01-1047

PP→N

RI

Former Eastshore Partners
c/o: Thomas Gram
5800 Shellmound Street, Suite #210
Emeryville, California 94608
(510) 652-5852

Susan L. Hugo
Senior Hazardous Materials Specialist
Department of Environmental Health
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

RE: Former P.I.E. Freight Terminal Site, 5500 Eastshore Highway, Emeryville, California (Powell Street Plaza)

Dear Ms. Hugo:

This letter constitutes Eastshore Partners' ("Eastshore") response to your June 4, 1993 letter to Maria Burgi of Aetna Real Estate Associates, L.P. ("Aetna") requesting information concerning the property located at 5500 Eastshore Highway, in Emeryville, California ("Site").

A brief discussion of the history of the Site is necessary to provide a background for this response. Pacific Intermountain Express ("P.I.E.") owned and/or operated the Site from approximately 1944 to 1986, during which time it installed and used petroleum underground storage tanks. P.I.E. agreed to remove the leaking tanks and clean up the hydrocarbon contamination at the Site as a condition of the sale of the Site to Eastshore. Accordingly, P.I.E. hired Blymyer Engineering Company in 1986 to oversee the remediation of the soil and groundwater at the Site. It is Eastshore's understanding that P.I.E.'s consultants and contractors removed the tanks and conducted the soil and groundwater remediation under the supervision of Alameda County.

In 1990, Eastshore conveyed the Site to Aetna. In that transaction Eastshore agreed to indemnify Aetna with respect to certain matters. As explained previously by our counsel, Eastshore responds to your request to Aetna in connection with its indemnity obligations in that agreement.

Because Eastshore had no responsibility for, and minimal involvement in, P.I.E.'s clean up activities at the Site, Eastshore does not have all of the documentation for P.I.E.'s activities. Eastshore has been able to develop a picture of P.I.E.'s activities at the Site through some consultants' reports which were made available to us, but does not have originals or copies of project documents such as manifests or receipts.

Against this background, we turn to the specific information requests in the June 4 letter.

Request No. 1:

In 1987, P.I.E. hired CytoCulture Environmental Technology ("CytoCulture") to remediate the groundwater at the Site through an "augmented bioremediation" system. CytoCulture installed a ground and free-phase product extraction system and the bioremediation treatment system in late 1988 and began to pump and treat groundwater and product in March 1989. CytoCulture ceased operations in June 1990 because P.I.E. had failed to make payments. (Exhibit A). P.I.E. declared bankruptcy in October 1990.

To Eastshore's knowledge, CytoCulture did not implement the proposed plan to reinfiltrate groundwater treated with cultures of bacteria and nutrients to treat contamination soils.

Request No. 2

Eastshore's consultant, PES Environmental, Inc. ("PES"), has prepared a work plan that outlines recommendations to: (1) address the immediate concerns discussed with you and Rich Hiett, including free product removal and groundwater monitoring; (2) complete the site characterization process, including definition of the extent of groundwater contamination; (3) evaluate remedial objectives and cleanup alternatives; and, (4) implement a remedial plan. The work plan is attached as Exhibit B.

Request No. 3

During 15 months of treatment, CytoCulture claims it removed approximately 800 gallons of free phase product. (See, Exhibit A). No additional remedial work was conducted at the Site until March 1993, when after several months of negotiating a Site Access Agreement with Aetna, PES conducted a pilot program in which it assessed the distribution and volume of the product in monitoring wells and manually bailed product form the wells. During two sessions on April 21 and April 27, PES removed approximately 2.2 gallons of free product.

Request No. 4

PES will perform quarterly monitoring and has set forth a sampling program. (See Exhibit B).

Request No. 5

P.I.E.'s consultant, Groundwater Technology, Inc., conducted soil remediation at the Site in two phases: November 1986 to February 1987 and May to September 1987. (Exhibit C, pgs. 27-28). In both phases, Groundwater Technology used above ground enhanced natural degradation to reduce the hydrocarbon contamination to acceptable levels and transported the treated soil to West Contra Costa County Landfill in Richmond, California. (Id.). Eastshore does not have documents such as manifests or receipts that show that the soils were disposed of at the landfill and has relied on a report prepared by Blymyer, the engineering consultant on the project, for the information. (Exhibit C). The soil remediation and disposal was performed under the supervision, and with the approval, of Alameda County.

Request No. 6

P.I.E. hired R.S. Eagan and Company to removed the underground storage tanks in approximately July 1986. (Exhibit D). Eastshore does not have copies of the tank manifests and has no knowledge regarding their disposal.

Request No. 7

Eastshore fully intends to comply with permit requirements.

Request No. 8

Because CytoCulture designed, installed and operated the previous groundwater extraction system under its contract with P.I.E., Eastshore does not have the information you request. The information Eastshore does have concerning the system consists of the documents listed on pages 1-2 of your June 4 letter to Aetna.

Request No. 9

Eastshore and its consultants will prepare a remedial plan for the Site as described in the PES work plan attached as Exhibit B. A time schedule for the investigation and remediation is also included in the work plan.

Regarding the work plan and quarterly reports, the tank owner, P.I.E., is in bankruptcy in Florida and cannot provide a cover letter attesting to the accuracy of the report and stating its concurrence in the conclusions of the report. Although Eastshore is not a responsible party, Eastshore will provide the requested cover letter for each report and work plan that it prepares.

Eastshore and its consultants will comply with all of the additional items for the reports set forth on page 4 of your letter.

If you have any questions, please contact me at (510) 652-5852.

Sincerely,

Thomas J. Gram

cc:
Robert Creps, PES Environmental, Inc.
Richard Hiett, California Water Quality Control Board
Gil Jensen, alameda Co. Dist. Attorney's Office
Barry Sandals, Esq., Morrison & Foerster
Rafat A. Shahid, Asst. Agency Director, Enviromental Health
Edgar Howell, Chief Hazardous Materials Division, Alameda Co.
David Cooke, Beveridge & Diamond

Enclosures

TMG/lvm

Cyto Culture
ENVIRONMENTAL
BIOTECHNOLOGY
A Division of Cyto Culture International Inc

August 24, 1990

John Ster, Sylvia Lee
Office of Properties and Real Estate
P.I.E. NATIONWIDE, INC.
P.O. Box 2408
Jacksonville, FL 32203 FAX 904-798-2303

RE: Emeryville Former Truck Terminal Bioremediation Project

Dear Mr. Ster and Ms. Lee:

We are increasingly concerned about the reports of accumulating diesel fuel on the former Emeryville terminal property and adjacent land to the south. We were contacted by The Martin Group Properties last week and their geotechnical consulting group, Pacific Environmental Services, to explain why we were no longer treating the groundwater at the site which they continue to believe to be the source of petroleum hydrocarbon contamination on their property. Apparently, the Martin Group have received permits to build the new Marriott Hotel on the site immediately south of the former P.I.E. property and they are now poised to begin construction.

Understandably, the Martin Group expressed their concern that we were no longer capturing the migrating product along the boundary with their property; we immediately called Blymyer & Sons to report both calls. Pacific Environmental Services told us they had measured over a foot of diesel product at our MW-7 (along the freeway) and several inches of product in our MW-3 (along the south boundary) and their MW-1 (directly south of our trench along the south boundary). Their reports will be submitted to the Department of Health Services, the Regional Water Quality Control Board and the Alameda County Department of Public Health.

Taken together these findings and actions underscore the urgency to get our groundwater bioremediation system operational again. Our existing trenches have been intercepting plumes of diesel migrating south towards the new Marriott Hotel site and west towards the Bay. The regulatory agencies involved are aware that we are "temporarily" shut down for an annual overhaul, but we have not stressed the fact that we are not able to start up until our overdue invoices are paid.

[illegible] WASHINGTON AVENUE POINT RICHMOND CA 94801
[illegible]

As for addressing the reports of free product, our current system has removed over 800 gallons of product from the two existing 65 foot extraction trenches. The proposed expansion of this project, submitted in January, calls for additional trenching which would more than double the barrier for capturing product and contaminated groundwater migrating south or west, including the areas around MW-3 and MW-7 which continue to have significant free product. Along with this expansion, we had also proposed a site assessment of the current contamination and a modelling of our proposed in situ work, both of which are long overdue.

CytoCulture is therefore urging P.I.E. Nationwide to pay all past due invoices (December 199, March-May, 1990) so that we may begin continuous groundwater treatment again.

There will be a charge for starting up the system after 3 months of no treatment, and we will need to recycle the 400 gallons of straight product which were collected by the oil-water separators prior to our work stoppage at the end of May. CytoCulture will also have to purchase bacterial cultures from Sybron (we had avoided these additional charges by using surplus cultures from 1989 for treatment in Jan-May 1990).

Please respond by Friday, August 31 in writing indicating a new payment schedule that will allow us to get back on track and begin treating groundwater as soon as possible. If we have not received additional payments by the 31st, we will finally be forced to report these circumstances to the local, state and federal regulatory agencies. Once reported as an inoperative treatment system, the site will be subject to mandatory clean-up procedures. Since the information will then be in the public domain, the Martin Group and the Marriott Hotel developers will have full access to all documents pertaining to site clean-up.

We urge you to take immediate action to correct this potentially serious confrontation with regulatory agencies and adjacent property owners by making substantial payments on these overdue invoices. We would much prefer to address their concerns by resuming and expanding our bioremediation program.

Thank you for responding to these requests in a timely fashion.

Sincerely,

Randall J. von Wedel

Randall J. von Wedel, Ph.D.
President

PES Environmental, Inc.
Engineering & Environmental Services

August 2, 1993

241.0101.002

Mr. Tom Gram
Eastshore Partners
5800 Shellmound Street, Suite 210
Emeryville, California 94608

RECOMMENDED SCOPE OF WORK
INVESTIGATION AND REMEDIATION PROGRAM
POWELL STREET PLAZA (FORMER P.I.E. FREIGHT TERMINAL)
EMERYVILLE, CALIFORNIA

Dear Mr. Gram:

This letter describes a recommended scope of work for investigation and remediation of petroleum hydrocarbon contamination from former underground storage tanks at the Powell Street Plaza site in Emeryville, California. PES Environmental, Inc. (PES) has prepared these recommendations in response to an Alameda County Department of Environmental Health ACDEH) letter, dated June 4, 1993, to Aetna Real Estate Associates, L.P., (the current owner) requesting information on the site. PES understands that Eastshore Partners (Eastshore) acquired the site from Pacific Intermountain Express (P.I.E.), redeveloped the site, and subsequently sold the property to Aetna.

The recommendations contained herein are based on: (1) PES' experience at the subject site and the adjacent Shellmound III site which has been affected by the fuel releases on the Powell Street Plaza site; (2) our June 13, 1993 meeting with Susan Hugo of ACDEH and Rich Hiett of the San Francisco Bay Regional Water Quality Control Board (RWQCB) during which we discussed site conditions and remedial objectives; and (3) a telephone conversation with Ms. Hugo on July 29, 1993 during which PES described these recommendations and received her concurrence.

RECOMMENDED SCOPE OF WORK

As we have discussed, there is a considerable amount of site characterization data that has been collected since the underground fuel storage tanks were removed in 1986. This includes investigations and/or remediation work for P.I.E. conducted by Blymyer Engineering Company, Cytoculture, Alton Geosciences and Groundwater Technology. Additionally, PES has conducted an investigation and prepared a Preliminary Endangerment Assessment (dated September 27, 1991) for the Shellmound III site for Shellmound Ventures Partners III, the owner of that site. Earlier this year, PES conducted a Phase I free-phase hydrocarbon product removal program for groundwater monitoring wells on both sites (results attached). Notwithstanding the availability of considerable environmental data, there

is an absence of current information on the site. Therefore, it is recommended as an initial task, that a single round of groundwater monitoring be performed for all wells on the Powell Street Plaza and Shellmound III sites. This new data will then be used to evaluate the adequacy of the characterization and guide further investigation, as needed.

Other recommended activities that should be performed at this time include a tidal influence study, free-phase hydrocarbon product removal, product characterization, and initiation of a remedial feasibility evaluation to be performed concurrently with the characterization process. Each of these activities and a schedule are described below.

Task 1 - Groundwater Monitoring / First Monitoring Quarter

To obtain current information on the degree and extent of dissolved-phase hydrocarbon contamination, PES recommends collecting and analyzing groundwater samples from all groundwater monitoring wells (except those containing free-phase product at the time of sampling) on the subject site and Shellmound III site during the first quarter. There are 23 wells on the two sites (Wells MW-1, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-18, MG-1, MG-2, MG-3, MG-4, MG-7 and PZ-1). These are shown on the attached Plate 1.

The wells will be purged and samples will be collected and sent to a State-certified laboratory for analysis. Samples will be analyzed by EPA Test Method 8240/8260 for total petroleum hydrocarbons (TPH) quantified as gasoline and diesel, and the aromatic gasoline constituents benzene, toluene, ethylbenzene and total xylenes (BTEX).

Task 2 - Free-phase Product Removal

Because the free-phase product remaining on the two site constitutes a continuing source of dissolved-phase groundwater contamination, PES has recommended continuation of the free-phase product removal that was begun earlier this year. In the attached June 9, 1993 letter, PES described a Phase II product removal program utilizing passive skimmer devices placed in wells. This program should be implemented at this time.

Task 3 - Chemical Characterization of Free-phase Product

This task consists of the chemical characterization of the free-phase product currently found in monitoring wells. The purpose of the chemical characterization is to verify that no contaminants are present other than fuel constituents from the former fuel tanks. This information will be used to: (1) evaluate waste management alternatives for the recovered product; and (2) verify the adequacy of groundwater monitoring for dissolved-phase contaminants.

This task will consist of collecting two composite product samples from wells historically shown to consistently contain product. The samples will be analyzed for the following constituents:

- TPH quantified as gasoline and diesel by EPA Test Method 8260;
- Total Oil and Grease by Standard Method 5520 D & F;
- Volatile organic compounds (including BTEX) by EPA Test Method 8240;
- Semivolatile organic compounds by EPA Test Method 8270;
- Chlorinated hydrocarbons (including PCBs) by EPA Test Method 8080;
- Total metals (Title 22, Section 66261.24 list) by EPA Test Method 6010/7000 series; and
- Organic lead by California DHS HML Method 338.

Task 4 - Tidal Influence Study

There has been conflicting information regarding the influence of tidal changes in San Francisco Bay and Temescal Creek (located along the southern boundary of the Shellmound III site) on groundwater levels on the Powell Street Plaza and Shellmound III sites. PES therefore recommends conducting a continuous tidal influence study, covering a 48-hour period, to identify whether tidal influence is occurring. The study will consist of continuous water-level determinations in four selected wells using pressure transducers and dataloggers. The 48-hour period is intended to cover at least two complete tidal cycles (two high/low tide cycles). Periodic water level measurements will be made in wells without transducers during the study period.

Tidal cycles will be determined from published tide tables, corrected to the site.

Task 5 - Groundwater Monitoring / Subsequent Quarters

Based upon the results of the preceding four tasks, PES will recommend a groundwater monitoring program for subsequent quarterly periods (beginning in November 1993). The scope of the monitoring will be discussed with ACDEH and described in a groundwater monitoring plan for ACDEH's review and approval.

Task 6 - Site Characterization Data Evaluation

Upon receipt of the data from Tasks 1 through 4, PES will compile and summarize all environmental data related to the hydrocarbon contamination on the Powell Street Plaza and Shellmound III sites. PES will evaluate the adequacy of the data with respect to defining the extent of free- and dissolved-phase hydrocarbon contamination. PES will make recommendations for further investigation, if needed, to provide the additional data to characterize the contamination. If additional investigation is appropriate, it will be described in a workplan for ACDEH's review and approval.

Task 7 - Remedial Alternative Feasibility Study

PES will conduct a remedial feasibility study that will begin immediately and continue throughout the completion of Tasks 1 through 6. This analysis will include: (1) identification of cleanup objectives and setting remedial goals; (2) identification of cleanup technologies and specific alternatives to accomplish the objectives; (3) evaluating the alternatives; and (4) proposing a conceptual remedial plan. Remedial design, as needed, will be part of a subsequent task.

As we discussed during our meeting with ACDEH and RWQCB on July 15, CalTRANS' reconstruction of the Interstate 80/580 interchange will include substantial construction activities within the Powell Street Plaza and Shellmound III sites. This work will also require that East Bay Municipal Utilities District (EBMUD) relocate their North Interceptor, a major sanitary sewer collection and transport pipeline that currently parallels Interstate 80 adjacent to the subject site. The interceptor will be relocated approximately 50 feet east of its current location. PES will be in communication with CalTRANS and EBMUD throughout their respective construction processes so that the construction work and any future remedial activities are coordinated to the advantage of all parties.

Task 8 - Site Characterization and Feasibility Study Reporting

Upon completion of the above tasks (and additional site investigation activities, if needed), PES will prepare a report that will: (1) present all pertinent data related to fuel releases at the Powell Street Plaza site; (2) summarize environmental conditions related to fuel contamination on the Powell Street Plaza and Shellmound III sites; (3) summarize the results of the feasibility evaluation; and (4) present remedial objectives and a conceptual remedial plan. This report will be submitted to ACDEH for review and approval.

Task 9 - Remedial Design and Workplan Preparation

Upon receiving ACDEH's approval of the conceptual remedial plan, PES will conduct the appropriate remedial design and prepare a detailed workplan for implementing the remediation.

SCHEDULE

The following is a schedule for implementing the activities described above. Several tasks should begin immediately and/or have definitive timetables. Because of the uncertainty regarding the need for further investigation to fully characterize hydrocarbon contamination, the timing of subsequent tasks is less certain.

Task Description	Schedule
Groundwater Monitoring/First Quarter	Complete by August 31, 1993
Free-phase Product Removal	Initiate August 1993 and ongoing
Product Characterization	Complete by August 31, 1993
Tidal Influence Study	Complete by September 15, 1993
Groundwater Monitoring/Subsequent Quarters	Complete by November 30, 1993 quarterly thereafter
Site Characterization Data Evaluation	Complete by September 31, 1993
Subsequent Site Investigation	To be determined, as needed
Remedial Feasibility Study	To be determined based on need for additional investigation
Site Characterization and Feasibility Study Report	To be determined (estimated completion November 30, 1993)
Remedial Design and Workplan	To be determined (projected December 31, 1993)

PES trusts this is the information you require at this time. Please feel free to contact me if you have any questions.

Yours very truly,

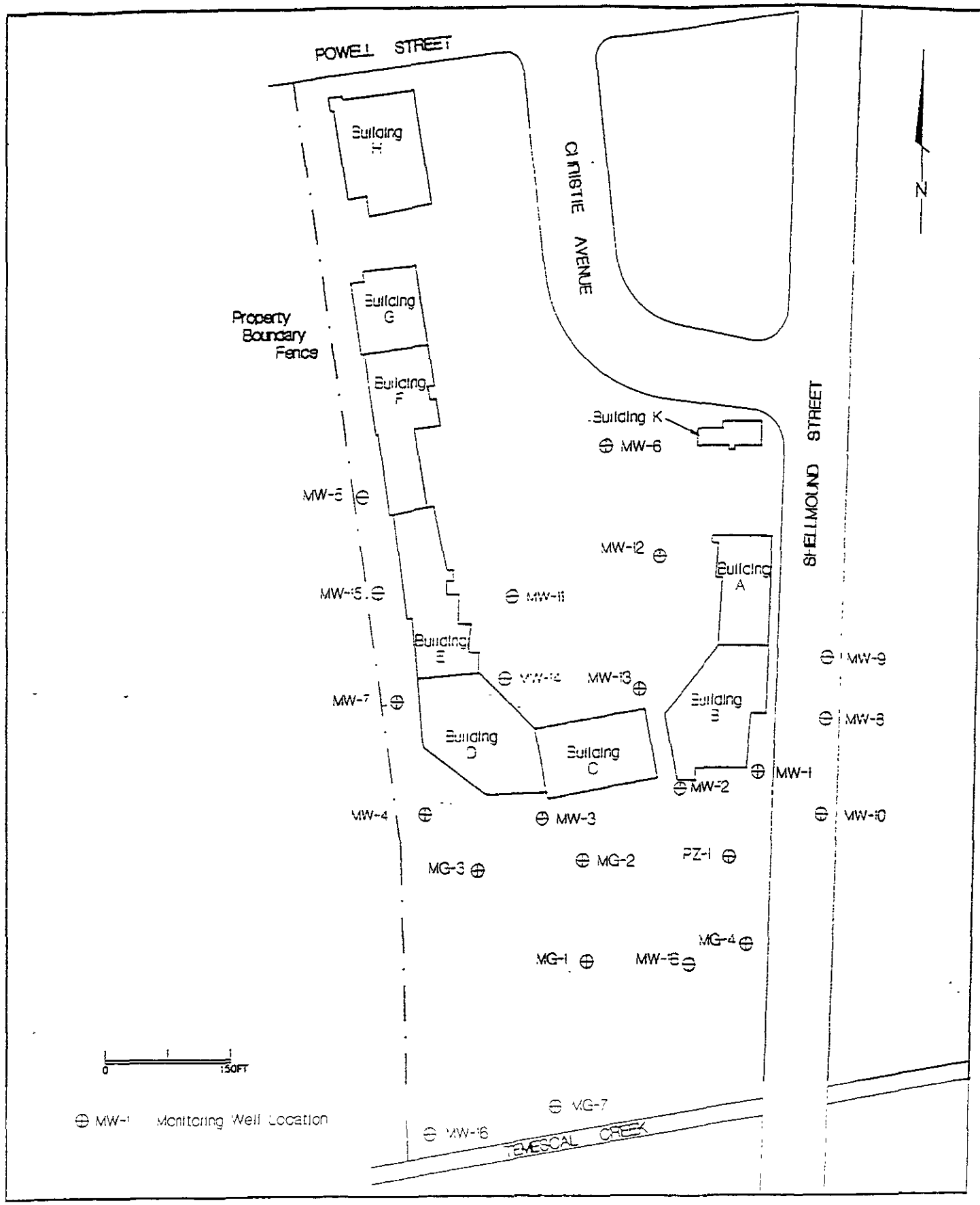
PES ENVIRONMENTAL, INC.

Robert S. Creps, P.E.
Associate Engineer

cc: Rich Hiett - San Francisco Bay RWQCB

Attachments: Plate 1 - Well Location Map

Summary of Phase I Results and Phase II Workplan
Product Removal Program
Powell Street Plaza and Shellmound III Sites
Emeryville, California



PES Environmental, Inc.
Engineering & Environmental Services

Well Location Map
P.I.E. and Shellmound II Sites
Former Advanced Packaging Systems Facility
Emeryville, California

1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
241.01001		2/92	

PES Environment Inc.
Engineering & Environmental Services

June 9, 1993

241.01.01.002

Mr. Thomas Gram
5800 Shellmound, Suite 210
Emeryville, California 94608

SUMMARY OF PHASE I RESULTS AND PHASE II WORKPLAN
PRODUCT REMOVAL PROGRAM
POWELL STREET PLAZA AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

Dear Tom:

This letter summarizes the results of PES Environmental Inc.'s (PES) pilot (Phase I) free product removal program at the Powell Street Plaza and Shellmound III sites located in Emeryville, California. At your request, we have prepared a recommended scope of work for continued free-phase product removal at the sites. A summary of previous work performed at the sites is contained in our November 9, 1992 letter *Proposed Scope of Work and Fee Estimate, Product Removal and Water-Level Investigation, Powell Street Plaza and Shellmound III Sites, Emeryville, California*. This letter contains: (1) the results of the Phase I product removal program; (2) a proposed scope of work for continued free product removal (Phase II); (3) a cost estimate for the proposed scope of work; and (4) a schedule.

RESULTS OF PHASE I FREE PRODUCT REMOVAL PROGRAM

The Phase I free product removal program consisted of assessing the distribution and volume of product in wells at the sites. PES manually bailed product from wells which contained detectable quantities of product as measured by an interface probe. On March 30, 1993, PES inspected the monitoring wells on both sites to determine which wells contained free product. Several of the well covers had seized and could not be opened with the T-bar provided to PES. A new device was fabricated by PES to open the well covers. On April 13, 1993, each of the wells were opened and inspected for the presence of free-phase product.

Table 1 summarizes the volume of free product removed during Phase I and product thickness measurements from each well. Product thickness measurements were obtained and free product was removed from on April 21, 1993 from Wells MW-3, MW-7, MW-13, MW-15, and MG-3. Additional product thickness measurements were made on April 22, April 27, and May 6, 1993. Free product was removed from Wells MW-7, MW-13, MW-15, MG-1, and MG-3 on April 27, 1993.

Initial product thickness in the wells on April 21, 1993 ranged from 0.09 (Well MW-3) to 1.08 feet (Well MW-7). As shown by the data in Table 1, product thicknesses in each well decreased immediately after bailing and slowly recovered over time. The rate of recovery of

free product in each well was variable. For example, although Well MW-7 initially contained more product than Well MW-13, after bailing product on April 21, the product thickness recovered more rapidly in Well MW-13 than in Well MW-7.

The total estimated volume of product removed during the Phase I program was about 2.2 gallons. The amount of product removed from the April 21 bailing was about 1.7 gallons. The volume of product removed from the April 27 bailing decreased to approximately 0.5 gallons.

PROPOSED PHASE II SCOPE OF WORK

Recommended Approach

Due to the low product removal rates achieved during the pilot program, we recommend using a passive free-phase product skimmer should you wish to continue product recovery at these two sites. A passive skimmer is a device equipped with a hydrophobic filter that allows permeation of hydrocarbon product and prevents water penetration. Once product permeates through the filter it drains in a collection chamber at the bottom of the skimmer. The collection skimmer is manually emptied.

PES recommends that two passive skimmers be installed in wells at the sites. Each skimmer will be lowered into a well and attached to the surface with a cable. The skimmers will be rotated among the six wells on the two sites that contain free product.

Task 1 - Planning/Coordination

This task will involve reviewing water-level data to determine the optimum depth to install the skimmers in each well. In addition, data collection forms and computer spreadsheets for data analysis will be prepared.

Task 2 - Capital Equipment and Implementation

Passive skimmers will be purchased and initially installed in two wells. In addition, the top of each well casing (for wells containing product) will be fitted with a hanging device to allow for installation of the skimmer.

Task 3 - Free Product Removal

PES will initially inspect the skimmers once a week for one year and remove free product as necessary. During each site inspection the product thickness of each well will be measured. PES will evaluate the amount of product in each well and the recovery of product levels after

removal episodes. Based on this information, the skimmers will be rotated among the wells to achieve the greatest removal of product. The volume of product removed and the product thickness of each well will be tabulated in a computer spreadsheet for data analysis and reporting purposes.

The free product will be collected onsite in a 55-gallon drum stored at the bermed former biotreatment compound at the southwestern corner of the Powell Street Plaza site. The compound has been secured with a locked gate to reduce the likelihood of access by the public. Product will be recycled at an appropriate oil recycling facility once an adequate volume of product has been collected to make transportation to the recycling facility cost-effective. Because of uncertainty regarding the amount of product that will be recovered, the cost for product recycling or disposal of decontamination water is not included in our fee estimate. PES personnel will comply with the site-specific health and safety plan (PES, 1993) during free product removal activities.

Our cost estimate for this task is based on weekly site inspections for one year. If it is subsequently determined that less frequent inspections are adequate, our inspection schedule will be adjusted, as needed. Costs will be reduced commensurately. We will keep you informed as the project progresses.

Task 4 - Reporting (Optional)

If required by you, PES will prepare four quarterly letter reports summarizing the activities carried out during the previous quarter, including the volume of product removed and the product thickness measurements from each well. PES will also evaluate the effectiveness of the product removal program.

FEE ESTIMATE

PES will perform the above-described tasks on a time and expense basis according to our existing Service Agreement, (reference No. 241.01.001, dated December 2, 1992). Our estimated fee for conducting the scope of work for a one year period is provided below on a task-by-task basis.

Task 1 - Planning/Coordination

Task 2 - Capital Equipment and Implementation

Task 3 - Free Product Removal

TOTAL (without Task 4)

Task 4 - Reporting (Optional)

SCHEDULE

PES will initiate the above-described scope of work within two weeks after receiving written authorization to proceed. Once Tasks 1 and 2 have been completed, PES will provide free product removal and (if requested) quarterly reporting services for one year.

We appreciate the opportunity to be of continued service to you on this project. Please call us if you have any questions or require additional information regarding either the results of the pilot program or the proposed product removal program.

Yours very truly,

PES ENVIRONMENTAL, INC.

James L. Jasperse, P.E.
Senior Engineer

Robert S. Creps, P.E.
Associate Engineer

Reference:

PES Environmental, Inc., 1993. *Health and Safety Plan, Product Removal and Water-Level Investigation, Powell Street Plaza, Emeryville, California.* March 2.

Attachments: Table 1. Summary of Results - Phase I Product Removal Program

Table 1. Summary of Results - Phase I Product Removal Program

POWELL STREET PLAZA AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

Well	Date	Time	Volume Removed (gal)	Measured Thickness (ft)
MW-3	21-Apr-93	11:08		0.09
		11:18	0.11	
		14:10		0.00
	22-Apr-93	15:29		0.01
	27-Apr-93	10:40		0.01
		14:11		0.00
	6-May-93	08:12		0.00
MW-7	21-Apr-93	10:17		1.08
		10:27	0.74	
		14:00		0.00
	22-Apr-93	15:17		0.15
	27-Apr-93	09:55		0.21
		10:05	0.11	
		14:03		0.01
	6-May-93	08:05		0.13
MW-13	21-Apr-93	08:17		0.79
		08:27	0.42	
		13:32		0.17
	22-Apr-93	16:10		0.54
	27-Apr-93	07:40		0.56
		07:50	0.22	
		13:40		0.43
	6-May-93	07:14		0.54
MW-15	21-Apr-93	09:39		0.54
		09:49	0.30	
		13:51		0.09
	22-Apr-93	15:07		0.04
	27-Apr-93	09:25		0.14
		09:35	0.06	
		13:53		0.02
	6-May-93	07:50		0.10
MG-1	22-Apr-93	15:55		0.48
	27-Apr-93	11:31		0.46
		11:41	0.07	
		14:19		0.15
	6-May-93	08:35		0.29

Table 1. Summary of Results - Phase I Product Removal Program

POWELL STREET PLAZA AND SHELLMOUND III SITES
EMERYVILLE, CALIFORNIA

Well	Date	Time	Volume Removed (gal)	Measured Thickness (ft)
MG-3	21-Apr-93	12:15		0.45
		12:25	0.11	
		14:23		0.02
	22-Apr-93	14:40		0.16
	27-Apr-93	11:57		0.25
		12:07	0.04	
		14:26		0.08
	6-May-93	08:28		0.25
			2.18	TOTAL

BLYMYER
ENGINEERS, INC.

BE1

REPORT TO

THE MARTIN GROUP

FOR THE

ENVIRONMENTAL SITE
ASSESSMENT

OF

5500 EASTSHORE HIGHWAY
EMERYVILLE, CALIFORNIA

APRIL 19, 1989

MIKE RANCE

REPORT TO

THE MARTIN GROUP

FOR THE

ENVIRONMENTAL SITE
ASSESSMENT

OF

5500 EASTSHORE HIGHWAY
EMERYVILLE, CALIFORNIA

APRIL 19, 1989

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APPENDIX C:	GTI Bore Logs Dated October 1986
APPENDIX D:	Laboratory Results From Sequoia Analytical Dated October 15, 1986
APPENDIX E:	Alton Geoscience's Report Dated April 28, 1988
APPENDIX F:	Laboratory Results From Sequoia Analytical Dated January 13, 1987
APPENDIX G:	Laboratory Results From Sequoia Analytical Dated January 5, 1987 and Brown and Caldwell Dated January 30, 1987
APPENDIX H:	GT Environmental Laboratories Dated August 10, 1987
APPENDIX I:	CytoCulture Operational Plan
APPENDIX J:	Permit From East Bay Municipal Utility District

* TABLE 1:	Summary of Analytical Data From Previous Investigations
* TABLE 2:	Summary of Analytical Data From Alton Geoscience

I. INTRODUCTION

The Martin Group retained Blymyer Engineers, Inc. to conduct an Environmental Site Assessment (ESA) of the property located at 5500 Eastshore Highway, Emeryville, CA (Figure 1). An ESA is an investigation which identifies and assesses environmental risk associated with a particlar property. The ESA is twofold: First, the history of the occupants and the uses of a specific parcel are reconstructed to determine whether any hazardous materials had been used on the property. Second, a physical on-site inspection of the property is conducted which may include a sub-surface soil and/or groundwater investigation. Although the ESA is a thorough investigation, the investigatory tools available are not abundant. Historical information is often not continuous, and thus a hazardous waste-free site history cannot be guaranteed, but it does substantially reduce the risk of unanticipated discovery.

This ESA consisted of a facility historical search and site inspection. This report conveys the results of the above scope of work. This ESA has been prepared in accordance with guidelines prepared by Chase National Financial Services.

II. OFF SITE REVIEW

The following agencies were contacted to develop the latest information from Federal, state, county or local agencies concerning sites of possible environmental contamination within two miles of the site:

Janet Naito
California Department of Health Services
Toxic Substances Control Division
North Coast California Section
5850 Shellmound St., Suite 130
Emeryville, CA 94608

Anders Lundgren, Mike Chee
San Francisco Bay Regional Water Quality Control Board
1111 Jackson St., Room 6000
Oakland, CA 94607

Regional Water Quality Control Board
Central District
3443 Routier Rd.
Sacramento, CA 95827

Jim Gibney
California Department of Water Resources
Central District
Groundwater Unit
3251 S St.
Sacramento, CA 95816

California Waste Management Board
Enforcement Division
1020 9th St., Suite 300
Sacramento, CA 95814

U.S.G.S. Library
345 Middlefield Rd.
Menlo Park, CA 94025

Ed Howell
Alameda County Department of Environmental Health
Hazardous Material Division
80 Swan Way, Suite 200
Oakland, CA 94621

Gil Stratton
Alameda County Department of Environmental Health
Office of Solid Waste Management
470 27th St., Room 325
Oakland, CA 94612

Kelvin W. Hickenbottom
Alameda County Flood Control and Water Conservation District
399 Elmhurst St.
Hayward, CA 94544

Ted Ferrera
Alameda County Fire Patrol
1617 College Ave.
Livermore, CA 94550

Alameda County Building and Inspection
399 Elmhurst, Room 411
Hayward, CA 94544

Captain Littley
Berkeley Fire Department
2121 McKinley
Berkeley, CA 94703

City of Berkeley Environmental Health Department
2180 Milvia, 3rd Floor
Berkeley, CA 94704

City of Berkeley Building and Inspection
2180 Milvia
Berkeley, CA 94704

City of Emeryville
Public Works Department
2200 Powell St., 12th Floor
Emeryville, CA 94608

Jim Eversole
Emeryville Fire Department
4331 San Pablo
Emeryville, CA 94608

Jerry Blueford
Fire Prevention Bureau
1 City Hall, 2nd Floor
Oakland, CA 94612

The following regulatory agency lists were consulted to identify potentially contaminated sites within a two mile radius:

1. California Department of Health Services
   Toxic Substances Control Division
   North Coast California Section
   5850 Shellmound St.
   Emeryville, CA 94608

   Lists checked:

   U.S. Environmental Protection Agency, Region IX, Superfund Information Program, CERCLIS print-out, dated 2/16/89.

   State of California, Department of Health Services, Abandoned Site Program Information System print-out, dated 4/2/89.

   State of California, Department of Health Services, Toxic Substances Control Division, Expenditure Plan for the Hazardous Substance Cleanup Bond Act of 1984, Revised January 1989.

2. San Francisco Bay Regional Water Quality Control Board
   1111 Jackson St., Room 6000
   Oakland, CA 94607

   Lists checked:

   "North Bay Counties, properties reported to the RWQCB as having evidence of a chemical release," print-out, dated 2/10/89.

   "Fuel Leaks - Alameda [County]", print-out, dated 3/26/89.

The regulatory agency survey revealed the following potentially contaminated sites within a two mile radius:

BERKELEY SITES

2366-78 San Pablo Avenue
2366 San Pablo Avenue
Berkeley, CA 94702

ARCO
3000 Shattuck Ave.
Berkeley, CA

Baum Electrolab
800 Bancroft Way
Berkeley, CA 94710

Bay Export Services
717 Potter St.
Berkeley, CA

Berkeley Business Center
2900 San Pablo Ave.
Berkeley, CA

Berkeley Car Wash
2995 San Pablo Ave.
Berkeley, CA

Berkeley Hydraulic Service
2734 San Pablo Ave.
Berkeley, CA

Berkeley Industrial Court
729 Heinz Ave.
Berkeley, CA 94710

Carleton Business Center
2700 7th St.
Berkeley, CA 94710

Chronicle Depot
2817 7th St.
Berkeley, CA

Coburn Construction
1006 Pardee St.
Berkeley, CA

Colgate Palmolive
Seventh and Carleton Sts.
Berkeley, CA 94710

Cutter Laboratories
7th & Parker
Berkeley, CA

Durkee-Wareham
700 Heinz
Berkeley, CA

Electro Coatings Inc.
893 Carleton St.
Berkeley, CA 94710

Folger Murphy Property
1020 Murray St.
Berkeley, CA

Gary Steel Co./Ducommun Metals
2560 7th St.
Berkeley, CA

Gring Pest Control
741 Folger St.
Berkeley, CA

Kaplan Property
2234 San Pablo
Berkeley, CA

Keith Property
2598 Sacramento St.
Berkeley, CA

Korman & Ng/Newberry Station
2929 Shattuck
Berkeley, CA

MacBeath Hardware
930 Ashby Ave.
Berkeley, CA

Macaulay Foundry Inc.
811 Carleton St.
Berkeley, CA 94710

Matrecon Inc.
2424 4th St.
Berkeley, CA 94710

Meadows, Elwood & Clara
1440 Ashby Ave.
Berkeley, CA

Meyer Sound
2832 San Pablo Ave.
Berkeley, CA 97410

Miles Laboratories/Cutter
4th and Parker Sts.
Berkeley, CA 94701

Moore Property
3155 Sacramento St.
Berkeley, CA

Newberry Station Office Park
2929 Shattuck Ave.
Berkeley, CA

Nomura Bros. Inc.
2720 San Pablo
Berkeley, CA

Oliver & Co.
1035 Carleton St.
Berkeley, CA

PQ Corporation
801 Grayson St.
Berkeley, CA

Pahlmeyer Family Trust
2700 San Pablo Ave.
Berkeley, CA

Peerless Electric Company
747 Bancroft Way
Berkeley, CA

Peerless Lighting
2220 4th St.
Berkeley, CA

Southwick Chrysler-Plymouth
2900 Shattuck Ave.
Berkeley, CA

Super-7
901 Ashby Ave.
Berkeley, CA

Temescal
2850 7th St.
Berkeley, CA

Texaco
840 Ashby Ave.
Berkeley, CA

Transamerica Devaual
829 Bancroft Way
Berkeley, CA

Triangle Paint Factory
2222 Third St.
Berkeley, CA

Trust Security Management
2321 4th St.
Berkeley, CA

U of C Marchant Bldg.
6701 San Pablo
Berkeley, CA

U.C. Berkeley
Murray/Folger/7th Sts.
Berkeley, CA

Univ. of Cal.
6701 San Pablo St.
Berkeley, CA

Unknown
811 Carleton
Berkeley, CA

Unknown
2076 Ashby Ave.
Berkeley, CA

Upright Inc.
1013 Pardee St.
Berkeley, CA

Wareham Development
Seventh St. Properties
Berkeley, CA

Wareham Properties
2900 Fifth St.
Berkeley, CA 94710

EMERYVILLE SITES (Figure 2)

A & J Trucking, Inc.
5600 Shellmound Ave.
Emeryville, CA

AC Transit
47th and San Pablo
Emeryville, CA

AC Transit Emeryville
45th St. & San Pablo Ave.
Emeryville, CA 94608

American Bituminals & Asphalt
1520 Powell St.
Emeryville, CA 94608

Artist Cooperative
1420 45th St.
Emeryville, CA

Bay Center Project
65th and Christie
Emeryville, CA

Berkeley Farms
1313 53rd Ave.
Emeryville, CA

Berkeley Farms
4550 San Pablo Ave.
Emeryville, CA

Capitol Refining Co.
Foot of 64th St.
Emeryville, CA 94608

Chevron Emeryville Terminal
1520 Powell
Emeryville, CA 94608

Chromex Div of Charles Lowe
1400 Park Ave
Emeryville, CA 74608

City of Emeryville/Former Shell
1420 45th St.
Emeryville, CA

Del Monte Plant #35
1250 Park Ave.
Emeryville, CA

Electro Coatings
1421 Park Ave
Emeryville, CA 94608

Emeryville Bayfront/U.S. Postal
1650 65th
Emeryville, CA

Emeryville Market Place
Between 64th, Powell, I80, SPRR
Emeryville, CA 94608

Garrett Freight Lines
64th St. and La Coste
Emeryville, CA

Getz Construction Co.
1351 Ocean Ave.
Emeryville, CA

Grow Group
41st St.
Emeryville, CA

HFH, Limited
6400 Hollis St.
Emeryville, CA

Hollis Street Project
6050 Hollis St.
Emeryville, CA

ITT Grinnell
6121 Hollis St.
Emeryville, CA 94608

Industrial Hard Chrome
5701 Hollis St.
Emeryville, CA 94608

Kaiser Engineers
1140 45th St.
Emeryville, CA

Les Paul
1199 Park Ave.
Emeryville, CA

Michel and Pelton
5743 Landregan St.
Emeryville, CA 94608

Mike Roberts Color Productions
6707 Bay St.
Emeryville, CA 94608

Nielsen Property
5800 Shellmound St.
Emeryville, CA

PG&E Emeryville
4525 Hollis
Emeryville, CA 94608

PIE/Nationwide Truck Facility
5500 Eastshore Freeway
Emeryville, CA 94608

Peterson Manufacturing Co.
1600 63rd St.
Emeryville, CA

Pfizer Inc.
4650 Shellmound St.
Emeryville, CA

Pfizer Pigments
4650 Shellmound St.
Emeryville, CA

Ransome Company
4030 Hollis St.
Emeryville, CA

Rifkin Realty Partners
4549 Horton St.
Emeryville, CA 94608

Schwabacker-Frey
5733 Peladeau
Emeryville, CA

Shell
4250 Horton St.
Emeryville, CA

Shell
1800 Powell St.
Emeryville, CA

Shell Development Co.

Emeryville, CA

Unknown
4543 Horton St.
Emeryville, CA

Westinghouse Electric
5899 Peladeau St.
Emeryville, CA 94608

OAKLAND SITES

ARCO
731 W. MacArthur Blvd.
Oakland, CA

ARCO
889 W. Grand Ave.
Oakland, CA

Aratex Services
958 28th St.
Oakland, CA

Ashland Oil
Ferry & Petroleum
Oakland, CA

Bayox
1171 Ocean Ave.
Oakland, CA

Belous Property
3423 Harlan
Oakland, CA

Bolin's Service Garage
6335 San Pablo Ave.
Oakland, CA

California Highway Patrol Oakl.
3601 Telegraph Ave.
Oakland, CA

Chevron
850 W. Grand Ave.
Oakland, CA

Collins Property
2452 Magnolia St.
Oakland, CA

Dunn Quality Paints
1007 41st St.
Oakland, CA

E&R Auto Wreckers
3230 Ettie St.
Oakland, CA

E-Z-EST Products

2528 Adeline St.
Oakland, CA

EBMUD
2127 Adeline
Oakland, CA

Electro Coatings Ind.
1401 Park Ave.
Oakland, CA 94608

Fabco
1249 67th St.
Oakland, CA

Fyne Property
774 W. Grand Ave.
Oakland, CA

Givens Investment Company
6398 Telegraph
Oakland, CA

Grant Laboratories
6020 Adeline St.
Oakland, CA 94608

Hang Lung Plastics
1960 Adeline St.
Oakland, CA

Henry Horn & Sons
1301 65th St.
Oakland, CA

Mobil
5425 Grove St.
Oakland, CA

Mobil
Petroleum St.
Oakland, CA

Nabisco Brands, Inc.
1267 14th St.
Oakland, CA

Oakland Army Base Warehouse Area
Tulagi St.
Oakland, CA 94626

Oakland National Engraving

1001 42nd St.
Oakland, CA 94608

Oliver
1200 65th
Oakland, CA

Oliver Rubber Co.
1200 65th St.
Oakland, CA 94662

PCC
6400 San Pablo Ave.
Oakland, CA

PG&E
2121 Peralta St.
Oakland, CA

Pacific Supply
1735 24th St.
Oakland, CA

R.D. Miner Co.
750 37th St.
Oakland, CA

Shattuck Imports
6562 Shattuck Ave.
Oakland, CA

Shell
500 40th St.
Oakland, CA

Shell
230 W. MacArthur Blvd.
Oakland, CA

Shell
2800 Telegraph Ave.
Oakland, CA

Simas Bros.
4013 Telegraph
Oakland, CA

Southern Pacific
Pine St.
Oakland, CA

Southern Pacific Transportation Co.

1707 Wood St.
Oakland, CA 94607

State Architect - Bay Bridge
Bay Bridge
Oakland, CA

Thrifty Oil
6125 Telegraph
Oakland, CA

Thrifty Oil
3400 San Pablo Ave.
Oakland, CA

Unknown
6200 San Pablo
Oakland, CA

Zero Waste Systems Inc.
1450 32nd St.
Oakland, CA 94608

III. PAST USES OF THE SITE AND SURROUNDING LAND

Facility History

The investigation into historical uses of the property involved systematically reviewing several data sources.

Aerial photographs, Sanborn Fire Insurance Map Co. maps, and a topographical map were examined to help establish a chronology of occupants and uses at the subject site since 1930.

A 1930 Sanborn map and a 1936 aerial photograph indicate that the subject site was part of the San Francisco Bay. The bay came up to Shellmound Avenue. A 1939 Sanborn map indicates that the bay in this area of Emeryville was gradually filled beginning in 1938. Two large industrial facilities were located within a 1/4 mile radius of the subject property. The Parafine Companies Inc., formerly Parafine Paint Company, was located immediately north of Powell Street and a Sherwin Williams Lime and Sulphur Plant was located immediately east of Shellmound Avenue.

Figure 3 shows the subject property with the P.I.E. terminal and the surrounding industrial businesses. The Pabco Products Inc., formerly The Parafine Companies Inc., is located north of Powell Street. Pabco manufactured paints and roofing and floor coverings at this facility. For storing oil, the Pabco facility contained several aboveground, steel tanks.

Located between Powell Street and the P.I.E. truck terminal are a wholesaler of floor coverings (Murray B. Marsh Co.), an auto freight depot and a truck repair shop. The truck repair shop stored diesel and gasoline in aboveground tanks. East of P.I.E. and the Shellmound Avenue are Western Pine Supply Co. which was a

metal fabricator, Sherwin Williams Co. which used its property for storage, and C. K. Williams and Co. which manufactured paints and paint pigments. The Judson Steel Corp. scrap yard is located south of P.I.E. West of P.I.E. is the East Shore Highway and the San Francisco Bay.

A 1964 Sanborn map indicates that the subject community has undergone little change. However, the Pabco Products Inc. facility has been demolished and the grounds are undeveloped. The C. K. Williams plant is owned and operated by the Mineral Pigments and Metal Division of Charles Pfizer, Inc.

This community has been primarily industrial until the late 1940's when it began a process of gentrification. Currently, this area of Emeryville is a blend of residential, commercial and industrial uses.

A Chain of Title Documents were provided by The Martin Group and are attached as Appendix A.

Underground and Aboveground Fuel Storage

A number of underground tanks were observed on the subject site prior to its development as a shopping center in 1987. These tanks were removed in July of 1986 by R. S. Eagan and Company. The schedule of tanks removed was as follows:

2 - 10,000 gallon diesel tanks;

1 - 10,000 gallon gasoline tank;

1 - 8,000 gallon motor oil tank;

1 - 2,000 gallon waste oil tank;

1 - 1,000 gallon motor oil tank;

1 - 550 gallon gear oil tank; and

1 - 550 gallon grease tank

When these tanks were removed corrosion holes were observed in 1 - 10,000 gallon diesel tank and the waste oil tank. The excavations where these tanks were located were visibly stained from product leaked from the tanks.

In addition, John Suprock, former Vice President for Pacific Intermountain Express, reported that in 1972 the gasoline tank on site leaked and had to be replaced. According to Mr. Suprock, the U.S. E.P.A. inspected the tank excavation, which was visibly contaminated, and reportedly told Mr. Suprock to replace the tank and resurface the area without remediation. No documentation was offered to support the incident.

Aboveground tanks for motor vehicle fuel storage were reported on the site in 1944 by the Properties Department of P.I.E. Nationwide. These tanks were reported based on

engineering drawing not provided to BEI. It is unknown where the aboveground tanks even experienced an unauthorized release. However, the area of their purported location was observed to have soil contamination.

IV. PRESENT AND PROPOSED USE OF SITE

The subject property is currently used as a shopping center. A site plan is attached as Figure 3. A current aerial photograph is attached as Figure 4. A current land use map is attached as Figure 5.

No sites within a 1/4 mile radius are being proposed for a permitted land use.

V. WALKING INSPECTION OF SITE

A. A walking inspection of the facility was conducted on April 12, 1989. The following items were investigated and noted.

1. Discolored or disturbed soil areas. Except for landscaped areas, the site is entirely paved or built-upon. There are no apparent areas of discolored or disturbed soil.

2. Areas of sparse, sick or dead vegetation. No areas of sparse, sick or dead vegetation were noted.

3. Drums of storage tanks. The only tanks observed on site are aboveground tanks used as bioreactors in a groundwater remediation system. No underground storage tanks or 55 gallon drums were observed.

4. Discolored or polluted water. No discolored or polluted water was noted on site.

5. Unusual or noxious odors. No unusual or noxious odors were noted while on site.

6. Groundwater Monitoring Wells. Twelve groundwater monitoring wells are located on site. In addition, three wells are located to the southeast and to the south of the subject property. These wells are part of a groundwater monitoring and remediation system (see Section VIII) for more information.

7. Road or two-tracts with no apparent outlet or purpose. There are no roads or two-tracts without outlets or purpose.

8. Asbestos. This shopping center was constructed in 1987 and thus is unlikely to contain asbestos containing materials, which were outlawed in 1978.

9. P.C.B.'s. No P.C.B.'s were noted at the facility.

B. The only conditions noted that warrant further investigation are the aboveground tankage and groundwater monitoring wells associated with the groundwater remediation system. At this time the extent of contamination has been defined (see Section VII).

C. All laboratory reports have been included in Section VII.

D. The only remediation required is that being conducted on the soils and groundwater at the facility. The remediation including costs is discussed in Section VIII.

VI. WATER SOURCES

There are no bodies of water on site. According to engineering drawings provided by The Martin Group, the facility utilized a public water supply source.

The most current groundwater contour map has been attached locating the subject site. (Figure 6) According to the San Francisco Regional Water Quality Control Board, this map is the most detailed map available. Groundwater at this facility is brackish and is not considered potable.

VII. SOILS AND SUBSURFACE INVESTIGATION

Boring Log Review

Subsurface investigation was conducted at the subject site in order to define the extent of contamination. Groundwater monitoring wells or soils bores were installed on four separate occasions to assess contamination in the subsurface. Two of these occasions were conducted in 1986 and are summarized in Alton Geoscience's report dated November 3, 1987 (Appendix A). In addition, a third round of groundwater monitoring wells were installed by Groundwater Technology, Inc. on October 1986 (Appendix B). These investigations revealed the following:

1. Groundwater and soils were discolored in various bores at various levels.
2. Fill material was noted in all bores to depths varying from five to ten feet below ground surface.
3. Wide variations in soil characteristics were noted between the borings. The soil is characteristic of a filled area.
4. Odors characteristic of fuels (both gasoline or diesel) were noted in some soil samples and water samples obtained from the bores.

Soil and water samples were obtained for laboratory analysis. The results are attached in Alton's report and are summarized below in Table I. In addition, one well (MW-2) was analyzed for priority pollutants and phenols (Appendix C). This analyses revealed trace amounts of some compounds, although all detectable levels were below action levels set by the State of California.

Alton Geosciences, Inc. conducted the fourth subsurface investigation in March of 1989 to further define the extent of contamination. Alton's report dated April 20, 1988 on the fourth round of drilling is attached as Appendix D and is summarized below. This investigation revealed the following:

1. Discolored soils and groundwater were noted in some bores, but bores drilled on the perimeter of the affected area did not appear discolored.
2. Fill material was noted in bores to depths ranging from five to ten feet below ground surface.
3. Soils exhibited a wide variety of differing characteristics, typical of filled areas.
4. Unusual odors of hydrocarbons were noted in bores done in the areas of heaviest contamination.

Soil and water samples were obtained for laboratory analysis. The results are attached in Alton's report and one summarized below in Table II.

VIII. SITE REMEDIATION

Two soil remediation projects have been conducted and one soil and groundwater remediation is currently being conducted of the subject site. The purpose of these remediations is to reduce the levels of hydrocarbons at the site in both soil and groundwater to levels acceptable to the State of California and County of Alameda. Details on each remediation are provided below:

Soil Remediation - Phase I

The first phase of soil remediation was conducted between the months of November 1986 and February 1987, by Groundwater Technology, Inc. The treatment utilized Enhanced Natural Degradation to reduce levels of hydrocarbons in the soil. GTI excavated contaminated soils, arranged the soil into piles then treated the piles with nutrients to enhance natural bacterial growth. A blower pump was used to draw air through the piles. Samples were taken periodically to track the progress of remediation (Appendix E).

The analyses of soil samples indicated that hydrocarbon contamination in the soil had been reduced to acceptable levels by the end of February. The soil was then transported to West Contra Costa County Landfill in Richmond, CA for disposal.

Soil Remediation - Phase II

The second phase of soil remediation was conducted between May and September of 1987. This remediation was required because of additional contaminated soil that was discovered during excavation for foundations for the new shopping center.

This contamination was concentrated away from areas where previous soils bores had been excavated. Emergency excavation was conducted in April 1987 to remove hydrocarbon contaminated soil over 1,000 ppm. The remaining soil was to be treated insitu (see below).

GTI again conducted above ground Enhanced Natural Degradation on the soil, as in Phase I treatment. Samples were again taken periodically to determine the progress of remediation (Appendix F).

The analyses of soil samples indicated that the hydrocarbon contamination in the soil had been reduced to acceptable levels by the beginning of September, 1987. The soil was then transported to West Contra Costa County Landfill in Richmond, CA. for disposal.

Insitu Soil and Groundwater Remediation

In May of 1987, Greg Zentner of the San Francisco Bay Regional Water Quality Control Board gave BEI permission to investigate the feasibility of treating the remainder of the subject site by an insitu method of remediation, so that additional soil would not have to be excavated. BEI interviewed prospective contractors and put out a formal request for proposals. In September of 1987, (CytoCulture International was awarded a contract to conduct an insitu bioremediation program at the subject site.

Because CytoCulture's proposed treatment system represents a new technology in the State of California, the San Francisco Bay Regional Water Quality Control Board referred the project to the Alternative Technologies Section of the California State Department of Health Services. CytoCulture presented the

Alternative Technology Section with their Operation Plan in December 1987 for DOHS approval (Appendix G). CytoCulture was given a verbal approval by Fred Tornatore of Alternative Technology for implementation. Work began on system installation in July of 1988 and continued through December of 1988.

As part of the phased approach, the bioremediation system would discharge water first to the East Bay Municipal Utility District (EBMUD). EBMUD gave permission for this charge in January 1989 (Appendix G). This discharge began in March 1989. The discharge would then be monitored to assure the projected treatment levels were being achieved. Once acceptable treatment has been demonstrated, approval would be sought from DOHS to reinfiltrate treated water into the soils of the subject site to remediate the soils. This approval is currently being sought by CytoCulture so that reinfiltration can begin in May of 1989.

Once this approval has been obtained the work is estimated to take 10 months to one year and 10 months to complete. The cost has been estimated to be $350,000.00.

P.I.E. Nationwide, a previous owner of this facility, has acknowledged its responsibility to fund the clean up of hydrocarbon contamination at the subject site.

IX. CONCLUSIONS AND RECOMMENDATIONS

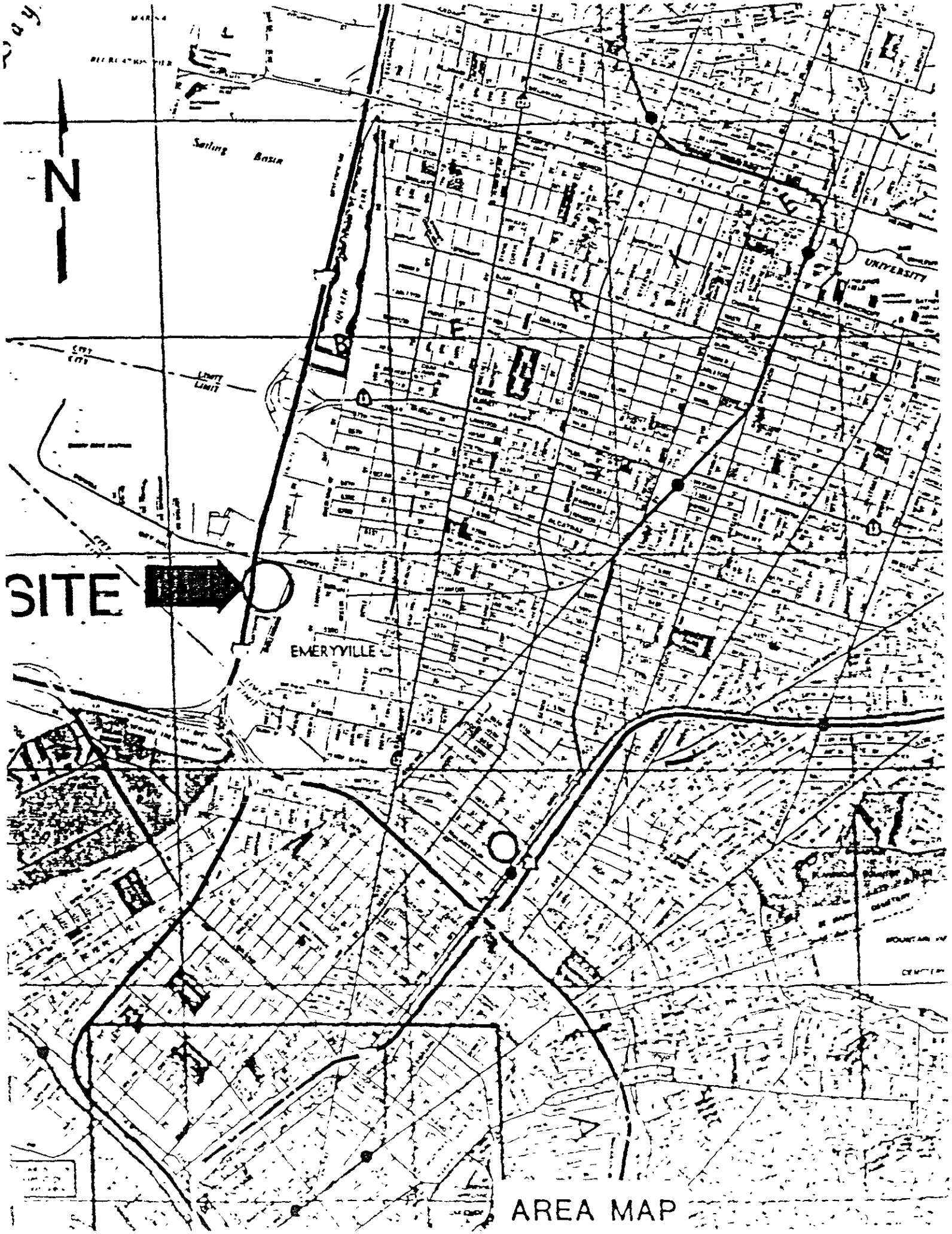
Based upon the above-mentioned observations and analytical results, Blymyer Engineers concludes the following:

- The site is located in a combined industrial/commercial area of Emeryville, CA.
- Soils beneath the site are composed of fill overlying bay mud typical of San Francisco Bay.
- Total Petroleum Hydrocarbons as diesel, were detected in soils and groundwater in several locations at the site.
- Contamination has migrated off the property to the south.
- Accessible friable asbestos does not exist at the site.
- Historical research indicates that the subject property was part of San Francisco Bay before being developed for use as a truck terminal.
- The site existed as a truck terminal until 1987, when it was converted to its present use as a shopping center.
- Several sites in the vicinity of the subject site have reported contamination incidents.
- An active soil and groundwater remediation system is currently being conducted by P.I.E. Nationwide.

Based on the above conclusions, BEI recommends that four additional groundwater monitoring wells be installed to assess portions of the property not investigated during previous subsurface investigations. The samples from these wells should be analyzed for priority pollutants. The additional wells would be utilized to determine whether contaminated fill had been used to fill the site or whether contamination emanating from off site

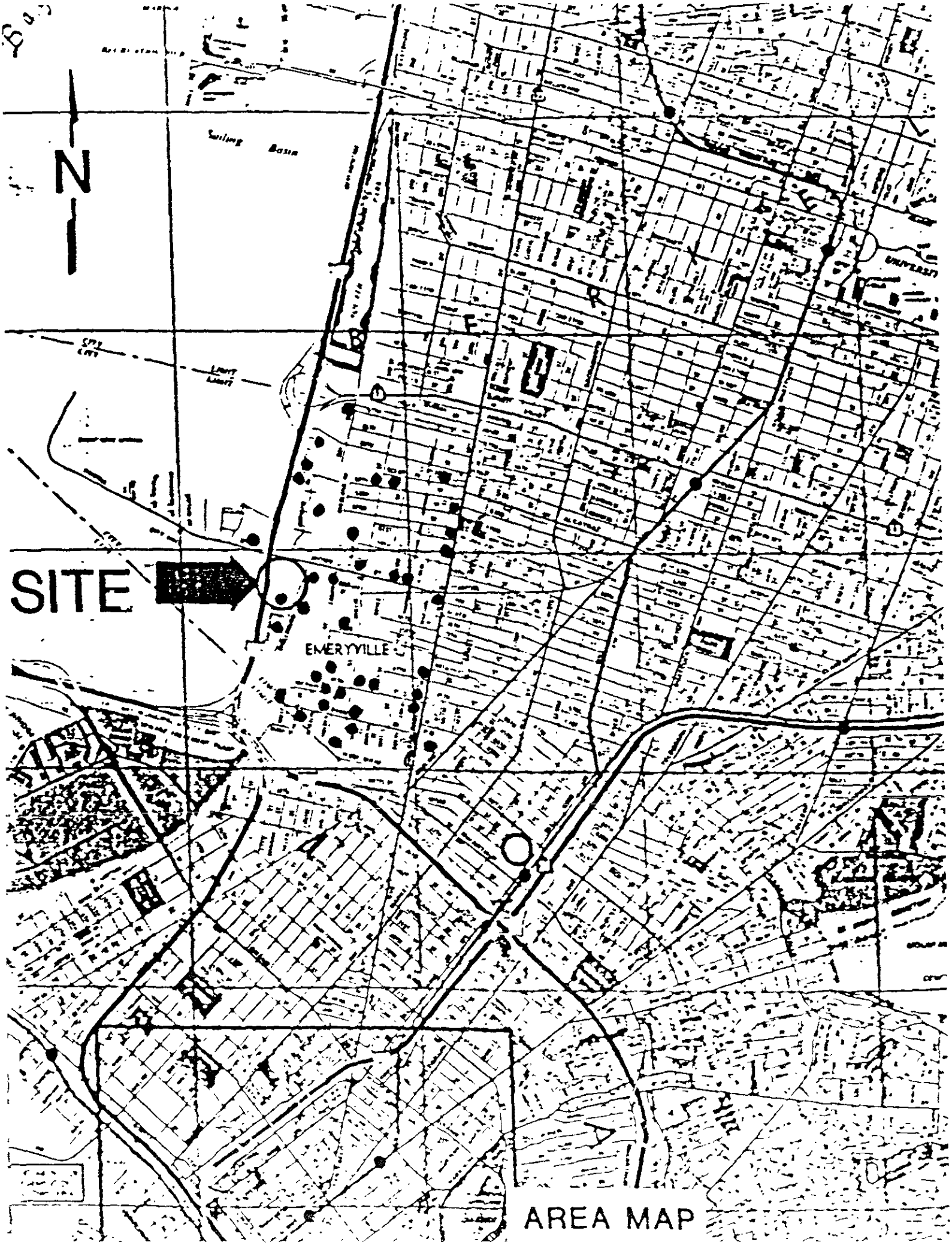
sources was migrating onto the subject property. In addition, it is recommended that all monitoring wells on site be analyzed for priority pollutants.

FIGURE 1



AREA MAP

FIGURE 2



AREA MAP

FIGURE 3

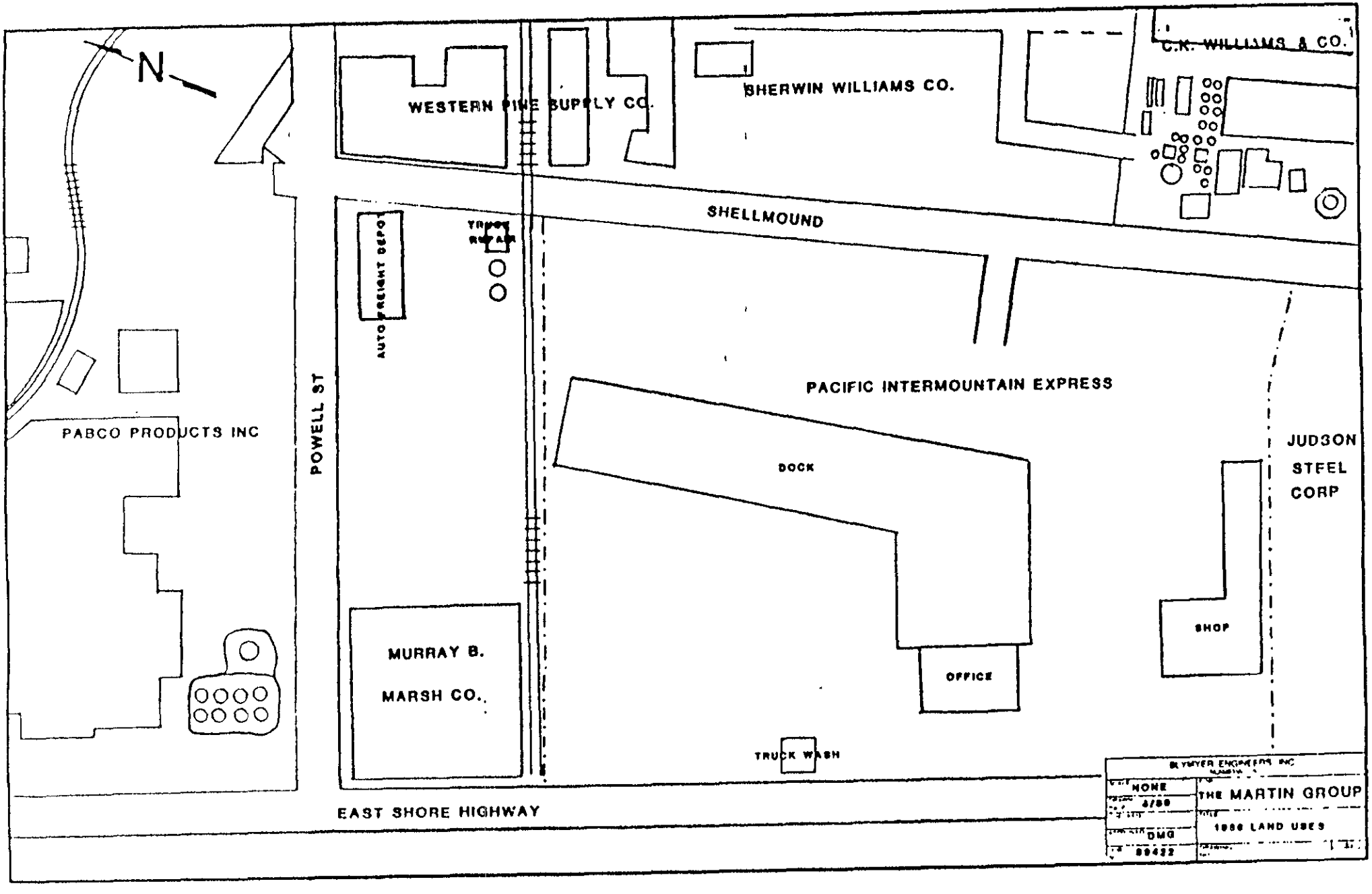
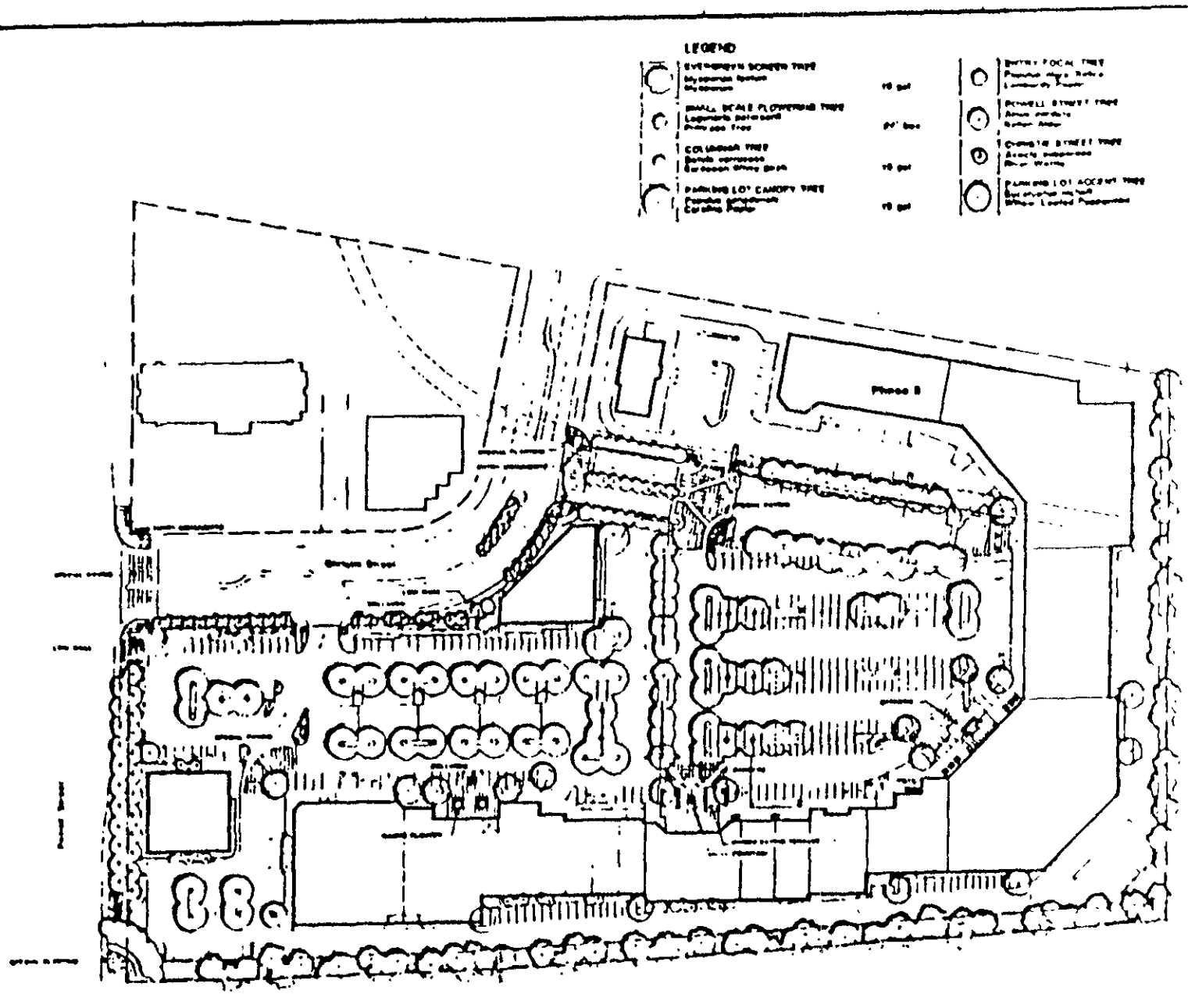

N
WESTERN PINE SUPPLY CO.
SHERWIN WILLIAMS CO.
C.K. WILLIAMS & CO.
SHELLMOUND
AUTO FREIGHT DEPOT
POWELL ST
PABCO PRODUCTS INC
PACIFIC INTERMOUNTAIN EXPRESS
DOCK
OFFICE
SHOP
JUDSON
STEEL
CORP
MURRAY B.
MARSH CO.
TRUCK WASH
EAST SHORE HIGHWAY
NONE
4/88
DMG
89432
THE MARTIN GROUP
1988 LAND USES

FIGURE 4



EASTSHORE CENTER

EMERYVILLE CALIFORNIA

FIGURE 5

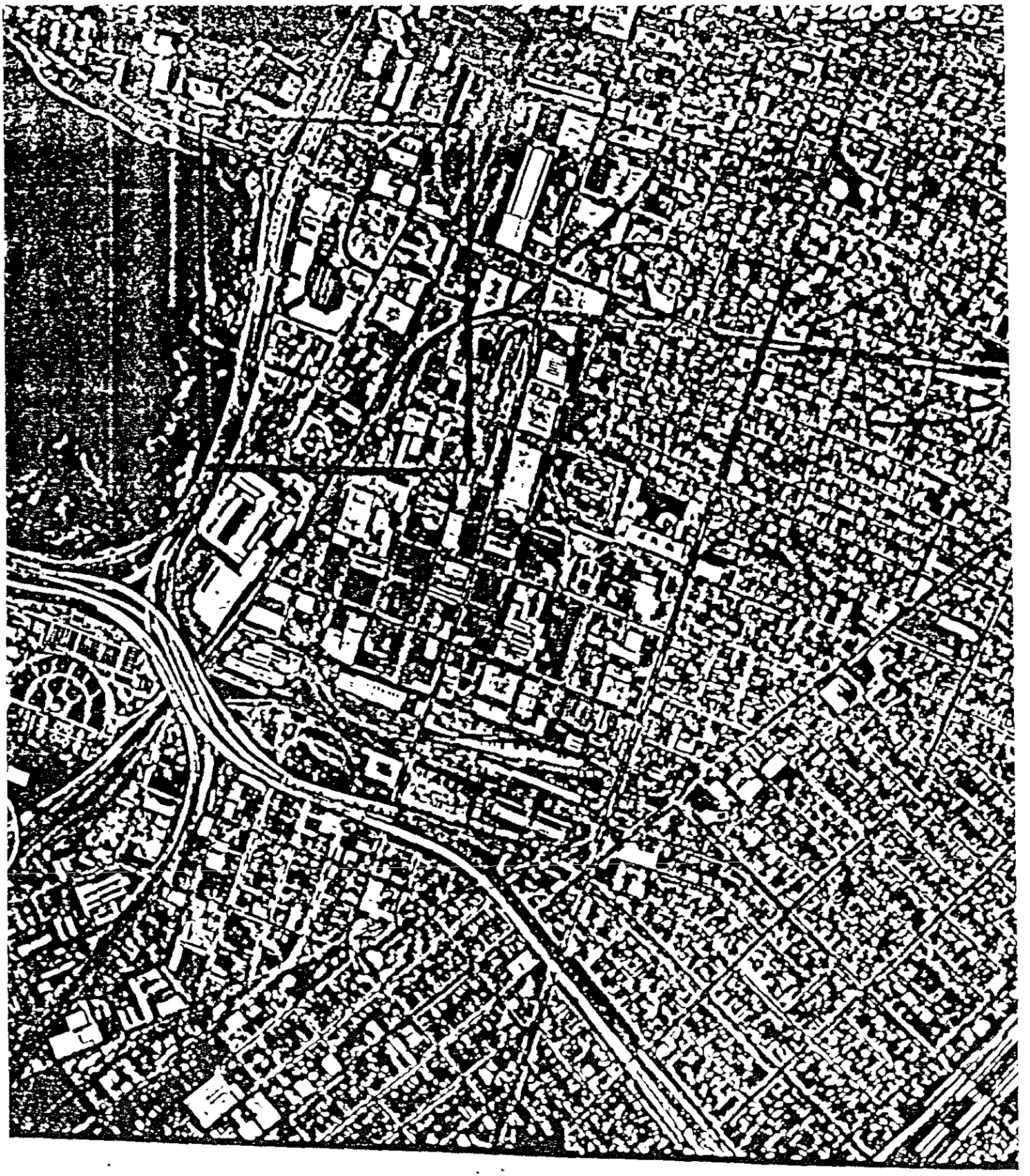


FIGURE 6

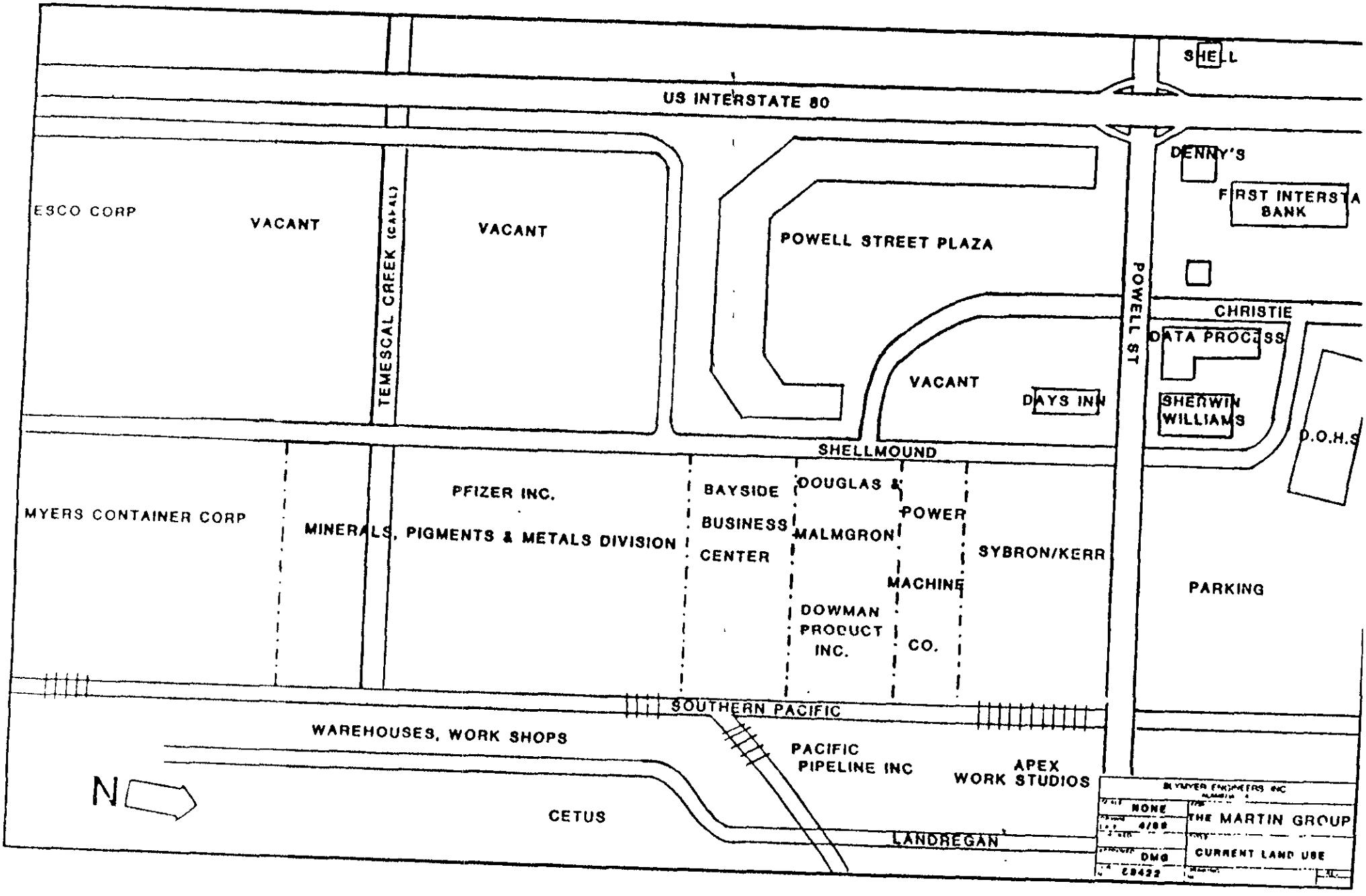

US INTERSTATE 80
SHELL
DENNY'S
FIRST INTERSTATE BANK
ESCO CORP
VACANT
TEMESCAL CREEK (CANAL)
VACANT
POWELL STREET PLAZA
POWELL ST
CHRISTIE
DATA PROCESS
VACANT
DAYS INN
SHERWIN WILLIAMS
D.O.H.S
SHELLMOUND
MYERS CONTAINER CORP
PFIZER INC.
MINERALS, PIGMENTS & METALS DIVISION
BAYSIDE BUSINESS CENTER
DOUGLAS & MALMGRON
POWER
SYBRON/KERR
MACHINE
DOWMAN PRODUCT INC.
CO.
PARKING
SOUTHERN PACIFIC
WAREHOUSES, WORK SHOPS
PACIFIC PIPELINE INC
APEX WORK STUDIOS
N
CETUS
LANDREGAN
NONE
THE MARTIN GROUP
4/88
DMG
CURRENT LAND USE
28422

FIGURE 7

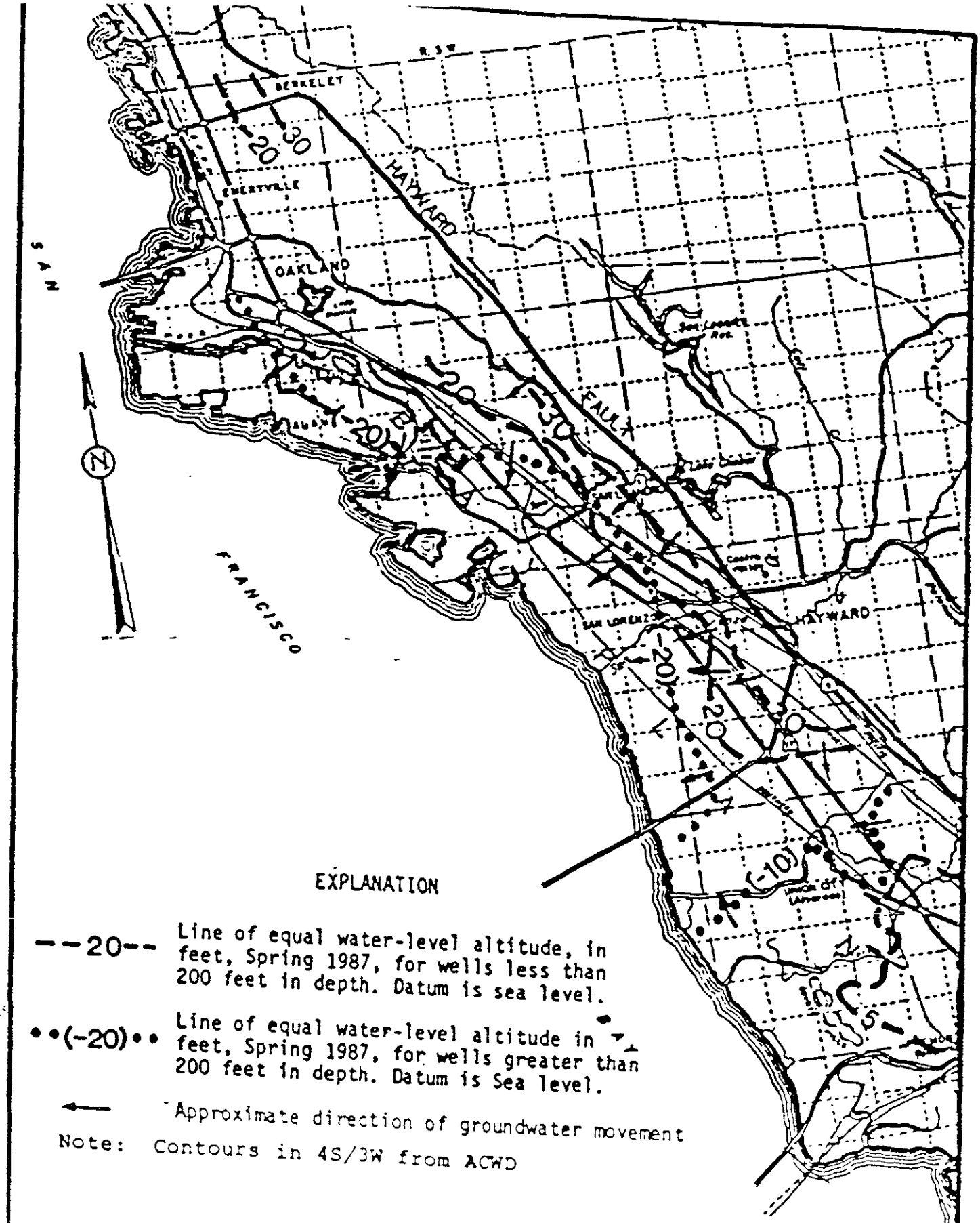


FIGURE 12: COMPOSITE WATER LEVEL CONTOUR MAP, SPRING 1987, SHOWING DIRECTION OF GROUNDWATER MOVEMENT.

P★I★E NATIONWIDE

August 5, 1986

Emery 07148

Mr. Thomas J. Gram
East Bay Park Company
5901 Christie Avenue
Suite 403
Emeryville, CA 94608

RE: 5500 Eastshore Highway
Emeryville, CA

Dear Tom:

Please consider this notice of removal of the underground tanks from the referenced property. Enclosed are the results of the initial soil tests made at the time of removal. Per our engineer, the results of additional testing will be received on August 6 and I have requested that the additional test results and his recommendations be hand delivered to your office by Thursday, August 7. I am hopeful this will enable you to waive the soil conditions and proceed with the contract by Friday, August 8.

As outlined in Blymyer's letter, we have committed a total expenditure of $59,496. Depending upon your election to proceed or withdraw, we will forward the appropriate invoices upon their receipt.

Sincerely,

Bob Weaver

Robert W. Weaver
Director of Properties
and Real Estate

RWW:rd

Encls.

cc: John Mangu