiting, and headache. See Section X-Additional Inhalation Information
EYE CONTACT	Splash contact can cause serious burns and irritation to the eyes. May cause blindness. High vapor concentrations may also cause irritation of the eyes.

EFFECTS OF REPEATED OVEREXPOSURE

Repeated or prolonged exposure to phenol may cause chronic phenol poisoning. The symptoms of chronic poisoning include vomiting, difficulty in swallowing, diarrhea, lack of appetite, headache, fainting, dizziness, dark urine, mental disturbances, and possibly a skin rash. Liver damage and discoloration of the skin may occur.

OTHER HEALTH HAZARDS

Unknown.

EMERGENCY AND FIRST AID PROCEDURES

SWALLOWING	Do not induce vomiting. Call a physician and/or transport to emergency facility.
SKIN	Remove contaminated clothing; launder before reuse. Wash skin off in flowing water. If irritation occurs, get medical attention.
INHALATION	Remove to fresh air if effects occur. Call a physician and/or transport to emergency facility. Support breathing if indicated.
EYES	Irrigate with flowing water immediately and continuously for 15 minutes. Refer to medical personnel.

NOTES TO PHYSICIAN

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition.
Also See X Additional Information _ Notes to physician.

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	Sources of heat and ignition plus strong oxidizing agents, metals (such as sodium, potassium, magnesium and aluminum).
UNSTABLE	STABLE		
	X		

INCOMPATIBILITY (materials to avoid)	Strong oxidizing agents, aluminum, and possibly sodium, potassium, and magnesium metals, and sources of heat and ignition.
HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS	Open flames and welding arcs can release carbon dioxide, hydrogen chloride, small amounts of nitrogen oxides and possibly phosgene and chlorine.

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	NA
May Occur	Will not Occur		
	X		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	See Section X Additional Information - In Case of Spill.
WASTE DISPOSAL METHOD	Scrap liquid may be disposed of via a licensed solvent waste disposal company and may be incinerated. Follow Federal, state, and local regulations.

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)	See Section X Additional Information - Respiratory Protection.
VENTILATION	Use local or general dilution ventilation to maintain exposure below the permissible exposure limits (PEL).
PROTECTIVE GLOVES	Nitrile or supported neoprene.
EYE PROTECTION	Chemical splash goggles or face shield.
OTHER PROTECTIVE EQUIPMENT	Use neoprene apron where potential for splashing exists. Eye wash is recommended.

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Store in closed containers in a well-ventilated low fire-risk area away from acids, alkalies, and oxidizing agents and away from sources of heat and ignition.
Avoid excessive vapor inhalation (See PEL/TLV's and Inhalation)

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS

Avoid unprotected eye and skin contact.
Use only with good ventilation (See Ventilation, above).
Vapors of this material are heavier than air and will collect in low areas such as pits, degreasers, etc.

X. ADDITIONAL INFORMATION

Additional Inhalation Information

Methylene chloride is an anesthetic. Inhaling the vapor may cause mental confusion, light-headedness, nausea, vomiting, and headache. Continued exposure may cause increased light-headedness, staggering, unconsciousness and death. High vapor concentrations may also cause irritation of the eyes and respiratory tract. Exposure to this chemical may make the symptoms of angina worse. In human experiments, inhalation of 500 to 1000ppm for 1 to 2 hours resulted in light-headedness; there was sustained elevation of carboxyhemoglobin level. High exposures have resulted in deaths in industrial situations. Lower but unknown concentrations have caused such symptoms as lightheadedness, weakness, nausea, and "drunken behavior", resulting in mistakes and accidental falls. Phosgene poisoning has been reported to occur in several cases where methylene chloride was used in the presence of an open fire. Gleason reports that methylene chloride may be "irritating to the respiratory tract and may produce pulmonary edema" but gives no quantitative information. The Documentation of TLV's reports that in one investigation, irritation of the respiratory passages was observed in workers who had been exposed to concentrations up to 5000ppm.

Phenol in the vapor form or in solution is an irritant to eyes, mucous membranes, and skin; systemic absorption causes central nervous system effects as well as liver and kidney damage. Sudden collapse is characteristic of gross overexposure. In animals, prolonged inhalation of the vapor at 30 to 60ppm induced respiratory difficulty, lung damage, and paralysis. Systemic absorption by animals caused muscle twitching and severe convulsions. There are no reports of human fatalities from inhalation of the vapor, although one case of severe poisoning has been reported. Ingestion of lethal amounts (as little as 1 g) cause severe burns of the mouth and throat, marked abdominal pain, cyanosis, muscular weakness, collapse, coma, and death; tremors, convulsions, or muscle twitching were occasionally observed but were not severe. A laboratory technician repeatedly exposed to unknown vapor concentrations and liquid spilled on the skin developed anorexia, weight loss, weakness, muscle aches and pain, and dark urine; during several months of nonexposure there was gradual improvement in his condition, but after brief reexposure he suffered an immediate worsening of symptoms with prompt darkening of the urine and tender enlargement of the liver. Brief intermittent industrial exposures to vapor concentrations of 48 ppm of phenol (accompanied by 8ppm of formaldehyde) caused marked irritation of nose, eyes and throat.

Notes to Physician

Oral: May cause chemical pneumonia if aspirated into lungs. Danger of chemical pneumonia must be weighed against toxicity when considering emptying stomach. If lavage is performed suggest endotracheal and/or esophagoscopic control. Systemic: May cause increase in carboxyhemoglobin levels. May increase myocardial irritability. Avoid epinephrine or similar drugs if at all possible. Consult standard literature. No specific antidote. Treatment based on the sound judgment of the physician and the individual reactions of the patient.

In Case of Spill

Notify safety personnel, evacuate area, and eliminate all sources of ignition. Provide ventilation. Personnel involved in clean-up should have protection from inhalation of vapors and contact with liquid. Collect liquid in containers or pick up spill with absorbent solid; place in closed containers prior to disposal in a sanitary landfill or by incineration. Remove trace residues from area by flushing with plenty of water.

Methylene chloride has been found to cause carcinogenic effects in laboratory animals.

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

X. ADDITIONAL INFORMATION

Respiratory Protection

Use NIOSH/MSHA approved organic vapor cartridge half-mask respirator for excessive concentrations up to 10x the exposure limits. For higher concentrations use pressure demand supplied air with NIOSH/MSHA approval. For firefighting and oxygen deficient atmospheres use only self-contained breathing apparatus.

References: 1. Raw Material Manufacturer's Material Safety Data Sheets.
2. NIOSH/OSHA Health Guidelines for Chemical Hazards.

"This product contains a toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR, Part 372"

Chemical Name	CAS Number	% By Weight
Dichloromethane	75-09-2	66.18
Phenol	108-95-2	16.97

pH(as is)-11.25
pH(5% aqueous)-9.3

III Hazardous Ingredients (Note: STEL = Short Term Exposure Limit - 15 minutes)

Material	PEL	STEL	TLV	STEL
Ammonia (from ammonium hydroxide)		35ppm	25ppm	35ppm
		27mg/m^3	18mg/m^3	27mg/m^3

The opinions expressed herein are those of qualified experts within Union Carbide Corporation. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of the product are not within the control of Union Carbide Corporation, it is the user's obligation to determine the conditions of safe use of the product.

VI. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	
UNSTABLE	STABLE		

INCOMPATIBILITY
(materials to avoid)

HAZARDOUS COMBUSTION OR
DECOMPOSITION PRODUCTS

HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	
May Occur	Will not Occur		

VII. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	
WASTE DISPOSAL METHOD	

VIII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)	
VENTILATION	
PROTECTIVE GLOVES	
EYE PROTECTION	
OTHER PROTECTIVE EQUIPMENT	

IX. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

FOR INDUSTRY USE ONLY

OTHER PRECAUTIONS

PROP-C-Controlled/Proprietary Business Information Claimed

PROP-C-Controlled/Proprietary Business Information Claimed

R.N. 786
4-191

Rapid Electroplating Process, Inc.

Material Safety Data Sheet

Complies with OSHA's Hazard Communication Standard
29 CFR 1910.1200. Based on OSHA Form 174, Sept. 1985
Title III, SARA, Section 313, 40 CFR Part 372.45

PRODUCT IDENTITY: RAPID ACTIVATOR #7

The information and disclosures presented herein are provided to inform users about the dominant and potential hazards known to be associated with our products. The release of this information by Rapid Electroplating Process, Inc. for use by others is with the expressed intent of being solely for health and safety purposes by qualified individuals. Rapid Electroplating Process, Inc. will consider any other use or dissemination as a breach of trust by the user.

SECTION I—MANUFACTURER

Manufacturer's Name:
Rapid Electroplating Process, Inc.

Emergency Telephone Number:
(312) 922-0952 or (312) 684-8348
CHEMTREC 1-800-424-9300

Address:
1603 S. Michigan Ave.
Chicago, IL 60616

Telephone Number for Information:
(312) 922-0952
Mon-Fri, 8 a.m. - 4:30 p.m. (Central Time)

Prepared By:
R. F. Rapids

Date Prepared:
15 DEC 90

SECTION II—HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Legal Notices:

FEDERAL: "Superfund Amendments and Reauthorization Act (SARA) of 1986":
No component of this product has been identified as being subject to toxic chemical reporting.

CALIFORNIA: "Safe Drinking Water and Toxic Enforcement Act of 1986":
This warning is not known to apply.

Hazardous Components:	*CAS #*	*LISTED BY: SARA*	*CALIF*	*OSHA PEL mg/M3*	*ACGIH TLV-TWA mg/M3*	*WT.%*
Components NOT Designated As hazardous in References or <1 Wt% each	As a Group					100

NOTES: For Information: Contains sulfamic acid (no TLV established)

Under normal conditions of evaporation, only the water phase is expected to evaporate leaving the soluble salts behind. Any TWA is thus believed to be meaningful only for the abnormal case in which the solution as a whole is introduced into the air as an aerosol.

Because of manufacturing variances and possible product improvements, the compositions and physical properties listed here should be considered representative; the values listed should not be construed as specifications.

SECTION III–PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: >212 °F.

Specific Gravity (H_2O=1): 1.1.

Vapor Pressure (mm Hg): As water.

Melting Point: <32 °F.

Vapor Density (AIR = 1): As water.

Evaporation Rate (Butyl Acetate = 1): As water.

pH: 1 (Electrometric).

Volatile Organic Solvents (%Vol): None

Solubility in Water: Activator #7 is an aqueous solution–miscible with water.

Appearance and Odor: Blue-green liquid, no identifiable odor.

SECTION IV–FIRE AND EXPLOSION HAZARD DATA

Flash Point and Method: Non-Combustible ***Flammable Limits:*** N/A ***UEL:*** N/A

Extinguishing Media:
As appropriate for surrounding fire.

Special Fire-Fighting Procedures:
Wear self-contained breathing apparatus. If material is free to mix with water, mixing may result in acidic water runoff.

Unusual Fire and Explosion Hazards:
With extreme heating beyond dryness, decomposition of residue can yield sulfur oxides, and ammonia fumes.

SECTION V–REACTIVITY DATA

Stability: Unstable: N/A ***Stable:*** YES

Conditions to Avoid: N/A.

Incompatibilities (Materials to Avoid):
Chlorine, chlorate, nitrate, nitrite, and sulfide compounds; cyanides, alkalies, and highly reactive metals (potential for hydrogen gas generation).

Hazardous Decomposition or Byproducts:
On extreme heating beyond dryness: sulfur oxides, and ammonia fumes.

Hazardous Polymerization– May Occur: N/A ***Will Not Occur:*** YES

SECTION VI–HEALTH HAZARD DATA

Routes of Entry– Inhalation: AS MIST. ***Skin Absorption:*** NO. ***Ingestion:*** YES.

Health Hazards:
The following is based on information/recommendations for concentrated components.

Acute: DO NOT TAKE INTERNALLY. Can cause eye burns.
Irritant to skin, eyes and other mucous membranes. Exposure limits have not been established by OSHA or ACGIH.

Chronic:
None identified beyond acute hazards.

Carcinogenicity– NTP: N/A *IARC Monographs:* N/A *OSHA Regulated:* N/A
No component has been identified as a carcinogen.

Signs and Symptoms of Exposure:
None identified beyond irritation.

Medical Conditions Generally Aggravated by Exposure:
Chronic skin disorders; open wounds.

Emergency and First Aid Procedures:
Move to fresh air; flush affected area with water (especially under eyelids if eyes affected); remove contaminated clothing; treat for shock as necessary. Never give anything by mouth to an unconscious person.

If breathing stops, give artificial respiration. Call physician.

If taken internally, contact with eye/mucous membrane occurs, or irritation develops, contact physician/poison control center.

If taken internally and victim is conscious, give water to dilute stomach contents and rinse mouth. Slowly (to minimize rate of heat generation) give aluminum hydroxide gel or milk of magnesia to neutralize diluted acid. DO NOT GIVE carbonates or baking soda which may cause generation of carbon dioxide gas. Inducement of vomiting may aggravate local tissue irritation/injury and risks aspiration of vomitus. Milk/egg white may be useful for gastric irritation but may induce vomiting. If vomiting occurs keep head below hips to avoid aspiration of vomitus. Call physician.

SECTION VII–PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be Taken in Case Material is Released or Spilled:
Contain/absorb spill with inert material; ventilate area; restrict entry into area until material is collected/contained for proper disposal.
After pickup, clean effected area with mild alkaline (baking soda, etc.) and water solution.

Waste Disposal Method:
Comply with all federal, state and local regulations for ultimate disposal of acidic waste solution.
Can be neutralized with calcium oxide (lime) or sodium carbonate (soda ash).

Precautions to be Taken in Handling and Storing: DO NOT MIX WITH OTHER CHEMICALS.
Keep container closed when not in use; store/use in ventilated areas and avoid temperature extremes. Keep away from foodstuff, cyanide compounds, alkalies, reactive metals, and other incompatible materials. Do not store near combustible/flammable materials (in the event of fire and container rupture, there is the potential for acidic solution runoff from fire-fighting water).

Other Precautions: USE IN WELL-VENTILATED AREA. Keep away from children.
Activator #7 may give off some sulfur oxides during use.
To reduce the possibility of injury by splatter or obstruction of ventilation/air movement, do not crowd workpiece with body or face. Avoid conditions which could allow workpiece to: bend/spring-back and "flick" solution; or drop into puddled solution and splash.

SECTION VIII–CONTROL MEASURES

Respiratory Protection (Specify Type): NIOSH approved dust/mist respirator.

Ventilation: ***Local Exhaust:*** YES ***Special:*** N/A

Mechanical: As needed to augment exhaust. ***Other:*** N/A

Protective Gloves: Rubber, e.g. butyl or neoprene.

Eye Protection: Chemical splash goggles/face shield. Avoid use of contact lenses.

Other Protective Clothing or Equipment:
Inert, absorbent material for spills.
As appropriate: Rubber aprons/suits, eye wash fountain, safety shower.

Work/Hygienic Practices: DO NOT TAKE INTERNALLY. Keep away from eyes and out of open wounds.
Practice good personal hygiene; do not smoke/eat/drink in area of use; wash hands after use; wash clothing/materials which may have come in contact with chemicals.

SECTION IX–OTHER INFORMATION

Reportable Quantity:
Not regulated by DOT.

SHIPPING INFORMATION (IATA Regulations):

Proper Shipping Name: Sulphamic Acid Solution

UN NO.: 2967 ***Hazard Class:*** 8

Packaging Group No.: III ***DOT Label(s):*** N/A ***IATA Label(s):*** Corrosive

Packaging Exception: N/A

SECTION X–SOURCES OF INFORMATION

1. Merck Index, 9th Edition, 1976.
2. ACGIH, "Threshold Limit values for Chemical Substances in Work Air Adopted by ACGIH for 1990/91".
3. Code of Federal Regulations, 49.100-177, "Transportation", Revised, 1989.
4. Code of Federal Regulations, 29.1910.1000 (Subpart Z--Toxic and Hazardous Substances), "Labor", Revised 1987.
5. National Toxicology Program "Fourth Annual Report on Carcinogens", 1985 (excerpts).
6. Code of Federal Regulations, 40 CFR Part 372, Subpart D–Specific Toxic Chemical Listings, "Part 372.65, Chemicals and Chemical Categories to which this part [Release Reporting] Applies", Final Rule, Feb 16, 1988.
7. Code of Federal Regulations, 40.355 (Appendix A), "List of Extremely Hazardous Substances", Final Rule, April 22, 1988.
8. California Code of Regulations, 22 Division 2, "Safe Drinking Water and Toxic Enforcement Act of 1986", "12000., Chemicals Known to the State to Cause Cancer and Reproductive Toxicity", 1986.
9. IATA, "Dangerous Goods Regulations", January, 1989.
10. MSDS's from chemical suppliers which did not identify chemicals as hazardous.
11. DUPONT, "MSDS for Sulfamic Acid", 6/82.
12. DUPONT, "Properties and uses of Sulfamic Acid", 7/74.
13. Pettibone Chemicals, "MSDS for Sulfamic Acid", June 1, 1986, Rcvd 2/89.

SECTION XI–PACKAGE LABELING

RAPID ACTIVATOR NO. 7

See instructions on back of jar.

Manufactured by

RAPID ELECTROPLATING PROCESS, INC.

1414 S. Wabash Ave. • Chicago, Ill. 60605

Pats. Pending Made in U.S.A.

To prepare stainless, high carbon or HS Steel:

(1) Polish area to be plated with sharp abrasive cloth.

(2) Plug red lead into Applicator 430B and connect black lead to work. Turn switch to on and voltage to 6-9 volts.

(3) Dip Applicator 430B in Activator #7 and apply to work with firm rubbing, about 5-6 seconds per square inch, and wipe off. Turn switch to off and unplug Applicator 430B.

Any Rapid metal (except nickel, zinc or silver) can then be plated on the prepared work. A copper underplating is needed before plating other metals.

DO NOT MIX WITH SOLUTIONS CONTAINING CYANIDE

CAUTION: Can Cause Eye/Skin Burns. Use: Chemical Splash Goggles/Face Shield; Butyl or Neoprene Gloves; Adaquate Ventilation. Consult Your Safety Department and Material Safety Data Sheets Before Use.
Rapid Electroplating Process, Inc.
(312) 922-0952; Chemtrec 1-800-424-9300

USE IN WELL VENTILATED AREAS

This Material Safety Data Sheet was prepared in accordance with 29 CFR 1910.1200. All information, recommendations and suggestions appearing herein concerning our product are based upon information and data believed to be reliable. However, it is the user's responsibility to determine the safety, toxicity and suitability for his own use of the product described herein. Since the actual use by others is beyond our control, no guarantee expressed or implied is made by Rapid Electroplating Process, Inc. as to the effects of such use, the results to be obtained or the safety and toxicity of the product, nor does Rapid Electroplating Process, Inc assume any liability arising out of use by others of the product referred to herein. Nor is the information herein to be construed absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

Kay Crockett

R.N. 789

PM 304

Material Safety Data Sheet
May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

1-800-241-4898

VIGOR

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List)
Gold Plating Solution (Hamilton, 14 & 18Kt)

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name: Krohn Technical Products	Emergency Telephone Number: (201) 933-9696 Russel (chemist)
Address (Number, Street, City, State, and ZIP Code): 303 Veterans Blvd., Carlstadt, NJ 07072	Telephone Number for Information: (201) 933-9696
	Date Prepared: July 21, 1987
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))		OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Nickel Cyanide	Cas# 557-19-7		10 mg/m3 as HCn		
Potassium Cyanide	Cas# 151-50-8		10 mg/m3 as HCn		
Potassium Cyanoaurate	Cas# 554-07-04		10 mg/m3 as HCn		

1-9-91 Russel at Krohn Ind. 1-800-526-6299

Section III — Physical/Chemical Characteristics

Boiling Point	N.A.	Specify Gravity (H_2O = 1)	N.A.
Vapor Pressure (mm Hg.)	N.A.	Melting Point	N.A.
Vapor Density (AIR = 1)	N.A.	Evaporation Rate (Butyl Acetate = 1)	N.A.

Solubility in Water: Very soluble

Appearance and Odor: Clear solution, strong cyanide odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
None	N.A.	N.A.	N.A.

Extinguishing Media: Product does not burn. Use media suitable for surrounding fire.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Contact with acids will liberate toxic and flammable hydrogen cyanide gas.

Pin 304

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility (Materials to Avoid): Acids and strong oxidizing agents.

Hazardous Decomposition or Byproducts: Hydrogen cyanide gas and ammonia gas.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Yes Skin? Yes Ingestion? Yes

Health Hazards (Acute and Chronic): Acute: May be fatal through cyanide poisoning via cyanide ingestion or inhalation of hydrogen cyanide gas.

Chronic: Potential irritant to skin and eyes.

Signs and Symptoms of Exposure: Weakness, dizziness, headache, vomitting to finally unconsciousness.

Emergency and First Aid Procedures: EYE: Wash with a directed stream of water for 15 minutes. Get medical attention. SKIN: Immediately wash with soap and water. Remove contaminated clothing. INHALATION: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, give oxygen. Seek medical attention. SWALLOWING: Break an amyl nitrite pearl in a clean cloth and hold under nose for 15 seconds. If victim is conscious, induce vomiting by administering syrup of ipecac. Get medical attention immediately.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled: Work up wind. Absorb with inert absorbent, sweep up and place into a lined container properly labeled for disposal.

Waste Disposal Method: Send to refinery to recover precious metal.

Precautions to Be Taken in Handling and Storing: Store away from foods, acids or acid salts, or oxidizing agents.

Other Precautions: None

Section VIII — Control Measures

Respiratory Protection (Specify, Type): None

Ventilation	Local Exhaust	Yes	Special	None
	Mechanical (General)	Yes	Other	None

Protective Gloves: Butyl rubber or neoprene

Eye Protection: chemical safety goggles

Other Protective Clothing or Equipment: chemical apron

Work/Hygienic Practices: Eye fountain & safety shower should be available.

[FR Doc. 85-28201 Filed 11-25-85; 8:45 am]
BILLING CODE 4510-26-C

VIGOR

Material Safety Data Sheet

May be used to comply with
OSHA's Hazard Communication Standard,
29 CFR 1910.1200. Standard must be
consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form approved
OMB No. 1218-0072

789

IDENTITY *(As Used on Label and List)*
Gold Plating Solution (Hamilton, 14 & 18Kt)

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name Krohn Technical Products	Emergency Telephone Number 1-800-424-9300
Address *(Number, Street, City, State, and ZIP Code)* 303 Veterans Blvd., Carlstadt, NJ 07072	Telephone Number for Information (201) 933-9696
	Date Prepared September 1, 1990
	Signature of Preparer *(optional)*

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% *(optional)*
Nickel Cyanide Cas# 557-19-7		10 mg/m3 as HCn		
Potassium Cyanide Cas# 151-50-8		10 mg/m^3 as HCn		
Potassium Cyanoaurate Cas# 554-07-04		10 mg/m^3 as HCn		

Section III — Physical/Chemical Characteristics

Boiling Point	N.A.	Specify Gravity (H_2O = 1)	N.A.
Vapor Pressure (mm Hg.)	N.A.	Melting Point	N.A.
Vapor Density (AIR = 1)	N.A.	Evaporation Rate (Butyl Acetate = 1)	N.A.

Solubility in Water: Very soluble

Appearance and Odor: Clear solution, strong cyanide odor.

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
None	N.A.	N.A.	N.A.

Extinguishing Media: Product does not burn. Use media suitable for surrounding fire.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Contact with acids will liberate toxic and flammable hydrogen cyanide gas.

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid
	Stable	X	

Incompatibility *(Materials to Avoid)*
Acids and strong oxidizing agents.

Hazardous Decomposition or Byproducts
Hydrogen cyanide gas and amonia gas.

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? Yes Skin? Yes Ingestion? Yes

Health Hazards *(Acute and Chronic)*
Acute: May be fatal through cyanide poisoning via cyanide ingestion or inhalation of hydrogen cyanide gas.

Chronic: Potential irritant to skin and eyes.

Signs and Symptoms of Exposure Weakness, dizziness, headache, vomitting to finally unconsciousness.

Emergency and First Aid Procedures EYE: Wash with a directed stream of water for 15 minutes. Get medical attention. SKIN: Immediately wash with soap and water. Remove contaminated clothing. INHALATION: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, give oxygen. Seek medical attention. SWALLOWING: Break an amyl nitrite pearl in a clean cloth and hold under nose for 15 seconds. If victim is conscious, induce vomiting by administering syrup of ipecac. Get medical attention immediately.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled Work up wind. Absorb with inert absorbent, sweep up and place into a lined container properly labeled for disposal.

Waste Disposal Method Send to refinery to recover precious metal.

Precautions to Be Taken in Handling and Storing Store away from foods, acids or acid salts, or oxidizing agents.

Other Precautions None

Section VIII — Control Measures

Respiratory Protection *(Specify, Type)* None

Ventilation	Local Exhaust	Yes	Special	None
	Mechanical *(General)*	Yes	Other	None

Protective Gloves Butyl rubber or neoprene | Eye Protection chemical safety goggles

Other Protective Clothing or Equipment chemical apron

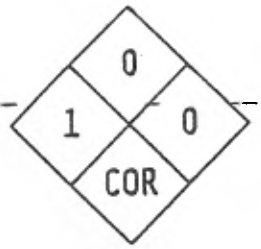
Work/Hygienic Practices Eye fountain & safety shower should be available.

[FR Doc. 85-28201 Filed 11-25-85; 8:45 am]
BILLING CODE 4510-26-C

R.N. 787

AMCHEM PRODUCTS, INC.
DIVISION OF HENKEL CORPORATION
300 BROOKSIDE AVENUE
AMBLER, PA 19002

AMCHEM



MATERIAL SAFETY DATA SHEET

787

REGIONAL OFFICE COPY
JULY 6, 1987

CUSTOMER # ********

PRODUCT TRADE NAME	AUXILIARY TEST SOLUTION 46
DOT PROPER SHIPPING NAME	Corrosive Liquid N.O.S.
DOT HAZARD CLASSIFICATION	Corrosive
TECHNICAL CONTACT (NAME)	Charles Gruszka
TELEPHONE NUMBER	(215) 628-1364 EMERGENCY NUMBER (215) 628-1000

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV
Hydrochloric Acid	7647-01-0	15-25	Corrosive	1 mg/M^3

2 PHYSICAL DATA

APPEARANCE	Clear colorless to faint yellow liquid		
SOLUBILITY IN WATER	Complete		
ODOR, @ 60 °F.	Sharp	pH of CONCENTRATE	<1
SPECIFIC GRAVITY @ 60 °F.	1.09-1.11	BOILING POINT, °F.	>212
OTHER:	N/A		

3 FIRE & EXPLOSION DATA

FLASH POINT	None
TEST METHOD	N/A
EXTINGUISHING MEDIA	Water

UNUSUAL FIRE OR EXPLOSION HAZARDS

None

SPECIAL FIRE FIGHTING PROCEDURES

None

4 REACTIVITY DATA

STABLE ☒ UNSTABLE ☐

CONDITIONS TO AVOID

INCOMPATIBLE MATERIALS

Alkalis

HAZARDOUS POLYMERIZATION WILL OCCUR ☐ WILL NOT OCCUR ☒

CONDITIONS TO AVOID

HAZARDOUS DECOMPOSITION PRODUCTS

Hydrogen chloride

5 HEALTH HAZARD DATA

Skin:	Will burn.
Eyes:	Will burn.
Ingestion:	Will burn mucous membranes.
Inhalation:	Will burn mucous membranes if prolonged.

6 FIRST AID RECOMMENDATIONS

Skin:	Wash with soap and water and rinse thoroughly. Anyone who appears to suffer skin burns from this product should be seen by a doctor.
Eyes:	Flush immediately with copious amounts of water for at least 15 minutes. Call a doctor.
Ingestion:	Drink milk of magnesia, aluminum hydroxide gel, or limewater, followed by several glasses of water. Call a doctor. Do not induce vomiting unless directed by a doctor.
Inhalation:	Remove from contaminated area to fresh air.

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Transfer any excess to a clean glass container. Neutralize remaining residue with dilute soda ash or lime to pH 7-8.

WASTE TREATMENT

Flush neutralized material to treatment plant with plenty of water and with approval of regulatory agency.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS	GENERAL AREA EXHAUST	☐
	LOCAL EXHAUST	☒
	NO EXHAUST NECESSARY	☐

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION	Safety goggles
SKIN PROTECTION	Rubber gloves
RESPIRATORY PROTECTION	None
OTHER REQUIRED EQUIPMENT	None

9 SPECIAL PRECAUTIONS & STORAGE

Store in a cool place.

PREPARED BY Charles Gruszka DATE 06/17/87

TITLE Senior Chemist

P11' 312

R.N. 788

Material Safety Data Sheet
May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form approved
OMB No. 1218-0072

IDENTITY (As Used on Label and List)
Electrocleaner

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name Krohn Technical Products, Inc.	Emergency Telephone Number 1-800-424-9300
Address (Number, Street, City, State, and ZIP Code) 303 Veterans Boulevard	Telephone Number for Information 201-933-9696
Carlstadt, New Jersey 07072	Date Prepared January 24, 1991
	Signature of Preparer (optional)

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)
Potassium Hydroxide CAS #1310-58-3		2mg/m^3		
Sodium Carbonate CAS #497-19-8		10mg/m^3		

Section III — Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H_2O = 1)	1.1884
Vapor Pressure (mm Hg.)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	N/A

Solubility in Water
N/A

Appearance and Odor
Clear solution, odorless

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
Not combustible	N/A	N/A	N/A

Extinguishing Media
N/A

Special Fire Fighting Procedures
N/A

Unusual Fire and Explosion Hazards
Reacts with trichloroethylene to form spontaneously flammable dichloroacetylene.

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid Potassium hydroxide can react violently with strong
	Stable	X	acids and with many organic chemicals, especially with nitrocarbons a:

Incompatibility (Materials to Avoid) chlorocarbc:

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? YES Skin? YES Ingestion? YES

Health Hazards (Acute and Chronic) Solutions can be corrosive to human tissue, producing burns and severe permanent eye injury. Dust/mist inhalation can injure the entire respiratory tract. Ingestic causes burns, extreme pain and esophageal stricture.

Carcinogenicity: NTP? NO IARC Monographs? NO OSHA Regulated? YES

Signs and Symptoms of Exposure skin, eye and/or respiratory irritation

Emergency and First Aid Procedures EYE CONTACT: Immediately flush with water for 15 minutes, including under eyelids. (Speed in rinsing may save eyesight.) Contact physician. Continue gentle flushing for 30 minutes or more until medical help is obtained. INHALATION: Safely remove to fresh air. Contact physician, have trained person administer oxygen for respiratory distress. INGESTION: Immediately give 2-3 glasses of milk or water to drink; then citris juice or diluted vinegar. Contact physician. Vomiting may occur spontaneously, but do not induce it. Repeat giving liquid if vomiting occurs.

ction VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled Clean up personnel need protection against inhalation of mists or dusts and skin or eye contact. Sodium bicarbonate may be used to partially neutralize.

Waste Disposal Method Follow Local, State and Federal Regulations.

Precautions to Be Taken in Handling and Storing Store in closed containers separate from acids, peroxides, easil ignitible materials and other incompatibles. Protect containers from physical damage. Have abundant water supply available where stored and used.

Other Precautions Reacts with trichloroethylene to form spontaneously flammable dichloroacetylene.

Section VIII — Control Measures

Respiratory Protection (Specify, Type) Self-contained respirator; full faceshield when TLV requirements are exceeded, especially where dusting or misting occurs.

Ventilation	Local Exhaust Provide general ventilation	Special	N/A
	Mechanical (General)	Other	N/A

Protective Gloves Neoprene or rubber Eye Protection chemical safety goggles or full faceshield

Other Protective Clothing or Equipment Eye fountain & safety shower should be available. apron, boots and other appropriate clothing to prevent contact

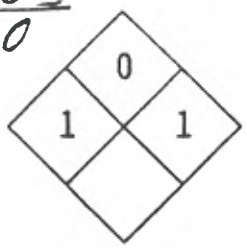
Work/Hygienic Practices Soiled clothing to be removed promptly and laundered before reuse. Wash thoroughly with soap and water after use.

[FR Doc. 85-28201 Filed 11-25-85; 8:45 am]
BILLING CODE 4510-26-C

R.N. 005
2-'90

Parker+Amchem

HENKEL CORPORATION
32100 Stephenson Highway
Madison Heights, Michigan 48071



MATERIAL SAFETY DATA SHEET

CUSTOMER #

VOC = 0

PRODUCT TRADE NAME	DEOXIDIZER 7 MAKE-UP
DOT PROPER SHIPPING NAME	Oxidizer, N.O.I., UN1479.
DOT HAZARD CLASSIFICATION	Oxidizer
TECHNICAL CONTACT (NAME)	Product Acceptance Office
TELEPHONE NUMBER	(313) 583-9300 EMERGENCY NUMBER 1-517-263-9430

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV/PEL
+Potassium Dichromate	7778-50-9	>60	Carcinogen, IARC, NTP, Corrosive	0.05 mg/m³ as Cr 0.50 mg/m³ as Cr
Potassium Nitrate	7757-79-1	10-30	Oxidizer	None
Sodium Bifluoride	1333-83-1	1-10	Corrosive	2.5 mg/m³ as F 2.5 mg/m³ as F

This product contains a chemical (+) subject to the reporting requirements of Section 313, Title III of SARA, Part 372.
WARNING: This product contains a chemical known to the State of California to cause cancer.

2 PHYSICAL DATA

APPEARANCE	Orange powder		
SOLUBILITY IN WATER	Complete		
ODOR	Bland	pH of CONCENTRATE	N/A
SPECIFIC GRAVITY	N/A	BOILING POINT, °F.	N/A
OTHER:	None		

234345c

3 FIRE & EXPLOSION DATA

FLASH POINT None

TEST METHOD N/A

EXTINGUISHING MEDIA As required to extinguish surrounding fire.

UNUSUAL FIRE OR EXPLOSION HAZARDS

Over 212°F material decomposes to sodium fluoride and poisonous and corrosive hydrogen fluoride. Also oxygen and toxic oxides of chromium and nitrogen.

SPECIAL FIRE FIGHTING PROCEDURES

Wear positive pressure self-contained breathing apparatus and full protective clothing.

4 REACTIVITY DATA

STABLE ☒ UNSTABLE ☐

CONDITIONS TO AVOID

Not applicable

INCOMPATIBLE MATERIALS

Keep separate from alkalies.
Organic materials, paint thinners or reducing agents.

HAZARDOUS POLYMERIZATION WILL OCCUR ☐
WILL NOT OCCUR ☒

CONDITIONS TO AVOID

Not applicable

HAZARDOUS DECOMPOSITION PRODUCTS

Hydrogen fluoride, chromic oxide, oxides of nitrogen.

5 HEALTH HAZARD DATA

EYES: Eye contact can cause severe burns and loss of vision.

SKIN: Contact with skin can cause irritation. Can cause skin sensitization.

INHALATION: Inhalation of dust can cause injury (burns) to the entire respiratory tract.

INGESTION: Can result in gastrointestinal damage; burns of the digestive tract. Chromic acid is considered very toxic. (As sodium dichromate, oral-rat LD50: 51.10 +/- 5.93 mg/kg.)

CHRONIC: Prolonged or repeated skin contact may cause "chrome sores". Long-term exposure can cause liver damage, kidney damage and dermatitis. Prolonged or repeated inhalation of mist may cause ulceration and performation of the nasal septum.

POSSIBLE CANCER HAZARD: There is laboratory evidence that aqueous sodium dichromate administered directly into the lung, at the highest tolerated dose, over the lifetime of rats, causes a significantly increased incidence of lung cancer. It is expected that if chromic acid was tested in the manner as aqueous sodium dichromate, it would give similar response. There is sufficient evidence for the carcinogenicity of chromium and certain chromium compounds both in humans and experimental animals.
Reference: NTP (National Toxicology Program), Annual Report on Carcinogens, 1983.
IARC (International Agency for Research on Cancer), Annual Report, 1982.

Medical Conditions Generally Aggravated by Exposure: Persons with a history of asthma, allergies or known sensitizations to chromic acid or chromates.

CHRONIC: Contains fluorides. Exposure to fluorides over years may cause fluorosis.

Medical Conditions Generally Aggravated by Exposure: Pre-existing skin disorders.

6 FIRST AID RECOMMENDATIONS

EYES: Immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION.

SKIN: Immediately remove contaminated clothing and shoes. Flush skin thoroughly with water for at least 15 minutes. Rinse clothing. If irritation persists, GET MEDICAL ATTENTION.

INGESTION: Drink large quantities of water. CORROSIVE. DO NOT INDUCE VOMITING. If vomiting occurs, drink more water. GET MEDICAL ATTENTION. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air and remove contaminated clothing. If breathing is difficult, administer oxygen. If respiration stops, give mouth to mouth resuscitation. GET MEDICAL ATTENTION.

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Wear protective clothing.
Sweep up or otherwise collect and store in suitable drum.
Flush the contaminated area with water.
Neutralize with an excess of lime (calcium hydroxide) and collect for disposal.
Do not permit substance to enter sewers or streams.

WASTE TREATMENT

This chemical contains chromium compounds and fluoride compounds
Waste treatment and neutralization may be required prior to discharge to a sewer.
Contact a licensed disposal agent.
Dispose of in compliance with all applicable federal, state and local regulations.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS	GENERAL AREA EXHAUST	☐
	LOCAL EXHAUST	☒
	NO EXHAUST NECESSARY	☐

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION	Chemical goggles or face shield.
SKIN PROTECTION	Neoprene or polyvinyl gloves, apron, boots as needed.
RESPIRATORY PROTECTION	Provide sufficient mechanical (general and/or local exhaust ventilation to maintain exposure below TLV(s). As required to keep exposure to chromium below recommended exposure levels.
OTHER REQUIRED EQUIPMENT	Eye wash facility and emergency shower should be in close proximity.

9 SPECIAL PRECAUTIONS & STORAGE

DO NOT BREATHE DUST.

DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.

Wash thoroughly after handling.

For industrial use only.

DO NOT TAKE INTERNALLY.

PREPARED BY Product Acceptance Office DATE 01/25/90

TITLE

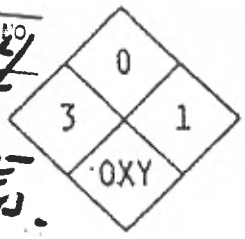
CHEMICAL EMERGENCY TELEPHONE 1-800-424-9300

Conditions: although the information presented herein is to the best of our knowledge true and accurate, no warranty or guarantee, express or implied, whether of merchantability, fitness for any particular purpose or otherwise, is made regarding the information or the performance of any product. In each case we strongly recommend that purchasers before using any product in full production make their individual tests to verify to their own satisfaction whether the product is of acceptable quality and is suited for their specific purposes under their own manufacturing conditions. Further, no representative of ours has any authority to waive or change the foregoing provisions. However, subject to such provisions, our technical personnel are available to assist purchasers in modifying our products for use consistent with their needs and conditions in existence in their business. Nothing contained herein shall be construed as a recommendation to use a product in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. We assume no liability for incidental, consequential or direct damages of any kind, no matter what the cause, including negligence. The above includes confidential and proprietary information of Parker+Amchem and is furnished to you for your use solely on products or processes supplied by us to you and should not be otherwise used or disclosed.

HAZARDOUS YES NO

RECORD NO. 004

EXTREME CARE MUST BE EXERCISED.



Parker+Amchem
HENKEL CORPORATION
32100 Stephenson Highway
Madison Heights, Michigan 48071

MATERIAL SAFETY DATA SHEET

CUSTOMER #

VOC=0

PRODUCT TRADE NAME	ALODINE 1200
DOT PROPER SHIPPING NAME	Chromic acid mixture, dry, NA1463.
DOT HAZARD CLASSIFICATION	Oxidizer
TECHNICAL CONTACT (NAME)	Product Acceptance Office
TELEPHONE NUMBER	(313) 583-9300 EMERGENCY NUMBER 1-517-263-9430

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV/PEL
Chromic Acid	1333-82-0	20-30	Oxidizer; Carcinogen, NTP, IARC	0.05 mg/M^3 as Cr 0.10 mg/m^3 as CrOc
Potassium Ferricyanide	13746-66-2	15-20	Irritant	N/A
Potassium Fluozirconate	16923-95-8	10-15	Irritant	2.5 mg/m^3 as F 2.5 mg/m^3 as F
Sodium Fluoborate	13755-29-8	30-40	Irritant	2.5 mg/m^3 as F 2.5 mg/m^3 as F

This product contains a chemical subject to the reporting requirements of Section 313, Title III of SARA, Part 372.

2 PHYSICAL DATA

APPEARANCE	Orange powder		
SOLUBILITY IN WATER	Appreciable		
ODOR	Bland	pH of CONCENTRATE	N/A
SPECIFIC GRAVITY	N/A	BOILING POINT, °F.	N/A
OTHER:	N/A		

3 FIRE & EXPLOSION DATA

FLASH POINT None

TEST METHOD N/A

EXTINGUISHING MEDIA Water

UNUSUAL FIRE OR EXPLOSION HAZARDS

Violent reactions may occur with organic materials or reducing agents.

SPECIAL FIRE FIGHTING PROCEDURES

Wear positive pressure self-contained breathing apparatus and full protective clothing.

4 REACTIVITY DATA

STABLE ☒ UNSTABLE ☐

CONDITIONS TO AVOID

None.

INCOMPATIBLE MATERIALS

Organic materials, reducing agents, alkaline materials.

HAZARDOUS POLYMERIZATION WILL OCCUR ☐

WILL NOT OCCUR ☒

CONDITIONS TO AVOID

Excessive heat.

HAZARDOUS DECOMPOSITION PRODUCTS

Hydrogen cyanide and hydrogen fluoride.

5 HEALTH HAZARD DATA

EYES: Eye contact may result in loss of vision with severe burns.

SKIN: Skin contact is corrosive to tissues.

INGESTION: Ingestion could result in tissue destruction of the digestive tract and severe irritation in the respiratory tract.

INHALATION: Inhalation of dust can be an irritant to the respiratory tract.

CHRONIC: Prolonged or repeated skin contact may cause "chrome sores". Long-term exposure can cause liver damage, kidney damage and dermatitis. Prolonged or repeated inhalation of mist may cause ulceration and performation of the nasal septum.

POSSIBLE CANCER HAZARD: There is laboratory evidence that aqueous sodium dichromate administered directly into the lung, at the highest tolerated dose, over the lifetime of rats, causes a significantly increased incidence of lung cancer. It is expected that if chromic acid was tested in the manner as aqueous sodium dichromate, it would give similar response. There is sufficient evidence for the carcinogenicity of chromium and certain chromium compounds both in humans and experiemental animals.
Reference: NTP (National Toxicology Program), Annual Report on Carcinogens, 1983.
IARC (International Agency for Research on Cancer), Annual Report, 1982.

6 FIRST AID RECOMMENDATIONS

EYES: Immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION.

SKIN: Wash thoroughly with soap and water.

INGESTION: Drink large quantities of water. CORROSIVE. DO NOT INDUCE VOMITING. If vomiting occurs, drink more water. GET MEDICAL ATTENTION. Never give anything by mouth to an unconscious person.

INHALATION: Remove to fresh air. If breathing is difficult, give oxygen. GET MEDICAL ATTENTION.

.7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Transfer any excess to a clean polyethylene container. Treat the residue with a dilute solution of metabisulfite to reduce the chrom. Neutralize with lime to pH = 7 - 8.

WASTE TREATMENT

This chemical contains chromium compounds and fluoride compounds Waste treatment and neutralization may be required prior to discharge to a sewer.
Applicable regulations may require removal of potassium ferricyanide before disposing to a sewer.
This chemical is a hazardous waste as defined by EPA Hazardous Waste and Consolidated Permit Regulations (or consult equivalent state regulations).
Hazardous Waste Characteristic: Ignitability, Title 40, Code of Federal Regulations, 261.21, Hazardous Waste Number D001. (Contains an oxidizer.)

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS	GENERAL AREA EXHAUST	☐
	LOCAL EXHAUST	☒
	NO EXHAUST NECESSARY	☐

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION	Chemical goggles or face shield.
SKIN PROTECTION	Neoprene or polyvinyl gloves and appropriate protectiv clothing.
RESPIRATORY PROTECTION	Use NIOSH-approved respirator as required to prevent overexposure.
OTHER REQUIRED EQUIPMENT	Eye wash facility should be in close proximity.

9 SPECIAL PRECAUTIONS & STORAGE

DO NOT GET IN EYES, ON SKIN OR ON CLOTHING.

For industrial use only.

Contact with combustible material may cause fire.

PREPARED BY Product Acceptance Office DATE 08/31/88

TITLE

D

#197

MATERIAL SAFETY DATA SHEET

12-12-88

CHEMICAL NAME AND SYNONYMS: N/A

CHEMICAL FAMILY: N/A | TRADE NAME: #197 ROSIN FLUX

FORMULA: MIXTURE | D.O.T. SHIPPING CLASS: FLAMMABLE LIQUID, N.O.S.

I. PHYSICAL DATA

BOILING POINT (°F)	180	SPECIFIC GRAVITY (WATER=1)	0.891
VAPOR PRESSURE (mmHg)	33	PERCENT VOLATILE (BY VOLUME)	70
VAPOR DENSITY (AIR=1)	2.1	EVAPORATION RATE (B.Acet.=1)	1.7
SOLUBILITY IN WATER (% by wt.)	63		
APPEARANCE AND ODOR	AMBER LIQUID WITH ALCOHOL ODOR		

II. HAZARDOUS INGREDIENTS

MATERIAL	%	OSHA-PEL	ACGIH TLV/STEL	C.A.S. REGISTRY #
ROSIN*	37	N/A*	N/A*	8050-09-7
ISOPROPANOL	56	400ppm	500ppm	67-63-0

NONE OF THE INGREDIENTS IS LISTED AS CARCINOGENIC BY IARC, NTP OR OSHA

FLUX FUMES MAY CAUSE PULMONARY IRRITATION AND LUNG DAMAGE -

*ROSIN MAY DECOMPOSE DURING HEATING TO LIBERATE ABOUT 5% TURPENTINE (TLV=100ppm). SOME ROSIN IS CARRIED UP IN SMOKE -

III. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (T.O.C.): 65°F | FLAMMABILITY LIMITS IN AIR (% by volume): LOWER: 2.0 | UPPER: 12.0

EXTINGUISHING MEDIA: WATER | CARBON DIOXIDE [X] | ALCOHOL FOAM [X] | DRY CHEMICAL [X]

SPECIAL FIRE FIGHTING PROCEDURES: USE WATERSPRAY TO COOL FIRE-EXPOSED CONTAINERS AND CONTROL VAPORS -

UNUSUAL FIRE AND EXPLOSION HAZARDS: AUTO IGNITION TEMPERATURE IS 750°F -

NFPA RATING:

The information contained herein is based on data considered accurate and given in good faith but no warranty, expressed or implied, is made.

LITTON/KESTER SOLDER
515 EAST TOUHY AVENUE
DES PLAINES, IL 60018
EMERGENCY PHN (312) 297-1600

568-11/88

IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: ACGIH TLV/STEL (500ppm); OSHA-PEL (400ppm) - ISOPROPANOL

EFFECTS OF OVER-EXPOSURE: CONTACT WITH LIQUID MAY CAUSE SKIN AND EYE IRRITATION - ROSIN IS AN ALLERGEN AND MAY CAUSE RASH, HEADACHE OR RESPIRATORY IRRITATION IN A SENSITIVE PERSON - HIGH VAPOR CONCENTRATIONS MAY INDUCE TRANSIENT NARCOSIS -

EMERGENCY AND FIRST AID PROCEDURES:

EYE CONTACT: FLUSH WITH WATER FOR 15 MIN AND GET MEDICAL ATTENTION -

SKIN CONTACT: WASH WITH SOAP AND WATER -

INHALATION: REMOVE TO FRESH AIR -

INGESTION: INDUCE VOMITING AND CALL A PHYSICIAN -

ROUTES OF ENTRY: INHALATION AND INGESTION -

V. REACTIVITY DATA

STABILITY: UNSTABLE [ ] | STABLE [X] | CONDITIONS TO AVOID: SPARKS, OPEN FLAME

INCOMPATIBILITY (MATERIALS TO AVOID): STRONG OXIDIZERS -

HAZARDOUS DECOMPOSITION PRODUCTS: SMALL AMOUNT OF TURPENTINE -

HAZARDOUS POLYMERIZATION: MAY OCCUR [ ] | WILL NOT OCCUR [X] | CONDITIONS TO AVOID: NONE

VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: ELIMINATE SOURCES OF IGNITION - SOAK UP WITH ABSORBENT - CLEAN UP RESIDUAL WITH ALKALINE DETERGENT -

WASTE DISPOSAL METHOD: ACCORDING TO LOCAL REGULATIONS - USUALLY BY INCINERATION -

VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NOT USUALLY REQUIRED -

VENTILATION: LOCAL EXHAUST: REMOVE SMOKE FROM BREATHING AREA | MECHANICAL (GENERAL): RECOMMENDED | SPECIAL: N/A | OTHER: N/A

PROTECTIVE GLOVES: RECOMMENDED | EYE PROTECTION: SAFETY GLASSES

OTHER PROTECTIVE EQUIPMENT: NONE

VIII. SPECIAL PRECAUTIONS

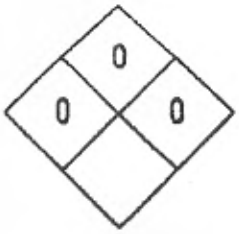
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: STORE AWAY FROM SOURCES OF IGNITION - AVOID EYE CONTACT - AVOID PROLONGED AND/OR REPEATED SKIN CONTACT - AVOID BREATHING SMOKE DURING SOLDERING -

OTHER PRECAUTIONS: NONE

VOC - 50 g/l

230

Parker Amchem
HENKEL CORPORATION
32100 Stephenson Highway
Madison Heights, Michigan 48071



MATERIAL SAFETY DATA SHEET

CUSTOMER #

HAZARDOUS YES ✓ NO
RECORD NO. 544
11-90

PRODUCT TRADE NAME	INDICATOR 11
DOT PROPER SHIPPING NAME	Not DOT regulated
DOT HAZARD CLASSIFICATION	None
TECHNICAL CONTACT (NAME)	Product Acceptance Office
TELEPHONE NUMBER	(313) 583-9300 EMERGENCY NUMBER 1-517-263-9430

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENTS (% WT/WT)	HAZARD	TLV/PEL
Bromphenol Blue	115-39-9	0.04	None	None
Sodium Hydroxide	1310-73-2	0.02	Corrosive	C 2 mg/m³ C 2 mg/m³
Remainder-water				

2 PHYSICAL DATA

APPEARANCE	Clear blue liquid		
SOLUBILITY IN WATER	Complete		
ODOR	None	pH of CONCENTRATE	5.6
SPECIFIC GRAVITY	Approx. 1	BOILING POINT, °F.	>210°F

OTHER: None

3 FIRE & EXPLOSION DATA

FLASH POINT: None
TEST METHOD: Not applicable
EXTINGUISHING MEDIA: As required to extinguish surrounding fire.
UNUSUAL FIRE OR EXPLOSION HAZARDS
None
SPECIAL FIRE FIGHTING PROCEDURES
None

4 REACTIVITY DATA

STABLE ☒ UNSTABLE ☐

CONDITIONS TO AVOID

None

INCOMPATIBLE MATERIALS

None

HAZARDOUS POLYMERIZATION WILL OCCUR ☐

WILL NOT OCCUR ☒

CONDITIONS TO AVOID

None

HAZARDOUS DECOMPOSITION PRODUCTS

None

5 HEALTH HAZARD DATA

EYES AND SKIN: Contact may cause mild irritation.

INHALATION: None expected for normal operations.

Pre-existing Medical Conditions Generally Aggravated by Exposure: No information available.

No component of this chemical is listed in the NTP Annual Report on Carcinogens, IARC Monographs or is regulated as a carcinogen by OSHA.

6 FIRST AID RECOMMENDATIONS

EYES: Immediately flush eyes in a directed stream of water for at least 15 minutes while forcibly holding eyelids apart to ensure complete irrigation of all eye and lid tissue. GET MEDICAL ATTENTION.

SKIN: Wash thoroughly with soap and water.

INGESTION: Do not induce vomiting. GET MEDICAL ATTENTION.

INHALATION: Remove to fresh air. If breathing is difficult, give oxygen. GET MEDICAL ATTENTION.

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES

Dike to contain spill.
Absorb or otherwise collect spill and place in suitable drum for disposal.

WASTE TREATMENT

Contact a licensed disposal agent.
Dispose of in compliance with all applicable federal, state and local regulations.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS	GENERAL AREA EXHAUST	☒
	LOCAL EXHAUST	☐
	NO EXHAUST NECESSARY	☐

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION	Chemical goggles
SKIN PROTECTION	Neoprene or polyvinyl gloves and appropriate protectiv clothing.
RESPIRATORY PROTECTION	Not normally required
OTHER REQUIRED EQUIPMENT	Eye wash facility and emergency shower should be in close proximity.

9 SPECIAL PRECAUTIONS & STORAGE

AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

For industrial use only.

PREPARED BY Product Acceptance Office DATE 02/07/90

TITLE

CHEMICAL EMERGENCY TELEPHONE 1-800-424-9300

Conditions: although the information presented herein is to the best of our knowledge true and accurate, no warranty or guarantee, express or implied, whether of merchantability, fitness for any particular purpose or otherwise, is made regarding the information or the performance of any product. In each case we strongly recommend that purchasers before using any product in full production make their individual tests to verify to their own satisfaction whether the product is of acceptable quality and is suited for their specific purposes under their own manufacturing conditions. Further, no representative of ours has any authority to waive or change the foregoing provisions. However, subject to such provisions, our technical personnel are available to assist purchasers in modifying our products for use consistent with their needs and conditions in existence in their business. Nothing contained herein shall be construed as a recommendation to use a product in infringement of any existing patent, and we assume no responsibility or liability for operations which do infringe any such patents. We assume no liability for incidental, consequential or direct damages of any kind, no matter what the cause, including negligence. The above includes confidential and proprietary information of Parker+Amchem and is furnished to you for your use solely on products or processes supplied by us to you and should not be otherwise used or disclosed.

AMCHEM PRODUCTS, INC.
Division of Henkel Corporation
300 Brookside Avenue
Ambler, PA 19002

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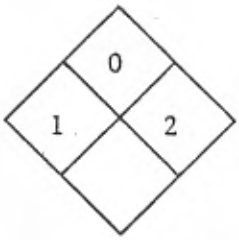


MATERIAL SAFETY DATA SHEET

VOC = 0

PRODUCT TRADE NAME	- Hydro-Fax Reductant 214		
D.O.T. PROPER SHIPPING NAME	- Not Regulated		
D.O.T. HAZARD CLASSIFICATION	- None		
TECHNICAL CONTACT (NAME)	- Charles Gruszka		
TELEPHONE NUMBER	215-628-1364	EMERGENCY NUMBER	215-628-1000

1 HAZARDOUS INGREDIENTS

MATERIAL	CAS NO.	CONTENT(% WT/WT)	HAZARD	TLV
Sodium Bisulfite	7631-90-5	45-55	Irritant	5 mg/M^3
Zinc Sulfate	7733-02-0	45-55	Irritant	N/A

2 PHYSICAL DATA

APPEARANCE	- White powder	SOLUBILITY IN WATER	- Appreciable
ODOR	- Faint acid odor	pH OF CONCENTRATE @60° F	- N/A
SPECIFIC GRAVITY @ 60°F	- N/A	BOILING POINT °F	- N/A
OTHER:	- N/A		

3 FIRE AND EXPLOSION DATA

FLASH POINT	None	TEST METHOD		EXTINGUISHING MEDIA	- Water

UNUSUAL FIRE OR EXPLOSION HAZARDS - Sulfur dioxide may be released if heated to decomposition.

SPECIAL FIRE FIGHTING PROCEDURES - Use mask to avoid sulfur dioxide fumes which may be emitted.

4 REACTIVITY DATA

STABLE ☒ UNSTABLE ☐ (CONDITIONS TO AVOID)

INCOMPATIBLE MATERIALS - Acids, oxidants

HAZARDOUS POLYMERIZATION WILL NOT OCCUR ☒

MAY OCCUR ☐

CONDITIONS TO AVOID

HAZARDOUS DECOMPOSITION PRODUCTS - Sulfur dioxide

5 HEALTH HAZARD DATA

Skin - Will irritate and may cause ulcer in open sore.

Eyes - Will irritate

Ingestion - Will irritate mucous membranes and may cause diarrhea and blood pressure problems.

Inhalation - Will irritate and may cause vomiting.

6 FIRST AID RECOMMENDATIONS

Skin - Wash with soap and water and rinse thoroughly.

Eyes - Flush immediately with copious amounts of water for at least 15 minutes. Call a doctor.

Ingestion - Dilute by drinking several glasses of water or milk. Call a doctor. Do not induce vomiting unless directed by a doctor.

Inhalation - Remove from contaminated area to fresh air.

7 SPILL PROCEDURES & WASTE DISPOSAL

SPILL PROCEDURES - Transfer any excess to a clean polyethylene container. Dilute remaining residue with plenty of water.

WASTE TREATMENT - Flush diluted residue to treatment plant with plenty of water and with approval of regulatory agency.

8 PERSONAL PROTECTION

VENTILATION REQUIREMENTS

GENERAL AREA EXHAUST ☐

LOCAL EXHAUST ☒

NO EXHAUST NECESSARY ☐

PERSONAL PROTECTIVE EQUIPMENT

EYE PROTECTION - Safety Goggles

SKIN PROTECTION - Rubber Gloves & Apron

RESPIRATORY PROTECTION - Dust mask - NIOSH approved.

OTHER REQUIRED EQUIPMENT - N/A

9 SPECIAL PRECAUTIONS AND STORAGE

Store in a cool dry place away from acids and oxidants.

PREPARED BY Charles Gruszka

TITLE Senior Chemist

DATE 5/15/86 (rev.)

HAZARD RATING

0
1 0

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*
Aquatene GM330

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name Graymills Corporation	Emergency Telephone Number 312-248-6825
Address *(Number, Street, City, State, and ZIP Code)* 3705 N. Lincoln Ave.	Telephone Number for Information 312-477-4100
Chicago, IL 60613	Date Prepared 8/8/88
	Signature of Preparer *(optional)* Frank K. Barr

Section II — Hazardous Ingredients/Identity Information

Hazardous Components (Specific Chemical Identity; Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	CAS #	% *(optional)*
DPM (Dipropylene Glycol Methyl Ether)	100PPM	100 PPM		34590-94-8	2
Alkaline detergent	N/A	N/A			10

Section III — Physical/Chemical Characteristics

Boiling Point °F	210-220	Specific Gravity (H_2O = 1)	1
Vapor Pressure (mm Hg.) @20°C	0.6	Melting Point	90
Vapor Density (AIR = 1)	<	Evaporation Rate (Butyl Acetate = 1)	<

Solubility in Water
100%

Appearance and Odor
Aqua color - Pleasant odor

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used)	Flammable Limits	LEL	UEL
None	None		

Extinguishing Media
Non flammable

Special Fire Fighting Procedures
None

Unusual Fire and Explosion Hazards
None

(Reproduce locally)

Section V — Reactivity Data

Stability	Unstable		Conditions to Avoid: Addition of strong acids
	Stable	X	

Incompatibility (*Materials to Avoid*): Acids

Hazardous Decomposition or Byproducts: None

Hazardous Polymerization	May Occur		Conditions to Avoid: None
	Will Not Occur	X	

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? None | Skin? mild irritation | Ingestion? none

Health Hazards (*Acute and Chronic*): none

Carcinogenicity: NTP? No | IARC Monographs? No | OSHA Regulated? No

Signs and Symptoms of Exposure: none

Medical Conditions Generally Aggravated by Exposure: none

Emergency and First Aid Procedures: Flush skin and eyes with water, seek medical attention if eyes are irritated

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled: Wash with water

Waste Disposal Method: Dilute to under 9.0 PH. Skim all oil from the surface and remove metal ships and sludge from solution before discharging to sewer.

Precautions to Be Taken in Handling and Storing: Do nor store in aluminum, copper or their alloys.

Other Precautions: Solution may effect plated parts, use caution.

Section VIII — Control Measures

Respiratory Protection (*Specify Type*): None

Ventilation	Local Exhaust: None	Special: None
	Mechanical (*General*): None	Other: None

Protective Gloves: Rubber | Eye Protection: Safety glasses

Other Protective Clothing or Equipment: no

Work/Hygienic Practices: Use Lanolin cream if skin gets dry.

★ U.S.G.P.O.: 1988-491-529/45775

HAZARD RATING

Material Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

U.S. Department of Labor
Occupational Safety and Health Administration
(Non-Mandatory Form)
Form Approved
OMB No. 1218-0072

IDENTITY *(As Used on Label and List)*
GM581

Note: Blank spaces are not permitted. If any item is not applicable, or no information is available, the space must be marked to indicate that.

Section I

Manufacturer's Name GRAYMILLS CORPORATION	Emergency Telephone Number 312/248-6825
Address *(Number, Street, City, State, and ZIP Code)* 3705 N. LINCOLN AVE. CHICAGO, ILLINOIS 60613	Telephone Number for Information 312/477-4100
	Date Prepared 5-18-88
	Signature of Preparer *(optional)* Frank X. Barr

Section II — Hazardous Ingredients/Identity Information

UN 1759

Hazardous Components (Specific Chemical Identity: Common Name(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% *(optional)*
Sodium Hydroxide (Powder) CAS 1310-73-2	$2_{mg/M^3}$			Approx. 50%

Section III — Physical/Chemical Characteristics

Boiling Point	N/A	Specific Gravity (H_2O = 1)	N/A
Vapor Pressure (mm Hg.)	N/A	Melting Point	N/A
Vapor Density (AIR = 1)	N/A	Evaporation Rate (Butyl Acetate = 1)	0

Solubility in Water
Very Good PH 1% Solution 13.3

Appearance and Odor
Off White Odorless, Granular Compound

Section IV — Fire and Explosion Hazard Data

Flash Point (Method Used) NONE	Flammable Limits NONE	LEL	UEL

Extinguishing Media
NONE

Special Fire Fighting Procedures
NONE

Unusual Fire and Explosion Hazards
NONE

ctivity Data

able		Conditions to Avoid: Addition of Acids
able	X	

ompatibility (*Materials to Avoid*)

Hazardous Decomposition or Byproducts

Hazardous Polymerization	May Occur		Conditions to Avoid: Do Not Use Hot Water When Mixing, It Heats Enough
	Will Not Occur	X	On Its Own InCold Water

Section VI — Health Hazard Data

Route(s) of Entry: Inhalation? X Skin? X Ingestion? X

Health Hazards (*Acute and Chronic*) Inhalation Of Both Dust And/Or Mist Of Solution Are Corrosive To The Respiratory Tract And Esophagus. Contact On Skin May Cause Burns

Carcinogenicity: NTP? NONE IARC Monographs? OSHA Regulated?

Signs and Symptoms of Exposure: Irritation Of Throat, Coughing

Medical Conditions Generally Aggravated by Exposure: Asthma, Emphysema, All Bronchial Ailments

Emergency and First Aid Procedures: Skin:Wash Off With Water And Vinegar. Eyes: Irrigate With Water For 15 Mins. See Doctor. Ingestion: Contains Caustic Soda. Do Not Induce Vomitting.

Section VII — Precautions for Safe Handling and Use

Steps to Be Taken in Case Material Is Released or Spilled: Wash Directly To Sewer With Plenty Of Water

Waste Disposal Method: Dilute To Under 9.0PH. Skim All Oil From The Surface And Remove Metal Chips And Sludge From The Solution Before Discharging To Sewer

Precautions to Be Taken in Handling and Storing: Do Not Store In Aluminum, Copper, Keep Drum Closed

Other Precautions: Do Not Use Solution With Plated Parts, Aluminum, Brass, Zinc Or Magnesium. Avoid All Bodily Contact

Section VIII — Control Measures

Respiratory Protection (*Specify Type*): NIOSH Approved Dust And Mist Respirator (DM)

Ventilation	Local Exhaust: X (Min. Rate)	Special
	Mechanical (*General*)	Other

Protective Gloves: YES: PVC

Eye Protection: Safety Glasses

Other Protective Clothing or Equipment: Face Shield,Boots (PVC) Aprons

Work/Hygienic Practices: Eye Wash Much Be Near Work Place

* USGPO 1988-491-329/45775

- REACTIVITY DATA

UNSTABLE		CONDITIONS TO AVOID: Heating strictly forbidden
STABLE	X	

INCOMPATIBILITY (MATERIAL TO AVOID): Acids, strong oxidizers such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite.

HAZARDOUS DECOMPOSITION OF BYPRODUCTS: Carbon dioxide, carbon monoxide, fumes smoke, aldehydes upon incomplete combustion.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID: None
	WILL NOT OCCUR	X	

SECTION VI - HEALTH HAZARD DATA

ROUTE(S) OF ENTRY	INHALATION	X	SKIN	X	INGESTION	X

HEALTH HAZARDS (ACUTE & CHRONIC): Skin irritation.
Oral: LD 50 >4000 mg/kg - Rat Dermal: LD 50 >2200 mg/kg - Rabbit
Inhalation: LC 50 >5000 ppm - Rat

CARCINOGENICITY	NTP	No	IARC MONOGRAPHS	No	OSHA REGULATED	No

SIGNS & SYMPTOMS OF EXPOSURE:
Skin or eye irritation, dizzyness, headache.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:
Skin allergies; respiratory allergies.

EMERGENCY & FIRST AID PROCEDURES:
Skin contact: Flush with water. Use lanolin cream.
Inhalation: Get oxygen or fresh air, call doctor.
Ingestion: Do not induce vomiting, call doctor.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Use absorbent material or sand. Shovel into waste container. Dispose of properly.

WASTE DISPOSAL METHOD: Reclaim by distillation or have disposal performed by a licensed waste hauler. Waste disposal #D001.

PRECAUTIONS TO BE TAKEN IN HANDLING & STORING:
Store in cool area away from heat or open flames.

OTHER PRECAUTIONS:
Not biodegradable.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE): None

VENTILATION	LOCAL EXHAUST: None MECHANICAL (GENERAL): General room ventilation	SPECIAL: None OTHER: None

PROTECTIVE GLOVES:	Rubber or Buna	EYE PROTECTION:	Chemical splash goggles

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:
For constant use, rubber gloves and solvent resistant apron are recommended.

WORK/HYGIENIC PRACTICES:
Use lanolin cream if gloves are not worn.

GRAYMILLS CORPORATION

MATERIAL SAFETY DATA SHEET

Conforms to OSHA form No. 1218-0072
Complies with OSHA hazard communication standard, 29CFR1910.1200

NFPA HAZARD RATING
HEALTH = 1
FLAMMABILITY = 2
REACTIVITY = 0

IDENTITY: Super Agitene - Cleaning compound. Combustible liquid.

SECTION I

MANUFACTURERS NAME:
Graymills Corporation

ADDRESS:
3705 N. Lincoln Avenue
Chicago, Illinois 60613

EMERGENCY #: (312) 248-6825

TELEPHONE #: (312) 477-4100

DATE PREPARED: October 25, 1990

PREPARERS SIGNATURE: Richard M Lesser

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (SPECIFIC CHEMICAL IDENTITY/COMMON NAME(S):	OSHA PEL	ACGIH TLV	CAS#
Aliphatic Petroleum Distillate	300 PPM	100 PPM	64742-47-8
Dipropylene Glycol Methyl Ether	100 PPM	100 PPM	34590-94-8

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT (F.):	318°-388°	SPECIFIC GRAVITY (WATER=1)	.78
VAPOR PRESSURE(mm Hg)@25 C.:	10.0	MELTING POINT:	None
VAPOR DENSITY(AIR=1):	4.8	EVAPORATION RATE(N-BUTYL ACETATE=1)	<0.1

SOLUBILITY IN WATER: None

APPEARANCE & ODOR: Clear green - mild mineral spirits odor.

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT(METHOD USED):	FLAMMABLE LIMITS:	LEL	UEL
110°F Tag CC (ASTM D56)		0.6%	7.0%

EXTINGUISHING MEDIA:
CO2, foam, dry chemicals, water spray (fog)

SPECIAL FIRE FIGHTING PROCEDURES: Cool sealed drums with water to lessen chance of rupture. Wear self-contained breathing gear. Minimize breathing of gases, vapors or decomposition products

UNUSUAL FIRE AND EXPLOSION HAZARDS:
Combustible liquid, drums could fracture if heated. Autoignition temperature approximately 450°F (232°C).

SA

SUPER AGITENE® CONCENTRATE

Contains all of the ingredients and cleaning features found in Super Agitene, while requiring less storage space. Mix with mineral spirits to produce a working solution. Available in 5 gal. pails or 55 gal. drums.

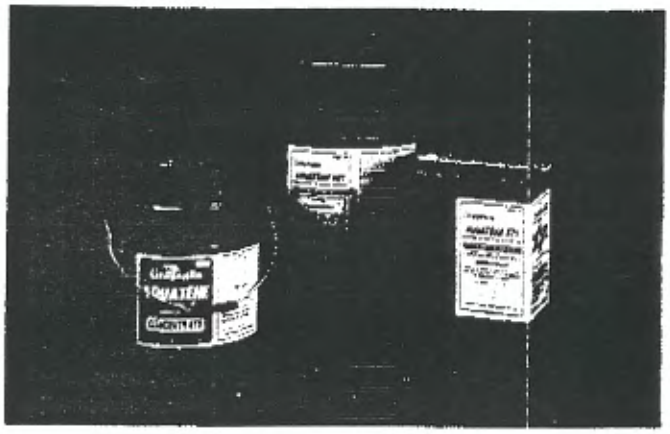
REGULAR AGITENE®

Regular Agitene provides the same high quality cleaning action as Super Agitene, but with two important differences. First, it leaves cleaned parts film-free, making it ideal for cleaning parts which are to be painted. Second, it will not attack varnish, allowing varnish-insulated electric motor components to be cleaned without damage. Available in 5 gal. pails or 55 gal. drums. Not to be heated; use at room temperature.

compound mixes at 3 to 8 ozs. per gallon of water. Use heated, up to 180° F (82° C) for faster cleaning action. Available in 25 lb. cartons or 100 lb. fiber drums.

AQUATENE® 581

Formulated for cleaning ferrous metals. Powdered detergent compound mixes at 12 to 20 ozs. per gallon of water. Heated to 200° F (93° C), it effectively removes surface rust. Free-rinsing properties ensure a uniform process surface prior to secondary metal treatment phases. Not for use with non-ferrous metals such as aluminum and zinc, or for plating other than nickel. Should be used hot, 150-210° F (65-99° C). Available in 100 lb. fiber drums.



For Use In	Super Agitene General Purpose	Regular Agitene General Purpose	Aquatene 330 General Purpose	Aquatene 571 Non-ferrous Metals	Aquatene 581 Ferrous Metals
Clean-O-Matic®	■	■			
Flo-Bac®	■	■			
Handi-Kleen®	■	■			
Turbo Parts Cleaner (Cold)	■	■			
Turbo Parts Cleaner (Hot)			●	●	●
Liftkleen (Cold)	■	■			
Liftkleen (Hot)			●	●	●
Soak & Dip Tanks	■	■			
Spray Washing Cabinets			●	●	●
Tempest			●	●	
Drum Mounts (Cold)	■	■			
Drum Mounts (Hot)			●		

COUNTY SANITATION DISTRICTS OF ORANGE COUNTY
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
10844 ELLIS AVENUE
FOUNTAIN VALLEY, CALIFORNIA 92708-7018
(714) 962-2411
FAX (714) 962-3954

USE CHARGE INVOICE

AMERICAN ELECTRONICS
1600 E VALENCIA DR
FULLERTON CA 92634

INVOICE DATE: 2/01/91
INVOICE NO.: 861325
QUARTERLY BILLING
CHARGES THROUGH: 2/01/91
DUE DATE: 3/18/91
PERMIT NO.: 2-140
I.D. NO.: 21140
CONSUMPTION LOSS: 5.00%

2ND QUARTER EST. USE CHARGE

OCT 1, 1990 - DEC. 31, 1990

***** PLEASE NOTE DUE DATE *****
***** 10% PENALTY ON PAST DUE AMOUNT *****

DESCRIPTION OF CHARGES			BASIS	RATE	EXTENSION
IND VOLUME			.511	182.590	93.30
SANITARY VOLUME			.500	182.590	91.30
SANITARY BOD	250	MG/L	1.043	120.980	126.18
IND SUSP SOLIDS	60	MG/L	.256	154.580	39.57
SAN SUSP SOLIDS	250	MG/L	1.043	154.580	161.23
TAX CREDIT FISCAL YEAR 91			-1006.040	.250	-251.51

**** BASIS IS DEPENDENT ON QUARTERLY BILLING ****

INVOICE

2-5-91

TO BETTER SERVE YOU AND AS ONE OF YOUR PERMIT CONDITIONS, THE DISTRICTS REQUEST THAT YOUR FIRM SUBMIT COPIES OF YOUR WATER AND TAX BILLS AS OBTAINED. THANK YOU

** INVOICE ** TOTAL ** 260.07

PREVIOUS BALANCE

(TOTAL INVOICE AMOUNT NOW DUE) 250.07

Form A-111 (Rev. 3/90)

ORIGINAL INVOICE

ENGINEERING AND COMMUNITY DEVELOPMENT DEPARTMENT

303 WEST COMMONWEALTH AVENUE • FULLERTON, CALIFORNIA 92632

BACKFLOW PREVENTION DEVICE TEST AND MAINTENANCE REPORT

OWNER: AMERICAN ELECTRONICS
ADDRESS: 1600 E. VALENCIA DR. FULLERTON, CA. 92631

LOCATION OF DEVICE: PLATING AREA ON WALL

MANUFACTURER: FEBCO 765 TYPE: P.V.B. SIZE: 3/4" SERIAL NO.: 29824

TESTER NO. 1336 DATE 11/8/90 LINE PRESSURE _____

INITIAL TEST:

CHECK VALVE 1	CHECK VALVE 2	RELIEF VALVE
TC 3 PRESSURE _____	TC 4 PRESSURE _____	AIR INLET X
TIGHT X LEAKED _____	TIGHT ___ LEAKED ___	OPEN 1.6 PSI
RP PRESSURE DROP _____		DID NOT OPEN _____

REPAIRS:

CHECK VALVE 1	CHECK VALVE 2	RELIEF VALVE
CLEANED _____	CLEANED _____	CLEANED _____
REPLACED:	REPLACED:	REPLACED:
DISC _____	DISC _____	DISC _____
SPRING _____	SPRING _____	SPRING _____
GUIDE _____	GUIDE _____	GUIDE _____
HINGE PIN _____	HINGE PIN _____	HINGE PIN _____
SEAT _____	SEAT _____	SEAT _____
MODULE _____	MODULE _____	MODULE _____
OTHER _____	OTHER _____	OTHER _____
(DESCRIBE)	(DESCRIBE)	(DESCRIBE)

TEST AFTER REPAIRS:

CHECK VALVE 1	CHECK VALVE 2	RELIEF VALVE
CLOSED TIGHT ✓	CLOSED TIGHT _____	OPENED _____ PSI

Raymond Stowell
INITIAL TEST (SIGNATURE)

1336 11/8/90
TESTOR NUMBER

FINAL TEST AFTER REPAIRS (SIGNATURE)

DATE

COPY TO:
COUNTY OF ORANGE HEALTH DEPT.
P.O. BOX 355
SANTA ANA, CA 92702

COPY TO:
CITY OF FULLERTON
303 W. COMMONWEALTH AVE.
FULLERTON, CA 92632
ATTN: WATER ENGINEERING

ENGINEERING AND COMMUNITY DEVELOPMENT DEPARTMENT
303 WEST COMMONWEALTH AVENUE · FULLERTON, CALIFORNIA 92632

BACKFLOW PREVENTION DEVICE TEST AND MAINTENANCE REPORT

OWNER: AMERICAN ELECTRONICS INC.
ADDRESS: 1600 E. VALENCIA DR. FULLERTON, CA. 92631

LOCATION OF DEVICE: N. W. CORNER PARKING LOT IN PLANTER

MANUFACTURER: FEBCO TYPE: PVB SIZE: 1¼" SERIAL NO.: 62477

TESTOR NO. OC110C DATE 11-12-9- LINE PRESSURE 60±

INITIAL TEST:

CHECK VALVE 1	CHECK VALVE 2	~~RELIEF VALVE~~
TC 3 PRESSURE _____	TC 4 PRESSURE _____	AIR INLET
TIGHT X LEAKED 1.4	TIGHT ____ LEAKED ____	OPEN 1.3 PSI
RP PRESSURE DROP _____		DID NOT OPEN _____

REPAIRS:

	CHECK VALVE 1	CHECK VALVE 2	RELIEF VALVE
CLEANED	_____	_____	_____
REPLACED:			
DISC	_____	_____	_____
SPRING	_____	_____	_____
GUIDE	_____	_____	_____
HINGE PIN	_____	_____	_____
SEAT	_____	_____	_____
MODULE	_____	_____	_____
OTHER (DESCRIBE)	_____	_____	_____

TEST AFTER REPAIRS:

CHECK VALVE 1	CHECK VALVE 2	RELIEF VALVE
CLOSED TIGHT _____	CLOSED TIGHT _____	OPENED _____ PSI

Tom Roberts — INITIAL TEST (SIGNATURE)

OC110C — TESTOR NUMBER

_____ — FINAL TEST AFTER REPAIRS (SIGNATURE)

_____ — DATE

COPY TO:
COUNTY OF ORANGE HEALTH DEPT.
P.O. BOX 355
SANTA ANA, CA 92702

COPY TO:
CITY OF FULLERTON
303 W. COMMONWEALTH AVE.
FULLERTON, CA 92632
ATTN: WATER ENGINEERING

BACKFLOW PREVENTION DEVICE TEST AND MAINTENANCE REPORT

WATER PURVEYOR: CITY OF FULLERTON

OWNER: AMERICAN ELECTRONICS, INC.

ADDRESS: 1600 E. VALENCIA DR. FULLERTON, CA. 92631

LOCATION OF DEVICE: NW CORMER PARKING LOT IN PLANTER

MFG. FEBCO TYPE: PVB SIZE: 1-1/4 SER: #62477
NEW INSTALLATION
TESTER # 1203 DATE: 9-12-90 LINE PRESSURE: 65.2

INITIAL TEST	CHECK VALVE #1 TIGHT: X LEAKED RP PRESSURE DROP:	CHECK VALVE #2 TIGHT: LEAKED:	RELIEF VALVE AIR INLET OPEN: 2.3 PSI DID NOT OPEN
REPAIRS	CLEANED: REPLACED DISC SPRING GUIDE HNG. PIN SEAT MODULE OTHER	CLEANED: REPLACED DISC SPRING GUIDE HNG. PIN SEAT MODULE OTHER	CLEANED: REPLACED DISC DIAPHRAGM FLOAT SPRING OTHER
TEST AFTER REPAIR	CLOSED TIGHT	CLOSED TIGHT:	OPEN: PSI

Robby H. Dupont

INITIAL TEST (SIGNATURE)

FINAL TEST AFTER REPAIRS (SIGNATURE)

1203
TESTER NO.

9-12-90
DATE:

COPIES SENT TO:
ORANGE CO. HEALTH
CITY OF FULLERTON

R & D IRRIGATION
P.O. BOX 1143
BREA, CA. 92622
(714) 996-9161

OUT SIDE SPRINKER

R & D IRRIGATION
P.O. Box 1143
BREA, CA. 92622
(714) 996-9161

FED. ID #33-0065690

To: AMERICAN ELECTRONICS, INC.
1600 E VALENCIA DR.
FULLERTON, CA. 92631

Invoice #: 6836
Account #: 1436
Date: 9-17-90
PO #: DON WALL
Terms: NET 10

Job Site: SAME AS ABOVE

Service: BACKFLOW TESTING.

Qty.	Description	Unit Price	Parts Ext.	Labor Ext.
	WORK DONE 9-12-90			
1	LABOR TO TEST BACKFLOW	45.00		45.00
	Sub Total		0.00	

Parts	0.00
Tax	0.00
Labor	45.00
TOTAL	45.00

PLEASE PAY FROM INVOICE.

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634

ATTN: DON WAHL

DATE: 90/11/06
PERMIT NO: 2-1-140
LAB NO: 23947
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/10/17 Time: 1030-1030 Location: SB INSIDE

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM	.00	.00	0.04		1500	
CHROMIUM	.06	.00	0.08		150	
COPPER	.00	.00	0.13		150	
NICKEL	.26	.00	0.42		75	
LEAD	.00	.00	0.03		120	
ZINC	.00	.00	0.42		75	
SILVER	.00	.00	0.21		150	
TSS	<10					
BOD						

	Value	Time, Date	Limitations	Charge
pH	7.0		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge .00124 MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MH
11-8-90

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WAHL

DATE: 90/10/23
PERMIT NO: 2-1-140
LAB NO: 23905
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/10/17 Time: 1015 Location: SB INSIDE

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM						
CHROMIUM						
COPPER						
NICKEL						
LEAD						
ZINC						
SILVER						
TSS						
BOD						
C.N(A)	<1.0					

	Value	Time, Date	Limitations	Charge
pH	7.0		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge _____ MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM
10-26-90

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WAHL

DATE: 90/07/30
PERMIT NO: 2-1-140
LAB NO: 23648
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/07/23 Time: 1115 Location: SAMPLE BOX

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM						
CHROMIUM						
COPPER						
NICKEL						
LEAD						
ZINC						
SILVER						
TSS						
BOD						
(P/L'(A)	<1.0					

	Value	Time, Date	Limitations	Charge
pH	7.0		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge _____ MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM
7-31-90

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WAHL

DATE: 90/07/30
PERMIT NO: 2-1-140
LAB NO: 22403
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/07/23 Time: 1110-1110 Location: CLARIFIER IN BLDG

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM	.00	.00	0.04		1500	
CHROMIUM	.33	.00	0.08		150	
COPPER	.00	.00	0.13		150	
NICKEL	.00	.00	0.42		75	
LEAD	.00	.00	0.03		120	
ZINC	.15	.00	0.42		75	
SILVER			0.21		150	
TSS	<10					
BOD						

	Value	Time, Date	Limitations	Charge
pH	7.0		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge .00129 MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM
7-31-90

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634

ATTN: DON WAHL

DATE: 90/04/23
PERMIT NO: 2-1-140
LAB NO: 20907
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/04/04 Time: 1015-1015 Location: SB

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM	.00	.00	0.04		1500	
CHROMIUM	.31	.01	0.08		150	
COPPER	.46	.01	0.13		150	
NICKEL	1.11	.02	0.42		75	
LEAD	.12	.00	0.03		120	
ZINC	.70	.01	0.42		75	
SILVER	.00	.00	0.21		150	
TSS	<10					
BOD						

	Value	Time, Date	Limitations	Charge
pH	6.5		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge .00250 MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM
5-3-90

**

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WOHL

DATE: 90/04/12
PERMIT NO: 2-1-140
LAB NO: 20905
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/04/04 Time: 1005 Location: SAMPLE BOX NEAR PROCE

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM						
CHROMIUM						
COPPER						
NICKEL						
LEAD						
ZINC						
SILVER						
TSS						
BOD						
CN(+)	< 1.0					

	Value	Time, Date	Limitations	Charge
pH			6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge _____ MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM
4-13-90

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WAHL

DATE: 90/02/26
PERMIT NO: 2-1-140
LAB NO: 17711
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/02/07 Time: 1415-1415 Location: SAMPLE BOX

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM	.00	.00	0.04		1500	
CHROMIUM	.12	.00	0.08		150	
COPPER	.04	.00	0.13		150	
NICKEL	.00	.00	0.42		75	
LEAD	.00	.00	0.03		120	
ZINC	.00	.00	0.42		75	
SILVER			0.21		150	
TSS	<10					
BOD						

	Value	Time, Date	Limitations	Charge
pH	6.5		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge .00253 MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WAHL

DATE: 90/01/24
PERMIT NO: 2-1-140
LAB NO: 18516
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 89/12/14 Time: 0945 Location: CLARIFIER

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM						
CHROMIUM						
COPPER						
NICKEL						
LEAD						
ZINC						
SILVER						
TSS						
BOD						
TTO	1.014					

	Value	Time, Date	Limitations	Charge
pH			6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge _____ MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM

COUNTY SANITATION DISTRICTS
of ORANGE COUNTY, CALIFORNIA

10844 ELLIS AVENUE
P.O. BOX 8127
FOUNTAIN VALLEY, CALIFORNIA 92728-8127
(714) 962-2411

WASTEWATER ANALYSIS REPORT

INDUSTRY: AMERICAN ELECTRONICS
1600 EAST VALENCIA DR.
FULLERTON CA 92634
ATTN: DON WAHL

DATE: 90/11/19
PERMIT NO: 2-1-140
LAB NO: 23904
INSP: MB

Your wastewater discharge was sampled and the results are as follows:
Sample Date(s): 90/10/17 Time: 1015 Location: SB INSIDE

Constituents	Concentration mg/L	Discharge lbs/day	Permit Limits lbs/day	Pounds Over Limitation	Rate Per Pound	Charge
CADMIUM						
CHROMIUM						
COPPER						
NICKEL						
LEAD						
ZINC						
SILVER						
TSS						
BOD						
TTO-601-602 0.164						

	Value	Time, Date	Limitations	Charge
pH	7.0		6.0 - 12.0	

TOTAL CHARGE

Mass Emission Rate Flow Base .005 MGD Actual Discharge _____ MGD

Please address any questions concerning this report to Mr. James Benzie, or me in the Industrial Waste Division at extension 365.

Richard W. von Langen

Richard W. von Langen, P.E.
Source Control Manager

RVL:on
IBM:WP:WWANALYS.RPT

MM
11-21-90

(9)

AB 1803 SOURCE INVESTIGATIONS

INSPECTION REPORT FORM

BUSINESS: American Electronics Inc DATE: 4/28/87

ADDRESS: 1600 E Valencia Dr TIME: _____

Fullerton PHONE: _____

CONTACT PERSON: James E. Crossen III INSPECTOR: TDP

OBSERVATIONS:

OVERALL SITE: Clean well organized

STORAGE AREAS: on Slab - Not bermed

WORK AREAS: clarifiers in building - only 2 of 4-5 are now in use - ? fresh water from cooling system only at present

DISPOSAL: in barrels on slabs - drain to Sump now contained in inset Tank but previously just sat in Sump until pumped (Sump ~ 500gal)

ORGANIC CHEMICALS (INCLUDE QUANTITY, CONTAINERS, ETC.):

Discontinued use of TCE in 1977 → approx

By 1982 PCE (first) Hauled To Recycler

ARE RECORDS KEPT ON SITE? Back To 1980 → 77 some

HAS THERE EVER BEEN A SPILL? _____

SETTLEMENT AGREEMENT AND RELEASE BETWEEN ORANGE COUNTY WATER DISTRICT AND AMERICAN ELECTRONICS, INC.

This Settlement Agreement and Release (the "Agreement") is entered into among the following parties:

1. American Electronics, Inc. ("AEI"), a California corporation; and

2. Orange County Water District ("OCWD").

AEI and OCWD are sometimes individually referred to herein as "Settling Party" or collectively referred to herein as the "Settling Parties."

RECITALS

This Agreement is entered into by and between the Settling Parties based on the following, facts, circumstances and understandings, which are not only recitals, but are also an integral part of this Agreement:

WHEREAS, on December 17, 2004, OCWD filed a Complaint in the Orange County Superior Court, and subsequently a First Amended Complaint ("Complaint") on April 11, 2005, against numerous defendants, including AEI, alleging that the defendants' activities contributed to the contamination of the groundwater basin and aquifers from which OCWD obtains its water supply.

WHEREAS, AEI denies any and all liability or responsibility for the claims alleged by OCWD in its Complaint.

WHEREAS, a substantial dispute exists among the Settling Parties regarding their respective liabilities and obligations arising from OCWD's claims.

WHEREAS, the Settling Parties wish to avoid the burden, costs, and uncertainties of litigation.

WHEREAS, by and through this Agreement, the Settling Parties seek to fully and finally settle any and all disputes arising from or related to the Action, the Matters Addressed in this Agreement, the allegations of OCWD contained in its Complaint, and any other disputes related to the contamination, investigation, and remediation of the groundwater basin and aquifers from which OCWD obtains it water supply.

NOW THEREFORE, in consideration of the foregoing and of the mutual covenants and agreements contained herein, and intending to be legally bound, the Settling Parties hereby agree as follows:

1. DEFINITIONS. Whenever the following capitalized terms are used in this Agreement, the meanings defined in this Section 1 apply.

a. "Action" means the civil action pending in the Superior Court of California for the County of Orange entitled *Orange County Water District v. Northrop Corporation*, et al., Case No. 04CC00715, including all direct claims and any cross-claims, counter-claims, and third-party claims.

b. "AEI" means American Electronics, Inc.

c. "Agreement" means this Settlement Agreement and Release.

d. "Claims" means any and all claims, counterclaims, cross-claims, actions, demands, causes of action, rights, liabilities, and obligations of every kind and nature, whether known or unknown, past, present or future, suspected or unsuspected, liquidated or unliquidated, relating to the Action, the Property, or the Site, including, without limitation, claims for:

i. any and all past, present, or future fees, attorneys' fees, costs, expenses, and liabilities incurred or which may be incurred for testing, investigating, remediating, removing, neutralizing, detoxifying, monitoring, containing, cleaning up, treating or in any way responding to hazardous substances in soil, groundwater, surface water, equipment or any other items that now exist, in the past existed, or that in the future exist at, on, under, or emanating from the Site or the Property, including without limitation, responding to and defending against any past, present or future regulatory agency request, directive or order relating thereto;

ii. any and all past, present, or future damages of any kind, including compensatory and punitive, or other legal, statutory, or equitable relief, incurred by OCWD, based in whole or in part upon, arising out of, resulting from or in any way connected with hazardous substances released at the Site or the Property;

iii. any and all past, present or future fees, attorneys' fees, costs, expenses and liabilities arising from, sought in, or relating to the Action or the settlement of the Action, including the Good Faith Motion.

e. "Complaint" means OCWD's First Amended Complaint for Damages and Other Relief (VOC Contamination): (1) Orange County Water District Act; (2) California Superfund Act; (3) Negligence; (4) Nuisance; (5) Trespass; and (6) Declaratory Relief, filed in the Superior Court of California for the County of Orange on April 11, 2005.

f. "Court" means the Superior Court of California for the County of Orange.

g. "Effective Date" means:

i. the date upon which the Court in this Action issues an order granting the Good Faith Motion contemplated in Section 3.a. of this Agreement; or

ii. in the event the Court in this Action denies the Good Faith Motion, the date upon which the Court dismisses AEI from the Action with prejudice as provided for in Section 3.b. of this Agreement.

h. "Good Faith Motion" means the motion seeking a determination that the Settling Parties entered into this Agreement in good faith pursuant to California Code of Civil Procedure sections 877 and 877.6 as further described in Section 3 (Good Faith Motion and Dismissal of the Action With Prejudice) of this Agreement.

i. "Matters Addressed" in this Agreement shall include, but not be limited to, resolution of any and all Claims as defined in Section 1.d. of this Agreement.

j. "OCWD" means the Orange County Water District.

k. "Property" means real property that AEI formerly owned and on which it conducted its operations located at 1600 East Valencia Drive in Fullerton, California.

l. "Settlement Proceeds" means the four hundred thousand dollars ($400,000) to be paid by AEI to OCWD in accordance with the procedures outlined in Section 2 of this Agreement.

m. "Settling Parties" means OCWD and AEI.

n. "Settling Party" means one of the Setting Parties.

o. "Site" means the Forebay Volatile Organic Compound Groundwater Cleanup Project located in the cities of Placentia, Fullerton and Anaheim as partially depicted on the map attached hereto as Exhibit "A," as well as any ground water contaminated by the Site, which moves from the area depicted in Exhibit "A" to any other location.

2. SETTLEMENT PAYMENT. AEI shall pay four hundred thousand dollars ($400,000) to OCWD as follows:

a. Within ten (10) business days of the date upon which the Court in this Action issues an order granting the Good Faith Motion contemplated in Section 3.a. of this Agreement; or

b. In the event the Court denies the Good Faith Motion and AEI notifies OCWD in accordance with Section 19 of this Agreement that AEI elects to nonetheless proceed with this settlement as provided for under Section 3.b. of this Agreement, payment shall be made within thirty (30) calendar days from the date the Court dismisses AEI from the Action with prejudice as contemplated in Section 3.b. of this Agreement.

c. The Settlement Proceeds shall be paid by wire transfer payable to "Miller, Axline & Sawyer Client Trust Account."

d. In the event that a writ, an appeal, or any other legal challenge results in a reversal of the Court's order granting the Good Faith Motion, or any other order invalidates this Agreement or the Court's order granting the Good Faith Motion, OCWD will return in full the Settlement Proceeds to AEI within ten (10) business days of receiving notification by AEI, pursuant to Paragraph 19 of this Agreement, requesting return of the Settlement Proceeds. Should AEI exercise this option, all obligations to perform under the terms of this Agreement will be extinguished and the Parties will execute any documents needed to restore the Parties to their pre-settlement status in the Action, including a stipulated order setting aside any dismissal of AEI.

3. GOOD FAITH MOTION AND DISMISSAL OF THE ACTION WITH PREJUDICE.

a. Promptly upon execution of this Agreement, the Settling Parties shall prepare, file, and serve a motion seeking a determination from the Court that the settlement embodied herein is "in good faith" within the meaning of California Code of Civil Procedure sections 877 and 877.6 (the "Good Faith Motion").

b. In the event the Court denies the Good Faith Motion, AEI has thirty (30) calendar days to notify OCWD in accordance with Section 19 of this Agreement that AEI elects to nonetheless proceed with this settlement. Within five (5) calendar days after AEI notifies OCWD of AEI's election to proceed with this settlement, OCWD shall dismiss AEI from the Action with prejudice pursuant to California Code of Civil Procedure 581. The Settling Parties agree to bear their own costs, expenses, and attorneys' fees with respect to the procedures outlined in this Section 3.b.

4. MUTUAL RELEASE.

a. Pursuant to, and as consideration for the full performance of all of the terms and conditions of this Agreement, AEI and all of its present and former subsidiaries, affiliated and parent corporations and entities, predecessors, successors, and all of their collective and respective past, present, and future agents, successors, officers, directors, shareholders, attorneys, employees, insurers, and assigns, hereby release and forever discharge OCWD for itself and its predecessors, successors, assigns, affiliates, and insurers, and for all of their respective agents, employees, and attorneys, of and from any and all Claims, except for claims relating to any breach of this Agreement. It is understood and agreed by the Settling Parties that the releases granted in this Section 4.a. are not intended and do not release claims which do or may exist against non-settling persons, including, but not limited to, other parties in the Action.

b. Pursuant to, and as consideration for the full performance of all of the terms and conditions of this Agreement, OCWD for itself and its predecessors,

successors, assigns, affiliates, and insurers, and for all of their respective agents, employees, and attorneys, hereby releases and forever discharges AEI and all of its present and former subsidiaries, affiliated and parent corporations and entities, predecessors, successors, and all of their collective and respective past, present, and future agents, successors, officers, directors, shareholders, attorneys, employees, insurers, and assigns, as well as any past, present or future owners, lessees, sub-lessees, tenants, occupants, or operators of the Property, whether known or unknown, of and from any and all Claims, except for claims relating to any breach of this Agreement. Except as specifically provided by this Section 4.b., it is understood and agreed by the Settling Parties that the releases granted in this Section 4.b. are not intended and do not release claims which do or may exist against non-settling persons, including, but not limited to, other parties in the Action.

5. UNCERTAINTY OF CIRCUMSTANCES.

Each Settling Party acknowledges that it has made such investigation of the facts pertaining to this Agreement and all matters contained herein as it deems necessary, desirable or appropriate. Each Settling Party acknowledges that there is a possibility that, subsequent to the execution of this Agreement, it may incur, suffer, or sustain any injuries, losses, damages, costs, attorneys' fees, expenses, or any of these, which are in some way caused by or connected with the Matters Released and referred to above, which are unknown and unanticipated at the time this Agreement is signed, or which are not presently capable of being ascertained, and further that there is a risk that such damages as are known may become more serious than the Settling Parties now expect or anticipate. Nevertheless, each Settling Party acknowledges that this Agreement has been negotiated and agreed upon in light of that realization and hereby expressly waives any rights it may have in such unsuspected claims.

6. WAIVER OF RIGHTS (CALIFORNIA CIVIL CODE § 1542).

In entering into this Agreement, each Settling Party has had the benefit of legal counsel and has been advised or, understands, and knowingly and specifically waives its rights under California Civil Code section 1542, which provides as follows:

> CERTAIN CLAIMS NOT AFFECTED BY GENERAL RELEASE–A general release does not extend to claims which the creditor does not know or suspect to exist in his favor at the time of executing the release, which is known by him, must have materially affected his settlement with debtor.

Each Settling Party hereto further waives all rights under any similar law in any state or territory of the United States.

7. CONTROLLING LAW. It is understood and agreed that this Agreement is entered into in the State of California. It is agreed that this Agreement shall be governed by and construed in accordance with the laws of the United States and of the State of California as if

applied to transactions entered into and to be performed wholly within California between California residents. No Settling Party shall argue or assert that any law other than California law applies to the governance or construction of this Agreement.

8. NO ASSIGNMENT. Each Settling Party represents, warrants and agrees that it has not assigned, transferred, conveyed, encumbered or in any manner otherwise disposed of all or any portion of the claims, actions, causes of action, suits, potential causes of action, demands, disputes, rights, obligations, or interests of any nature or kind whatsoever covered by this Agreement, whether before or after they occurred, regardless of whether they have occurred as of the date of this Agreement.

9. ENTIRE AGREEMENT. This Agreement constitutes the entire Agreement between the Settling Parties relating to this subject matter and its terms are contractual, not mere recitals. Except as specifically provided in this Agreement, this Agreement supersedes all prior or simultaneous representations, discussions, negotiations, and agreements, whether written or oral.

10. FULL SETTLEMENT. This Agreement is a full and complete settlement of claims that were vigorously contested, denied and disputed as to validity and amount, and is executed in order to secure the Settling Parties' peace and to avoid further expense.

11. BINDING EFFECT. Subject to the conditions found in this Agreement, this Agreement shall be binding upon and inure to the benefit of each Settling Party as well as its respective officers and directors, their respective heirs, executors, administrators, trustors, trustees, beneficiaries, predecessors, successors, affiliated and related entities, officers, directors, principals, agents, employees, assigns, representatives, and all persons, firms, associations, and/or corporations connected with them, including without limitation, its sureties and/or attorneys, except as otherwise provided by this Agreement.

12. MODIFICATION OF THIS AGREEMENT. This Agreement may be amended or supplemented only by a writing that is signed by a duly authorized representative(s) of each Settling Party.

13. INDEPENDENT LEGAL ADVICE AND INVESTIGATION. The Settling Parties agree that this Agreement has been negotiated at arms length, with the assistance and advice of competent, independent legal counsel. In entering into this Agreement, the Settling Parties acknowledge that they have received independent legal advice from their own counsel and have relied on their own investigation and upon the advice of their own attorney(s) with respect to the advisability of making the settlement provided in this Agreement.

14. NO ORAL WAIVER. No term or provision of this Agreement will be considered waived by either Settling Party, and no breach excused by either Settling Party, unless such waiver or consent is in writing signed on behalf of the Settling Party against whom the waiver is asserted. No consent by either Settling Party to, or waiver of, a breach by either Settling Party, whether express or implied, will constitute a consent to, waiver of, or excuse of any other,

different, or subsequent breach by either Settling Party.

15. NO ADMISSION OF LIABILITY. The payment by the AEI of the Settlement Proceeds described in Section 2 of this Agreement is for the compromise of disputed claims, and neither such payment nor its receipt shall be construed as an admission by AEI that it has any liability or obligation to OCWD or to any other person arising out of the Action or in connection with the release or threatened release of any hazardous substances at the Property or the Site.

16. COSTS AND ATTORNEYS' FEES. The Settling Parties acknowledge and agree that they are to bear their own costs, expenses, expert and consultant fees, and attorneys' fees arising out of the Matters Addressed herein; the Action; the negotiation, drafting, and execution of this Agreement; and all matters arising out of or connected therewith.

17. JOINT DRAFTING EFFORT. The Settling Parties acknowledge and agree that the drafting of this Agreement has been a joint effort by the Settling Parties and that this Agreement shall not be deemed prepared or drafted by any one of the Settling Parties. The terms of this Agreement shall be interpreted fairly and in accordance with their intent and not for or against any one of the Settling Parties. The Settling Parties further acknowledge and agree that each Settling Party possesses equal bargaining power with respect to this Agreement.

18. ADMISSIBILITY OF THIS AGREEMENT. This Agreement has been entered into in reliance upon the provisions of California Evidence Code Sections 1119 and 1152 and Rule 408 of the Federal Rules of Evidence and similar state law provisions in other states, which preclude the introduction of evidence regarding settlement negotiations or agreements.

19. NOTICES. All notices or other communications which any Settling Party desires or is required to give shall be given in writing and shall be deemed to have been given if hand-delivered, sent by telecopier/facsimile, receipt confirmed, or mailed by depositing in the United States mail, prepaid to the Settling Party at the address noted below or such other address as a Settling Party may designate in writing from time to time:

James S. Heiser
American Electronics, Inc.
23301 Wilmington Avenue
Carson, CA 90745-6209

With a copy to:

Clifton J. McFarland, Esq.
Downey Brand LLP
555 Capitol Mall, 10th Floor
Sacramento, CA 95814

Craig Miller
Orange County Water District
10500 Ellis Avenue
Fountain Valley, CA 92708
Telephone: (714) 378-3200
Facsimile: (714) 378-3373

With a copy to
Duane C. Miller, Esq.
Miller, Axline & Sawyer
1050 Fulton Ave., Suite 100
Sacramento, CA 95825

20. MUTUAL COOPERATION. Each Settling Party agrees that it shall cooperate with the other Settling Party, in good faith, in defending any claim(s) asserted by a third-party, not a Settling Party, against a Settling Party related to the Matters Addressed in this Agreement.

21. EFFECT OF PARTIAL INVALIDITY/SEVERABILITY. In the event that any provision of this Agreement is held to be invalid or unenforceable, such finding shall not invalidate any other term or provision of this Agreement and the remaining provisions of this Agreement shall continue in full force and effect.

22. SIGNATURE IN COUNTERPARTS. The Settling Parties agree that separate copies of this Agreement may be signed by each Settling Party and this Agreement will have the same force and effect as if the original had been signed by all the Settling Parties.

23. REPRESENTATIONS AND WARRANTIES. The Settling Parties represent and warrant:

a. That each is fully authorized to enter into this Agreement;

b. That the making and performance of this Agreement will not violate any provision of law or of any Settling Party's articles of incorporation, charter or by-laws; and

c. That each Settling Party has read this Agreement in its entirety and knows the contents of this Agreement, that the terms of this Agreement are contractual and not merely recitals, and that it has signed this Agreement, having obtained the advice of legal counsel.

IN WITNESS WHEREOF, each of the Settling Parties hereto executed and has caused this Agreement to be executed by its duly authorized representatives.

Approved as to form: DATE: 7/3/07 DOWNEY BRAND LLP By: _____ CLIFTON J. MCFARLAND Attorneys for AMERICAN ELECTRONICS, INC.	DATE: _____ NAME: _____ _____ AMERICAN ELECTRONICS, INC.

20. MUTUAL COOPERATION. Each Settling Party agrees that it shall cooperate with the other Settling Party, in good faith, in defending any claim(s) asserted by a third-party, not a Settling Party, against a Settling Party related to the Matters Addressed in this Agreement.

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IN WITNESS WHEREOF, each of the Settling Parties hereto executed and has caused this Agreement to be executed by its duly authorized representatives.

Approved as to form: DATE: _____ DOWNEY BRAND LLP By: _____ CLIFTON J. MCFARLAND Attorneys for AMERICAN ELECTRONICS, INC.	DATE: July 3, 2007 NAME: James S. Heiser By _____, Secretary AMERICAN ELECTRONICS, INC.

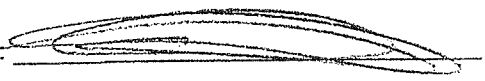
Approved as to form: DATE: 7/3/07 MILLER, AXLINE & SAWYER, PC By:  DUANE C. MILLER Attorneys for ORANGE COUNTY WATER DISTRICT	DATE: 7-18-07 NAME: Philip L. Anthony, President ORANGE COUNTY WATER DISTRICT Michael P. Wehner, Acting General Manager

Exhibit "A"

SETTLEMENT AGREEMENT AND RELEASE
BETWEEN ORANGE COUNTY WATER DISTRICT AND AMERICAN ELECTRONICS, INC.

Z:\VOC_Area_072005.mxd

FILED
SUPERIOR COURT OF CALIFORNIA
COUNTY OF ORANGE
CIVIL COMPLEX LITIGATION CENTER
AUG 08 2007
ALAN SLATER, Clerk of the Court
BY P. RIEF

ELECTRONICALLY
RECEIVED
SUPERIOR COURT OF CALIFORNIA
COUNTY OF ORANGE
CIVIL COMPLEX CENTER
Jul 05 2007
ALAN SLATER, Clerk of the Court

DUANE C. MILLER (Bar No. 57812)
TAMARIN E. AUSTIN (Bar No. 207903)
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ORANGE COUNTY WATER DISTRICT

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DOWNEY BRAND LLP
555 Capitol Mall, Tenth Floor
Sacramento, CA 95814-4686
Telephone: (916) 444-1000
Facsimile: (916) 444-2100

Attorneys for Defendant
AMERICAN ELECTRONICS, INC.

SUPERIOR COURT OF CALIFORNIA

COUNTY OF ORANGE

ORANGE COUNTY WATER DISTRICT,

Plaintiff,

v.

NORTHROP CORPORATION, et al.,

Defendants.

CASE NO. 04CC00715

~~[PROPOSED]~~ ORDER GRANTING PLAINTIFF ORANGE COUNTY WATER DISTRICT'S AND DEFENDANT AMERICAN ELECTRONICS, INC.'S JOINT MOTION FOR GOOD FAITH SETTLEMENT DETERMINATION

Date: August 3, 2007
Time: 10.00 a.m.
Dept: CX 104
Judge: Hon. Thierry Patrick Colaw

Trial Date: March 17, 2008
Action Filed: December 17, 2004

On August 3, 2007, the Honorable Thierry Patrick Colaw heard Plaintiff ORANGE COUNTY WATER DISTRICT's ("OCWD") and Defendant AMERICAN ELECTRONICS, INC.'s ("AEI") Joint Motion for Good Faith Settlement Determination. Following the Court's review of the written submissions of the parties, the oral argument by counsel at the hearing, and

the Court's files and records in this case, and good cause appearing therefore, the Court hereby enters the following Order:

1. That, after conducting an analysis of the factors relevant in determining whether a settlement was entered into in good faith, as enunciated in *Tech-Bilt, Inc. v. Woodward Clyde & Assocs.* (1985) 38 Cal. 3d 488, this Court determines that the total settlement payment from AEI to OCWD pursuant to the Settlement Agreement and Release entered into by and between AEI and OCWD falls within the reasonable range of AEI's proportional share of liability for OCWD's alleged damages and that OCWD and AEI entered into the Settlement Agreement and Release in good faith within the meaning of Code of Civil Procedure sections 877 and 877.6. The Court further finds an absence of any evidence of collusion, fraud, or tortious conduct aimed at injuring the interests of the non-settling defendants.

2. That, pursuant to Code of Civil Procedure sections 877(b) and 877.6(c), all claims against AEI for equitable comparative contribution or partial or comparative indemnity arising out of or related to the facts alleged by OCWD in its First Amended Complaint for Damages and Other Relief, as further provided for in the aforementioned Settlement Agreement and Release, or otherwise related to or arising in this action entitled *Orange County Water District v. Northrop Corporation*, et al., are forever barred.

3. That AEI is dismissed from the action with prejudice.

IT IS SO ORDERED.

DATED: 8 August, 2007 By: _____
HON. THIERRY PATRICK COLAW
Judge of the Superior Court