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**Final Report
Environmental Assessment and
Phase II Subsurface Soil and
Shallow Groundwater Characterization
Havers Trust
The Barg French Dry-Cleaning Facility
Seattle, Washington
File ID No.: E99-1414-T**

Prepared for: Ms. Cynthia C. Wagner
Union Bank of California as Trustee
Hazardous Materials Section
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Orange, CA 92868

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September 7, 1999

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September 7, 1999
Kleinfelder File Number 60-1996-01

Ms. Cynthia C. Wagner
Vice President
Union Bank of California
Hazardous Materials Section
500 South Main Street, Suite 370
Orange, California 92868

**Subject: Environmental Assessment and
Phase II Subsurface Soil and Shallow Groundwater Characterization
Havers Trust
The Barg French Dry-Cleaning Facility
1929 3rd Avenue
Seattle, Washington
File ID# E99-1414**

Dear Ms. Wagner:

Transmitted with this letter is Kleinfelder's draft report summarizing the findings of our environmental assessment and subsurface characterization performed at the above-referenced property. The characterization work was performed at the request of Union Bank of California to provide additional information concerning previously identified environmental issues associated with the property.

Kleinfelder appreciates the opportunity to be of assistance on this project. Please contact us if you have any questions or require additional information.

Sincerely,

KLEINFELDER, INC.

Dennis J. O'Neill
Senior Project Manager

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1.0 INTRODUCTION AND BACKGROUND

This report summarizes the findings and presents recommendations developed during Kleinfelder's recent Environmental Assessment and Phase II Subsurface Soil and Shallow Groundwater Characterization performed at the Barg French Dry-Cleaning Facility in Seattle, Washington. As shown in Figure 1, the subject facility is located at 1929 3rd Avenue in the Belltown neighborhood of Seattle. The subject facility occupies a portion of the first floor of a three-story commercial building that was constructed in approximately 1914, and is constructed of brick and masonry over a concrete slab-on-grade foundation. The facility is bordered to the north by a two-story parking structure, to the east by 3rd Avenue, to the south by a retail bookstore, and to the west by an alleyway. Land use in the site vicinity is mostly commercial/retail in character.

According to Mr. Ed Suh (current proprietor of Barg French Dry-Cleaners), Barg Dry-Cleaners began operating at the subject property in 1951. Mr. Suh purchased the business in the late 1980s. At the time of Mr. Suh's purchase, dry cleaning activities were being performed in the northwestern portion of the building in a two-stage dry cleaning unit requiring the hand-transfer of clothes between the washing and drying portions of the machine. In the early 1990s, Mr. Suh removed the two-stage unit and replaced it with a single-stage unit not requiring the transfer of clothes (Figure 2). Tetrachloroethylene (also known as: perchloroethylene, PCE, or simply, "Perc") was, and still is, the dry cleaning solvent being utilized in the business.

In June 1999, a Phase I and Limited Phase II Environmental Site Assessment was previously completed of the subject property by another consultant, Websters, Inc. As part of this previous assessment, one soil boring was advanced to a depth of approximately 7½ feet below grade in the vicinity of the currently present dry cleaning machine. A soil sample collected at a depth of five feet in the boring was found to contain 2,200 parts per billion (ppb) PCE, exceeding the Method A Cleanup Level established in Washington State Department of Ecology's Model Toxics Control Act (MTCA) of 500 ppb.

Based on the results of the previous environmental assessment, Union Bank of California requested additional environmental assessment and subsurface investigations of the site. As requested, Kleinfelder's scope of work included reconnaissance of the site to develop a complete description of current site conditions, a review of regulatory agency records, and subsurface investigations in order to characterize subsurface soil and shallow groundwater conditions.

2.0 OBJECTIVE AND SCOPE OF SERVICES

The primary objective of this Environmental Assessment and Phase II Subsurface Soil and Shallow Groundwater Characterization was to further evaluate the potential for the presence PCE on the subject property.

In order to accomplish this objective, we performed the following scope of services:

- Prepared a Site Specific Health & Safety Plan regarding implementation of Phase II investigations.
- Reviewed existing available files pertaining to the subject property at the City of Seattle Building Department, City of Seattle Fire Department, King County Health Department, and Puget Sound Air Pollution Control Agency (PSAPCA).
- Completed four soil borings in the vicinity of the former and active dry cleaning equipment, floor drains, and associated plumbing lines on the subject property (five borings were actually completed).
- Collected and analyzed representative soil samples from various depths in the borings for analysis for PCE by EPA Method 8021B.
- Assessed the potential presence of shallow groundwater contamination.
- Prepared this Report summarizing the methodology and findings of the assessment, and providing recommendations for additional work, if necessary.

It should be noted that part of our initial scope of services included the collection of perched or shallow groundwater samples if encountered during our field-sampling program. Although evidence of perched groundwater conditions was encountered during our subsurface sampling program, sufficient groundwater was not available to collect a groundwater sample.

3.0 RECORDS REVIEW AND INTERVIEWS

Public records and individual's knowledge about historic site practices are sources of information that may be helpful in evaluating activities that may have contributed to contamination of soil and/or groundwater. Information collected from these sources is presented below in this section.

3.1 Seattle Fire Department

Kleinfelder contacted the Seattle Fire Department regarding any fire or hazardous materials incidents that may have occurred at the subject property, as well as the possible presence of underground storage tanks. No records were found of any hazardous materials response, "fire loss" incidents, or the presence of any USTs.

3.2 Seattle Building Department

A Kleinfelder representative reviewed available information pertaining to the subject site at the City of Seattle Building Department. Copies of selected records are included in Appendix A. Building department files reveal the location of the sewer connection and some water supply pipelines connected to the overall building. Evidence of the sewer lines and/or floor drains associated with the Barg French Dry Cleaning portion of the building were not shown on the plans. Various construction details dating from when the building was first constructed were also reviewed. Of particular note, building department records confirmed that the building was originally constructed with a wooden floor in early 1900s.

3.3 Puget Sound Air Pollution Control Agency (PSAPCA)

File records pertaining to the subject facility were obtained from the Puget Sound Air Pollution Control Agency (PSAPCA). Copies of selected file records are provided in Appendix B. A Notice of Construction for a RenZacci Model 380 dry cleaning machine, the machine currently present at the site, was issued in 1997. This self-contained machine reportedly stores and utilizes approximately 40 gallons of PCE, and employs a refrigerated condenser to control air emissions. According to PSAPCA records, the RenZacci machine replaced a similar self-contained dry-cleaning machine manufactured by Columbia. Based on information provided by Mr. Suh, the Columbia machine was installed in 1990 to replace the two-stage machine that had historically operated at the site.

3.4 Seattle – King County Health Department

The Seattle-King County Health Department was contacted regarding any drinking water supply wells, septic systems, or solid waste disposal facilities on or near the subject property. The Department did not identify any records concerning the subject property, or items of concern in the immediate vicinity.

3.5 Washington State Department of Ecology

The Department of Ecology has jurisdiction over storage, handling and disposal of hazardous materials. We contacted the Department of Ecology regarding pertinent information associated with the subject property. According to Ms. Sally Perkins of the Department of Ecology, there is no information on file for the above-referenced subject property.

3.6 Site Reconnaissance

Prior to the conducting subsurface investigations, Kleinfelder conducted a site visit of the subject facility. The purpose of the visit was to look for visual indications of possible soil and/or groundwater contamination resulting from past or current site use, and to determine the location of investigative borings. During the site visit, Kleinfelder was escorted by Mr. Ed Suh, proprietor of the Barg facility.

During our visit, spent PCE solvent was observed being stored in a 15-gallon plastic container in the mezzanine area situated above the southern side of the store. According to Mr. Suh, approximately 15 gallons of the spent solvent is generated every six weeks. The spent solvent is collected in a metal catch basin located adjacent to the dry cleaning unit and periodically transferred to the plastic 15-gallon plastic container. Approximately every six weeks, the spent solvent is collected by Safety-Kleen, Inc., and transferred to an appropriate recycling facility. Although Mr. Suh indicated that records of hazardous waste disposal are available for review, no information was provided to Kleinfelder for review.

A concrete below-grade vault was observed on the floor of the compressor room located in the extreme southeast corner of the facility. According to Mr. Suh, the vault has been used to capture blow down from a boiler that was previously located in this room. Moderate dark staining was observed on the concrete floor within the boiler room of the storage room and near the concrete vault.

The single dry-cleaning machine present in the facility, the previously mentioned RenZacci machine, was observed on the southern side of the store. The system is mounted on the concrete floor, which exhibited a moderate amount of dark staining in the area of the machine. Mr. Suh indicated that he installed the concrete floor to accommodate the dry-cleaning units. Some areas of the original wood flooring were observed on the south side of the building. No evidence of any floor drains was observed in the vicinity of the drain cleaning operations, however, a single floor drain was observed in the bathroom located in extreme southwestern corner of the facility. According to Mr. Suh, the previous dry cleaning equipment was located at the same location as the current equipment (Figure 2).

Evidence of sewer lines and other underground utilities that could be potential sources or conduits for site contaminants were not observed beneath the Barg French Dry Cleaning portion of the building. One floor drain was observed in the southwest portion of the building during our site visit; however, no evidence of this floor drain or underground piping connecting this drain to the overall sanitary sewer system was observed on the plot plans reviewed at the building department. The electric and natural gas lines are exposed above grade throughout the building. No evidence of underground storage tanks (USTs) or aboveground storage tanks (ASTs) was observed on the subject property during our file review.

3.7 Review of Geological Data

The subject property is located in an area that has been glaciated at least six times in the past two million years. Until the early 1900s, topography in the areas was largely the result of the last glacial advance, known as the Vashon Till. Native soils in the area are expected to consist of glacial till, a concrete-like mixture of silt, sand, gravel and clay. However, the subject site is in the area of the so-called First Denny Regrade Project that occurred in 1908, which involved extensive excavation of native soils. Therefore, the area of the subject property is depicted on geological maps as modified land, mainly cut (Galster and Laprade, 1991).

Review of the U.S. Geologic Survey (USGS) 7.5-minute series topographic map for the Seattle South Quadrangle (USGS, 1949) indicates that the property is located at an elevation of approximately 130 feet above mean sea level (MSL). The topography in the vicinity of the property slopes to the southwest at an average grade of about 3 percent for a distance of approximately a ½-mile where Puget Sound is present.

Groundwater is not believed to occur within 40 feet below ground surface; however, a limited volume of localized perched groundwater was detected at approximately 8 to 9 feet below ground surface. The localized perched groundwater appears to be accumulating near the contact between the less dense fill material and the underlying highly glacial till. In general, the volume of perched groundwater was relatively limited. As part of the well installation program, standing localized groundwater (approximately 500 ml) was removed and the well was dry. The well was permitted to recharge for approximately 4 hours; however, no groundwater was available for testing. Based on local topography, the direction of groundwater flow, as well as the flow direction of uncontrolled surface water and perched groundwater, is expected to follow local topography, toward the southwest (toward the Puget Sound).

4.0 FIELD PROCEDURES

The Subsurface Soil Characterization described herein was conducted in general accordance with Ecology's Voluntary Cleanup Program and other applicable local, state and federal guidelines/regulations.

4.1 Health and Safety Plan

In accordance with federal Occupational Safety and Health Administration (OSHA) and state regulations, a site specific Health and Safety Plan was developed for the field activities completed at the subject property. All field personnel reviewed the plan and implemented the procedures while conducting the on-site field activities.

4.2 Subsurface Soil Sampling

On August 14, 1999, subsurface soil sampling was performed at the subject property. During that period, the dry cleaning equipment was not operating. The subsurface soil sampling program consisted of completing a total of five exploratory borings (SP-1 through SP-5) using a hand-operated percussion-hammer drilling unit operated by Sonic Soil Sampling (Sonic) of Vancouver, British Columbia, Canada. Prior to advancing the boring, the overlying concrete was cored by Sonic using an electric concrete corer affixed with a diamond bit. A Kleinfelder scientist was present during the drilling to observe and document soil conditions. The unit was positioned at the desired location, and a split-spoon sampler connected to metal extension rods was advanced. The sampler was removed from the boring and opened, the contents were inspected, and soil samples were collected. Following collection of the representative soil

samples from each bore hole, the bore holes were back filled with bentonite, chips, hydrated and cap (approximately 4 to 6 inches thick) with concrete flush with the surrounding ground surface

Probe holes were advanced to depths ranging from 5½ to 14 feet below ground surface. Soil was collected continuously in each probe hole using a split-spoon sampler of 30-inch length (although the entire length of the spoon was not always driven). Collected soil was field screened for contamination, and soil types were classified according to the Unified Soil Classification System. Field sampling protocol, decontamination procedures, and sample handling procedures were performed in general accordance with EPA and Ecology protocol. Field procedures are summarized in Appendix C.

Borings were completed in the vicinity of the dry-cleaning machine (Borings SP-1 and SP-3), between the machine and the reported location of the former dry-cleaning machine (SP-2 and SP-4), and adjacent to the floor drain in the bathroom (SP-5). Boring locations are depicted in Figure 2.

In order to be able to penetrate more dense material, continuous coring was performed. Soil samples were collected at regular intervals in an effort to bracket the extent of any contamination. Kleinfelder's representative documented soil conditions and visually inspected for soil staining or discoloration. "Head-space" screening was also performed for the presence of volatile organic compounds by using a photoionization detector (PID). PID readings are shown on the Boring Logs presented in Appendix D. Selected soil samples were transported to Transglobal Environmental Geosciences (TEG) of Redmond, Washington for laboratory analysis.

4.3 Groundwater Sampling

During subsurface investigations, perched groundwater was encountered at a depth of approximately 8 to 9 feet below ground surface. A monitoring well was installed in Boring SP-1, but we were unable to collect a groundwater sample due to the limited volume of water available and limited recharge. No evidence of groundwater contamination was observed in the limited volume of water extracted from the well during the installation process.

As stated earlier, regional groundwater in the site vicinity is located at depths greater than 40 feet bgs. Portable drinking water is provided by METRO, which is collected from a series of reservoir located in the Puget Sound Area. There are no domestic water wells within a one-mile radius of the subject property.

5.0 CHEMICAL ANALYTICAL PROGRAM

Selected soil samples were submitted to TEG Laboratories, a state-certified laboratory. Each sample was analyzed for PCE by EPA Method 8021B. Quality Assurance/Quality Control (QA/QC) for the presented scope of work included generally accepted procedures for sample collection, storage, tracking, and documentation. All sampling equipment was washed and rinsed prior to the collection of samples. All samples were labeled with a sample number, date, time of collection, and sampler name. The samples were placed in an ice chest for storage and transport to the project laboratory under chain-of-custody documentation. Detailed information regarding the field sampling protocol and decontamination procedures are presented in Appendix C. Copies of the boring logs and PID readings are presented on the Boring Logs in Appendix D. Copies of the laboratory-reported analytical results are included in Appendix E, and summarized in Table 1.

In general, soil samples that were suspected of having the highest potential for being contaminated were selected for analytical testing (e.g., exhibited elevated head-space readings, or were collected from depths known to be contaminated based on previous investigations). A minimum of two soil samples were collected from each boring at various depths in an effort to assess the vertical extent of PCE. The sampling depths are presented on Table 1.

6.0 SUBSURFACE FINDINGS AND ANALYTICAL RESULTS

As stated above, borings were advanced to depths ranging from 5½ to 14 feet below the ground surface, whereupon the borings were terminated due to refusal of the dense soil. The total depths of the five borings were as follows: SP-1 was advanced to a depth of approximately 14 feet below the ground surface where refusal was encountered. Boring SP-2 was advanced to a depth of approximately 10 feet below the ground surface. Boring SP-3 was advanced to a depth of approximately 10 feet below the ground surface. Boring SP-4 was advanced to a depth of approximately 9 feet below the ground surface, and Boring SP-5 was advanced to a depth of approximately 5.5 feet below the ground surface.

6.1 Subsurface Conditions

Subsurface soil conditions were relatively consistent in the five borings. Below 4 to 5 inches of concrete and wood flooring, soils consisted of light gray, poorly graded fine sand, extending to a depth of approximately 8 to 9 feet below the ground surface. This material is interpreted to be imported fill. The sand was dry for the upper-most few feet until becoming moist. Wet, saturated conditions associated with a localized perched groundwater was encountered at approximate depths ranging from 8 to 9 ½ feet below the ground surface in Borings SP-1 through SP-4. Immediately below the zone of perched groundwater, a confining layer consisting of moist, very dense gray silt (glacial till) was encountered. This silt material was found to extend to the total depth of 14 feet in Boring SP-1, although a layer of interbedded wet sand approximately 4 inches thick was encountered at a depth of approximately 10 feet in this boring. This material is interpreted to be glacial till.

6.2 Analytical Results

Concentrations of PCE above the MTCA Method A Cleanup Level of 500 ppb were detected in soil samples collected from all five soil borings (Table 1 and Figure 2). Detected concentrations ranged from 630 ppb in the sample collected from a depth of 5 feet in Boring SP-5 (near the floor drain in the bathroom), to 8,900 ppb in the sample collected from a depth of 7 feet in Boring SP-2 adjacent to the present dry-cleaning machine. For the borings completed in the vicinity of the dry-cleaning machine (Borings SP-1 through SP-4), PCE concentrations generally tend to increase with depth to about 7 to 8 feet below the ground surface, then decrease in concentration with continued depth. For example, soil boring SP-1 was completed immediately adjacent to the previous soil boring (S-1) that exhibited elevated concentrations of PCE ranging from 10,000 ppb near the surface to 2,200 ppb at approximately 5 feet bgs. These PCE concentrations are well above the MTCA Method A cleanup level of 500 ppb. Soil samples collected in soil boring SP-1 revealed PCE concentrations decreased from 2,600 ppb at 9½ feet to non-detectable concentrations at 12½ feet below ground surface. The 12½-foot sample was collected approximately 3 feet into the glacial till and thus indicated that the PCE has not migrated significantly into the underlying denser glacial till.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analytical results of our subsurface investigations, PCE impacted soil was detected in shallow soils (less than 12½ feet bgs) in the vicinity of the dry-cleaning machine at concentrations above the MTCA Method A cleanup level of 500 ppb. The PCE soil contamination appears to reach maximum concentration at approximately 7 to 8 feet depth below the facility, or about 1½ feet above the zone where a limited amount of localized perched groundwater was encountered. These results suggest that PCE contamination in the vadose zone has not reached a degree of saturation where capillary forces in the fine-grained sand overlying the localized perched groundwater have been overcome. We believe the PCE contamination has likely spread laterally a limited extent within the capillary-fringe above the localized perched groundwater. The PCE contamination appears to be limited in vertical extent and has not migrated significantly into the denser glacial till at depths greater than 12 feet below the ground surface.

Although the vertical extent of the soil contamination appears to be limited to soils above the dense glacial till, the lateral extent of the contamination has not been fully determined. We recommend additional subsurface soil samples should be collected to further assess the lateral extent of the PCE contamination. Determining the lateral extent of the contamination will be necessary for several reasons: (1) to pursue a No Further Action (NFA) determination from Ecology, (2) to estimate the volume of impacted soil (3) to assess potential third-party liabilities associated with offsite migration.

8.0 LIMITATIONS

Our work was intended to provide an assessment of possible contamination of soil and groundwater on the subject property. However, the work was not designed to identify all potential concerns or to eliminate all risk associated with the subject property. Even the most rigorous of professional assessments may fail to identify all existing conditions. The work will not provide a guarantee regarding site contamination and may not generate sufficient data to accurately define the lateral and vertical extent of contamination.

Property activities and regulations beyond Kleinfelder's control could change at any time after the completion of our investigations. Therefore, Kleinfelder's observations, findings and opinions can be considered valid only as of the date of the investigations and at the locations where samples were collected and tested.

Our report may be used only by the client and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on site and off site) or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use the generated report shall notify Kleinfelder of such intended use by executing the "Application for Authorization to Use" included as Appendix F to this report. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release Kleinfelder from any liability resulting from the use of the report by any unauthorized party.

No warranty, express or implied, is made.

9.0 REFERENCES

Galster, Richard W., and LaPrade, William T., 1991, Geology of Seattle, Washington, United States of America, bulletin of the association of engineering geologists, College Station, Texas, Volume XXVIII, Number 3, August.

U.S. Geological Survey (USGS), 1949, revised in 1968 and 1973, 7.5-minute topographic map of Seattle South Quadrangle, Washington: Denver, Colorado, scale 1:24,000.

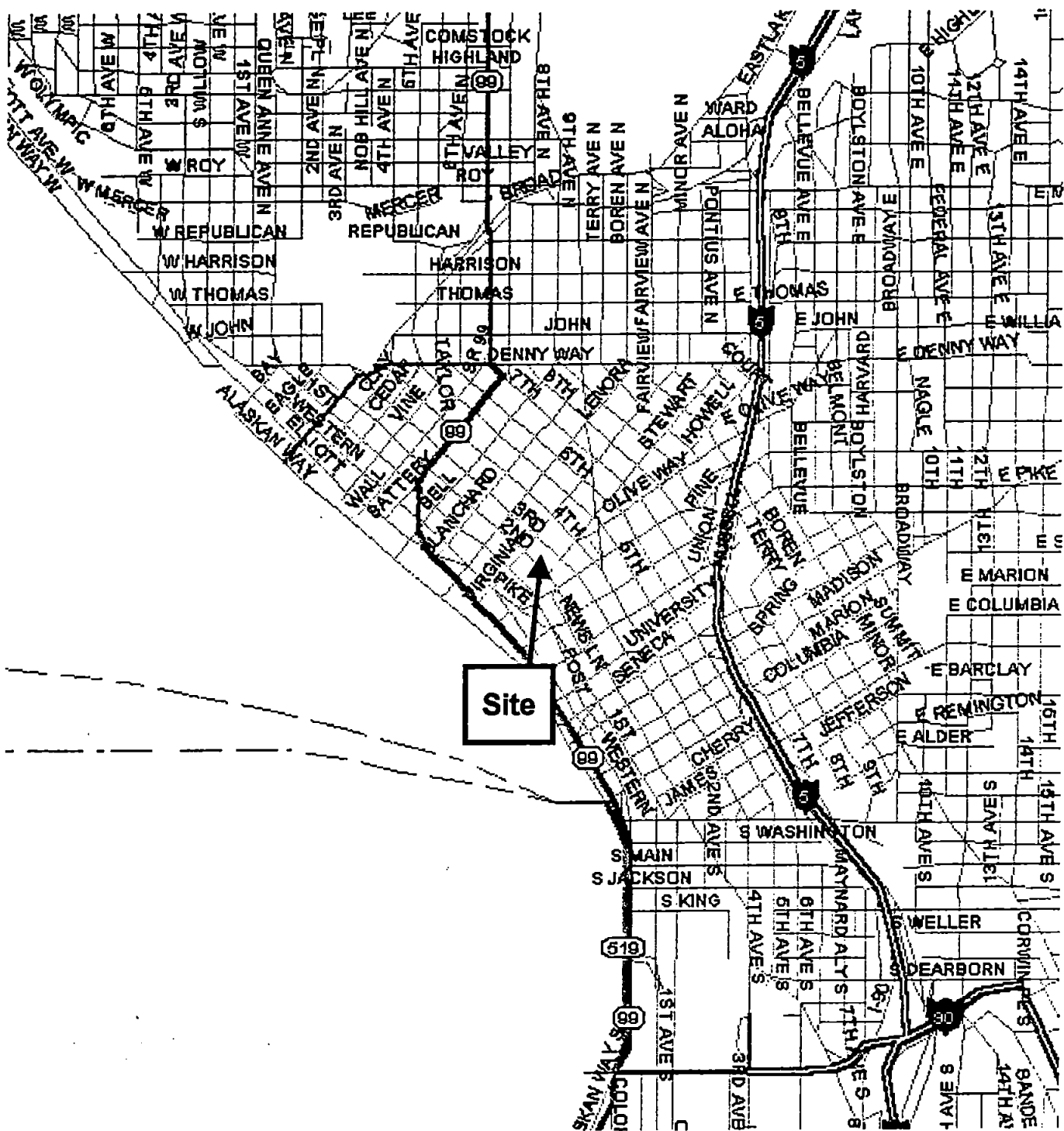
Washington Department of Ecology, 1996, The Model Toxics Control Act cleanup regulation, chapter 173-340 WAC: Olympia, Wash., Publication No. 94-06, January.

Websters' Inc., 1999, Phase I ESA, Limited Phase II ESA, and Asbestos "Good Faith Investigation", 1929 3rd Avenue Building, Seattle, Washington, report prepared for Mr. Stuart Silk, Stuart Silk Architects, June.

TABLE 1**SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS
THE BARG FRENCH DRY-CLEANING FACILITY**

SAMPLE ID	DEPTH (feet bgs)	PID Reading	PCE (ppb)
SP-1	9 ½	ND	2,600
SP-1	12 ½	ND	<50
SP-2	2 ½	ND	3,800
SP-2	7	500	8,900
SP-2	10	TRACE	1,800
SP-3	4 ½	ND	5,200
SP-3	9	ND	3,500
SP-4	3	300	4,400
SP-4	7	80	4,400
SP-4	9	ND	1,300
SP-5	5	ND	630

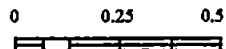
Notes: The MTCA Method A Cleanup Level is 500 ppb PCE.
The Sample ID consists of the boring designation with the depth of a sample.
PCE = perchlorethylene
ppb = parts per billion (equivalent to ug/kg)
<50 = PCE was not found at a concentration exceeding the reporting limit shown.
ND = Not Detected



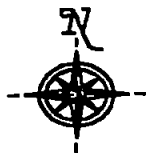
Site

Reference: Delorme Street Atlas USA Version 4.0

APPROXIMATE SCALE



1 inch = 0.5 miles



PROJECT NO. 60-1996-01

August, 1999

Site Location Map
Barg French Dry - Cleaning Facility
 1929 3rd Ave
 Seattle, Washington

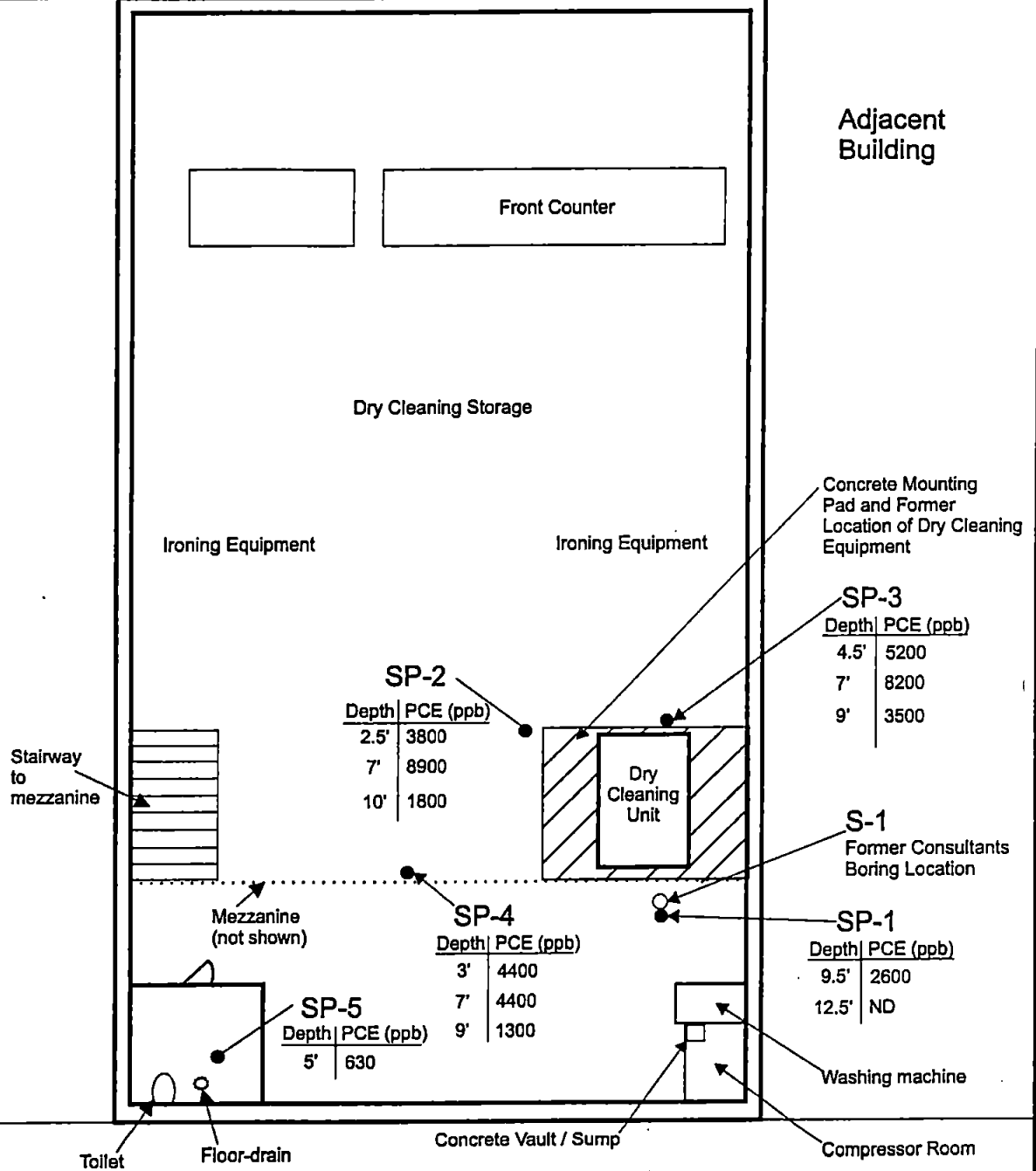
FIGURE

1

3rd Ave.

Adjacent Building

Parking Structure



Legend

PCE = Perchloroethylene
ppb = parts per billion (or ug/kg)

Alleyway



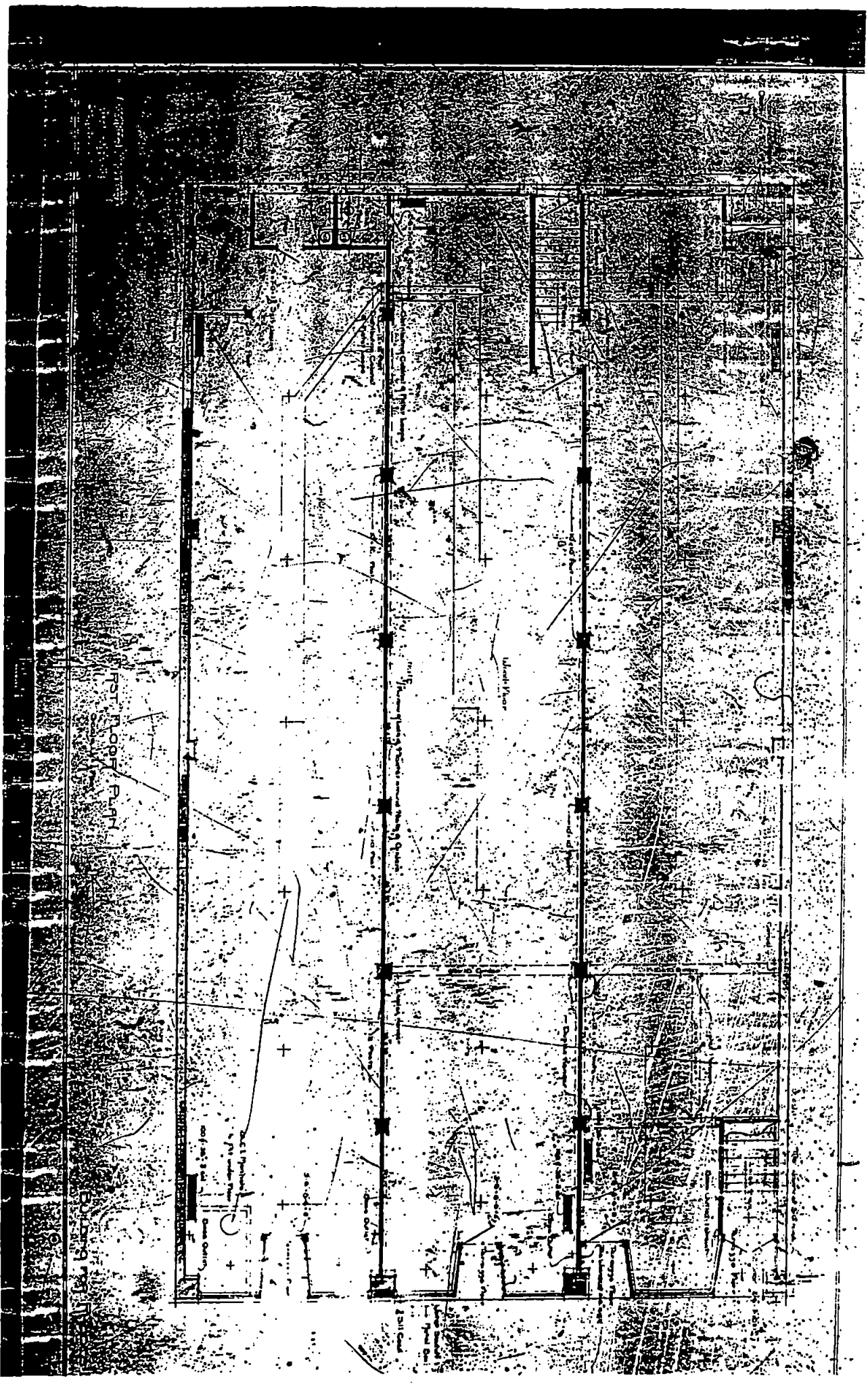
Plot Plan Dpicting Sample Locations
Barg French Dry - Cleaning Facility
1929 3rd Ave
Seattle, Washington

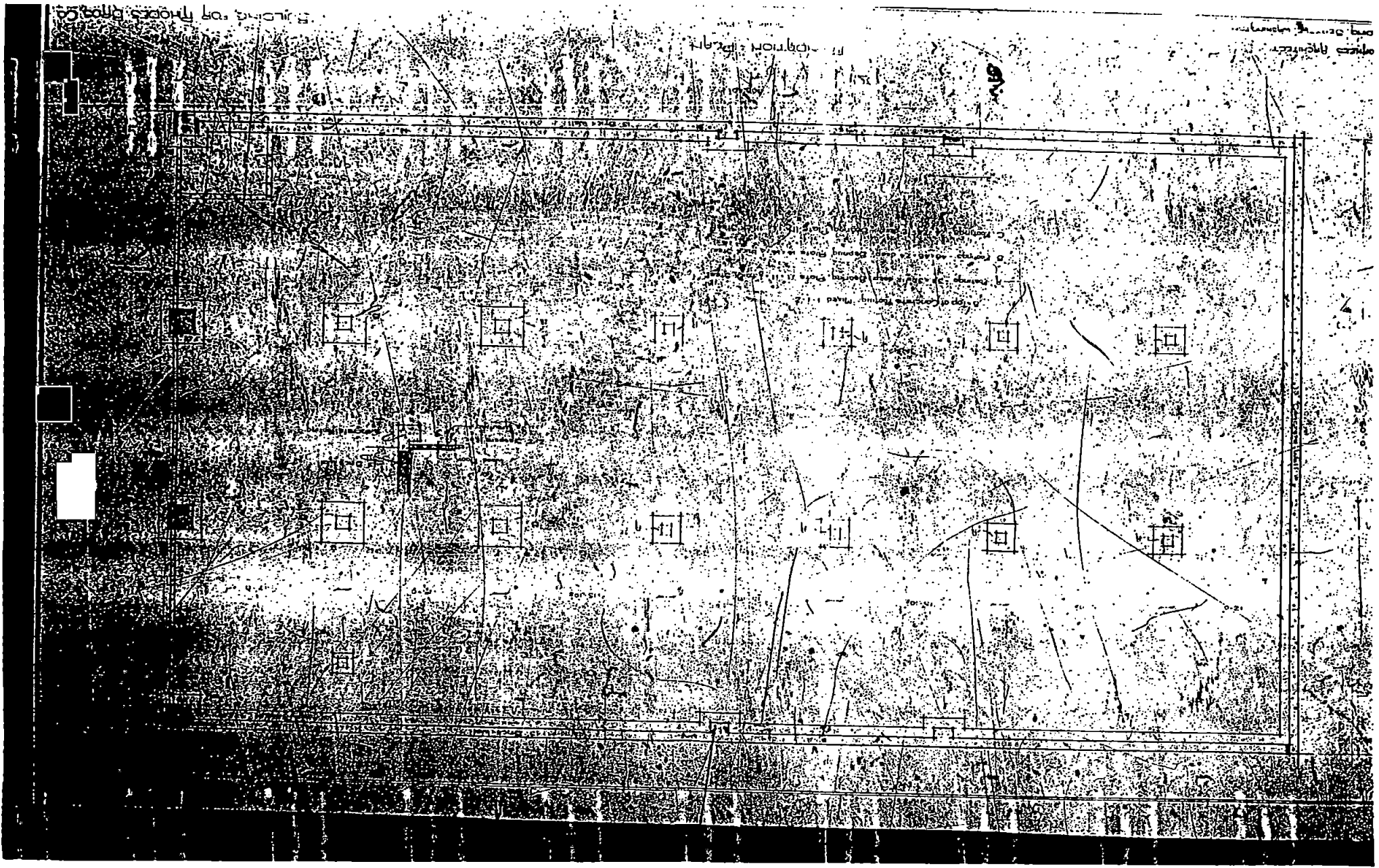
FIGURE

2

PROJECT NO. 60-1996-01

September, 1999



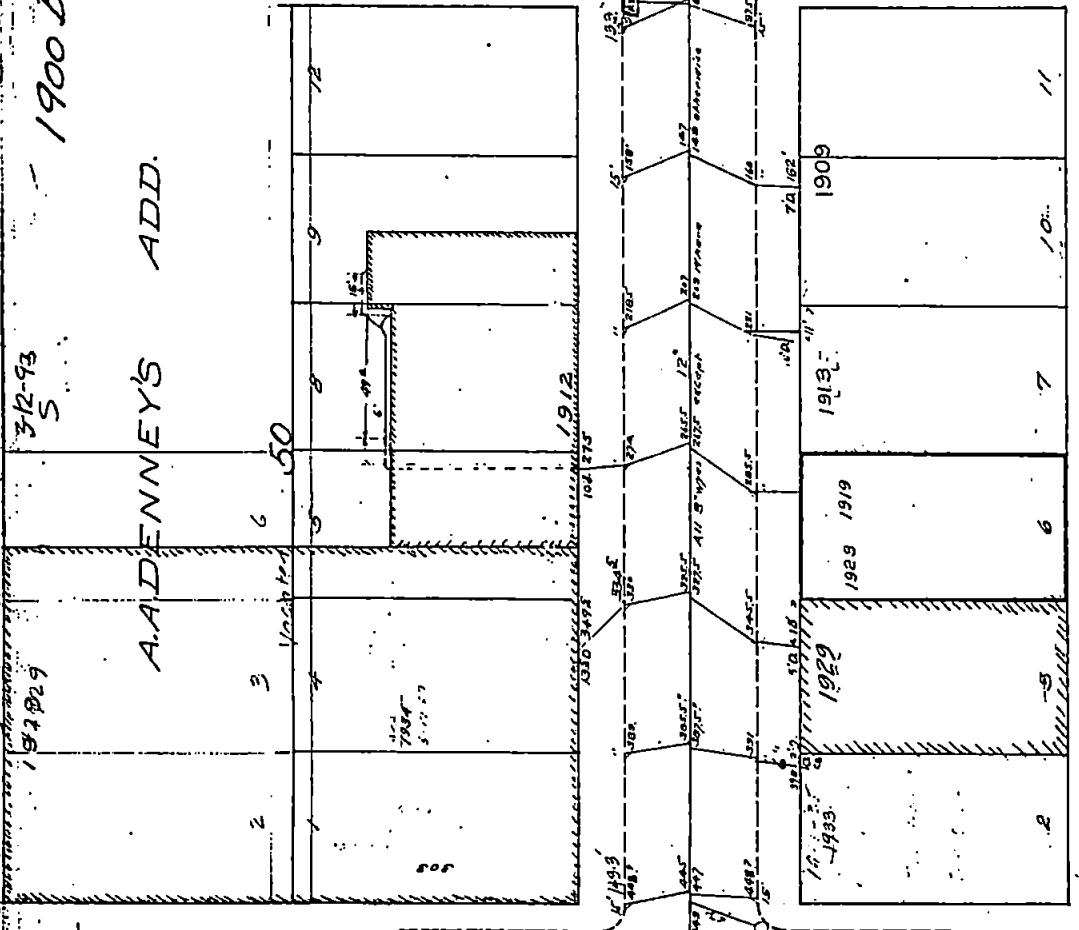


1900 Block 3RD AVENUE

312-93
S

A. ADENNEY'S ADD.

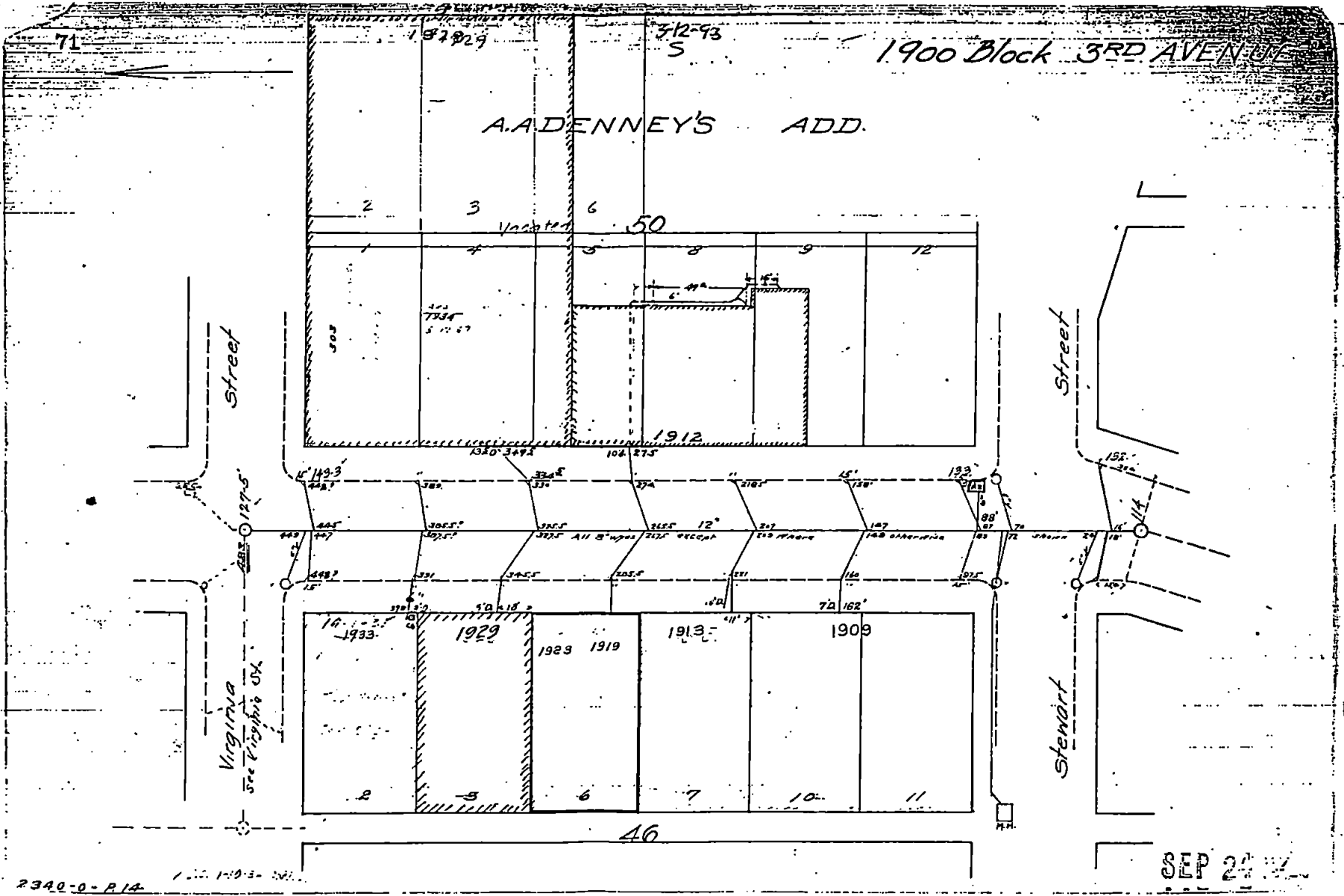
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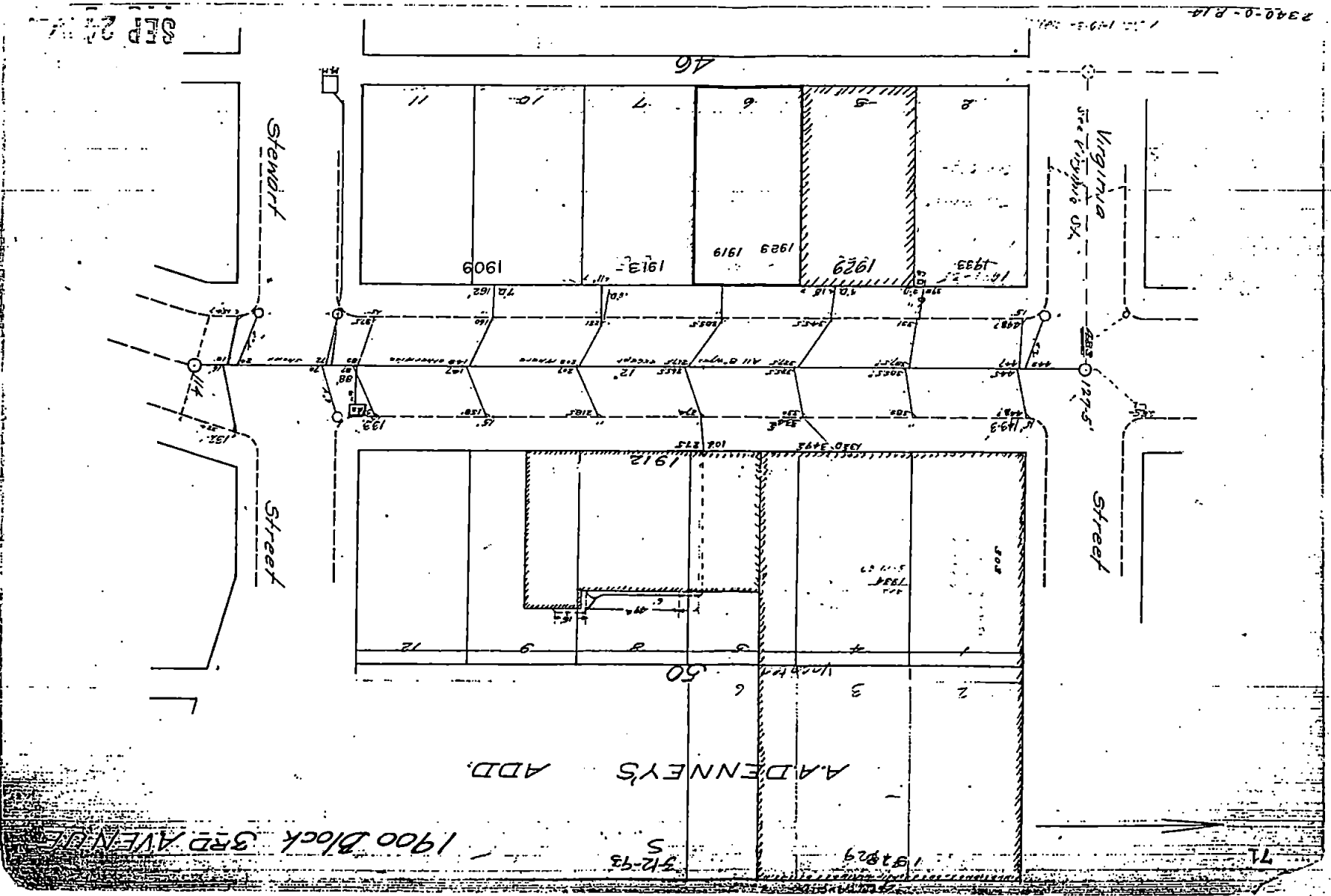
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2340-0-2-14



2340-0-R-1A

CA
FM
PB
22



PUGET SOUND AIR POLLUTION CONTROL AGENCY

110 Union Street, Suite 500
Seattle, WA 98101-2038
(206) 689-4014

Registration # 22324

Barg Cleaners
1929 3rd Ave
Seattle, WA 98101

PSAPCA uses Standard Industrial Classification (SIC) codes to categorize your operation. Next year we are considering changing to the North American Industry Classification System (NAICS, 1997) and we would like your help in converting to the new categories.

RECEIVED

Currently we show your SIC code as:

<u>Code</u>	<u>Description</u>
7216	Dry Cleaning Plants

NOV 23 1998
PUGET SOUND AIR POLLUTION CONTROL AGENCY

We propose that your new code will be:

812322 Drycleaning Plants

If you feel your primary activity is different, please describe it below.

CERTIFICATION

I hereby certify that I have reviewed the attached documents and that, to the best of my knowledge and belief, the submitted information is true and complete.

The name and title of the person responsible for this statement's accuracy:

Name: EDWARD V. SUH Title: OWNER
(please print) (please print)

Signature: Date Signed: 11-25-98

Please return this Certification page with the yellow copy of the invoice. Thank you.

Puget Sound Air Pollution Control Agency
110 Union Street, Suite 500, Seattle, WA 98101
1-206-689-4047 1-800-552-3565 FAX 1-206-343-7522

Notice of Workshop
July 8, 1998
10:00 am to Noon

Proposed 1999 Annual Registration Fees

You are invited to attend an informal workshop to discuss proposals for fee changes for calendar year 1999. Emission reporting revisions and registered source emission limitations are also proposed. The workshop will be held in our office (map enclosed). Highlights of the proposal are:

Source Category	1998	1999
Automobile body repair and painting (SIC=7532) <u>with</u> Enviro Star*	\$200	\$50
Automobile body repair and painting (SIC=7532) <i>without</i> Enviro Star	\$200	\$250
Dry-cleaning plants <u>with</u> refrigerated condensers (SIC=7216)	\$130	\$150
Dry-cleaning plants <i>without</i> refrigerated condensers (SIC=7216)	\$130	\$500
Gasoline service stations with more than one tank	\$300	\$400

* This Enviro Star pilot program will be explained at the workshop



PUGET SOUND AIR POLLUTION CONTROL AGENCY
KING COUNTY ▲ KITSAP COUNTY ▲ PIERCE COUNTY ▲ SNOHOMISH COUNTY

SEP 26 1997

Edward Y Shu
Barg Cleaners
1929 3rd Ave
Seattle, WA 98101

Dear Mr. Shu:

Order of Approval No. 7188

Enclosed is the Order of Approval that authorizes you to install a dry cleaning machine, as described in the Notice of Construction Application you submitted on September 18, 1997.

When your dry cleaning machine is installed, complete and return the enclosed Notice of Completion form so we know that your equipment is operating. You may begin operating your dry cleaning machine after sending in the enclosed Notice of Completion.

I have enclosed copies of additional material to make it easier for you to meet pollution control requirements. This material includes our dry cleaning regulation, log sheets for weekly inspections of your machine, and a form for tracking the amount of perc you purchase.

If you have any questions, please contact me at (206) 689-4054.

Sincerely,

Kwame Agyei
Air Pollution Engineer

mj
Enclosures

cc: PSAPCA Inspector

Dennis J. McLerran, Air Pollution Control Officer

B O A R D O F D I R E C T O R S

Charlotte Garrido, Commissioner, Kitsap County
Janet Chalupnik, Member at Large
Edward D. Hansen, Mayor, Everett

Lynn S. Horton, Mayor, Bremerton
R.C. "Swede" Johnson, Snohomish County Council
Ron Sims, King County Executive

Brian Ebersole, Mayor, Tacoma
Norman B. Rice, Mayor, Seattle
Doug Sutherland, Pierce County Executive

**Puget Sound Air Pollution
Control Agency**

**HEREBY ISSUES AN ORDER OF APPROVAL
TO CONSTRUCT, INSTALL, OR ESTABLISH**

Registration No. 22324

Notice of
Construction No. 7188

Date SEP 26 1997

One Renzaci Model 380 Dry Cleaning Machine (Unvented Dry-to-Dry with Refrigeration).

EDWARD Y SUH

**A
P
P
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I
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A
N
T**

BARG CLEANERS

1929 3RD AVE

SEATTLE

WA 98101

O BARG CLEANERS

W 1929 3RD AVE

N SEATTLE

WA 98101

INSTALLATION ADDRESS


BARG CLEANERS, 1929 3RD AVE. SEATTLE, WA, 98101

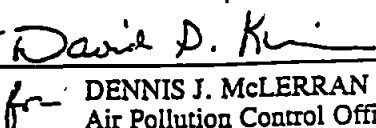
THIS ORDER IS ISSUED SUBJECT TO THE FOLLOWING RESTRICTIONS AND CONDITIONS

1. Approval is hereby granted as provided in Article 6 of Regulation I of the Puget Sound Air Pollution Control Agency to the applicant to install or establish the equipment, device or process described hereon at the INSTALLATION ADDRESS in accordance with the plans and specifications on file in the Engineering Division of PSAPCA.
2. This approval does not relieve the applicant or owner of any requirement of any other governmental agency.
3. The temperature of vapor exiting the condenser during cool-down shall not exceed 45 degrees F.


KWAME AGYEI
Reviewing Engineer

MEJ


JAY M. WILLENBERG
Reviewing Engineer


DENNIS J. McLERRAN
Air Pollution Control Officer

PUGET SOUND AIR POLLUTION CONTROL AGENCY

110 Union Street, Suite 500, Seattle WA 98101-2038 (206) 689-4054

NOTICE OF CONSTRUCTION AND APPLICATION FOR APPROVAL FOR DRYCLEANING FACILITIES

SEP 18 1997

Date: 9/18/97	PSAPCA Registration No.: 22324	Agency Use Only NOC: 7188
Facility Name: BARG CLEANERS		
Mailing Address: 1929 3rd Ave	Installation Address: Same	
City, State, Zip: Seattle, WA 98101	City, County, Zip:	

PAID

Owner Name: Edward Y. SUH	Applicant, Installer or Supplier Name:	AMOUNT: \$2000
Contact Person: OWNER 448-0808	Contact Person: Same	CX. NO. 4921
Mailing Address: Same as above	Mailing Address: Same	RCPT. NO. 21
City, State, Zip:	City, State, Zip:	

1) Equipment Information

Brand Name: RENZACI	Model Number: 380
Estimated start date of installation: 9-5-97	Estimated completion date: 9-5-97
Does the equipment vent perc to the outside air?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is equipment:	<input checked="" type="checkbox"/> New <input type="checkbox"/> Relocated <input type="checkbox"/> Replacement <input type="checkbox"/> Being modified

2) Process Information

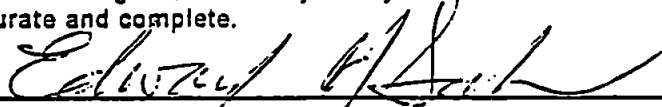
Type of Cleaning Process:	<input checked="" type="checkbox"/> Dry to Dry <input type="checkbox"/> Other (specify):
Control Equipment:	<input type="checkbox"/> Carbon Adsorber <input checked="" type="checkbox"/> Refrigeration <input type="checkbox"/> Other (specify):
Estimated gallons solvents purchased per year:	<input checked="" type="checkbox"/> Perc amount: 40 gal
Specify:	<input type="checkbox"/> Other amount:

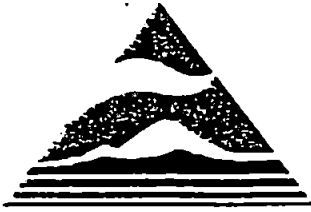
3) Operation and Maintenance (O & M) Plan Will You be Using (check one):

<input checked="" type="checkbox"/> NWDCA's O&M Plan	<input type="checkbox"/> Vendor supplied O&M Plan	<input type="checkbox"/> Writing your own O&M Plan
------------------------------------------------------	---------------------------------------------------	----------------------------------------------------

4) Certification

I, the undersigned, do hereby certify that the information contained in this application is, to the best of my knowledge, accurate and complete.

	9-5-97
Signature	Date
EDWARD Y. SUH, OWNER	448-0808
Type or Print Name and Title	Phone



PUGET SOUND AIR POLLUTION CONTROL AGENCY

KING COUNTY

KITSAP COUNTY

PIERCE COUNTY

SNOHOMISH COUNTY

September 4, 1997

Certified Mail No. Z 334 353 655

Edward Suh, President
Barg French Cleaners
1929 Third Avenue
Seattle, WA 98101

Article 6 of Agency Regulation I
Notice of Construction Permit Required

According to our records, you have installed a new dry cleaning machine.

Enclosed is a Notice of Construction form. Please complete and return it to me. Failure to obtain PSAPCA's approval prior to constructing, installing or establishing a new air contaminant source or altering an existing source is in violation of Section 6.03(a) of Agency Regulation I, which states that a Notice of Construction and Application for Approval be filed with and approved by the Agency.

If we do not receive the completed form within 30 days, we will charge an investigation fee, in addition to the fees of Section 6.04, assessed in an amount equal to 3. times the plan examination fees of Section 6.04.

Any violation of Regulation I may be subject to penalties or other enforcement action. If you have any questions, please call Kwame Agyei at 689-4054 or me at 689-4052.

Very truly yours,

Jay M. Willenberg, P.E.
Senior Air Pollution Engineer

acm
Enclosures

cc: Shannon McMillan
Kwame Agyei
Follow-up 10/6/97

Dennis J. McLerran, Air Pollution Control Officer

B O A R D O F D I R E C T O R S

Charlotte Garrido, Commissioner, Kitsap County
Janet Chalupnik, Member at Large
Edward D. Hansen, Mayor, Everett

Lynn S. Horton, Mayor, Bremerton
R.C. "Swede" Johnson, Snohomish County Council
Ron Sims, King County Executive

Brian Ebersole, Mayor, Tacoma
Norman B. Rice, Mayor, Seattle
Doug Sutherland, Pierce County Executive



3425 Vernhardson Street
Gig Harbor, WA 98332

PSAPCA MAR 02 1999

Form B-2

Northwest Drycleaners Association
3425 Vernhardson St.
Gig Harbor WA 98332
Phone: (253) 851 6327
Fax: (253) 858 2013

Routine Audit Report For Cleaners
This education and equipment review
has been funded by PSAPCA, the Puget
Sound Air Pollution Control Agency, as
part of its Business Advisory Program

PSAPCA Registration No.: 22324

Facility: Bary Cleaners

City: Seattle

Type of Machine: Unvented refrigerated
 Carbon Adsorber

Vented refrigerated
 Other (describe in comments)

Self Monitoring Results and Records

(a) Gallons perc purchased last 12 months: _____
eg: 45 gal from records, 45 gal from memory, don't know and no records

(b) Range of cool-down temperature: No Gauge
Should be 45 degrees F (7 degrees C) or less
eg: 38-44° F from records, 38-44° F from memory, non working gauge, no gauge

(c) Other (describe): _____

Maintenance Review and Observations

Yes = Y; No = N; Not Applicable = NA

Keeps leak detection log: N
Consultant observed perc leaks: N
Drains cartridge for 24 hours (verbal)

Keeps Maintenance Repair Log: N
Consultant detected perc odor: N
Other: _____

Detailed Comments and Remarks

Gauge to be installed w/in 30 days

X
Drycleaners Signature (optional)

[Signature]
Consultants Signature

Date: [Signature]
99-2-2

Time (from/to) 1245-1320

PUGET SOUND AIR POLLUTION CONTROL AGENCY

11 Union Street, Suite 500
Seattle, WA 98101-2038

Route Book Listing

Barg Cleaners

Reg #: 22324

AIRS#:

Source Address:

1929 3rd Ave, Seattle 98101

KING County

Mail to:

1929 3rd Ave

Seattle, WA 98101

Contacts:

Edward Suh

President

() 448-0808

()

O&M PLAN REQUIRED

8 Hours/Day 5 Days/Week 52 Weeks/Year

Op. Schedule Note:

Dec-Feb 25% Mar-May 25%

Jun-Aug 25% Sep-Nov 25%

SIC#: 7216 Dry Cleaning Plants

EPA Program:

Classification:

SW(1999): 0

Inspection Record:

6/20/1994 BC WSDA Level 2

8/15/1997 JK NWDC Level 2 New Machine Installed

Air Contaminant Generating Equipment.

Associated Control Equipment:

* (1) Boiler

Rated: 10 Hp

Year Installed: 1988

(2) Dry Cleaning Unit, Unvented With Refrigerated Condenser

Renzaci Model 380 Dry-To-Dry W/Refrigeration

Rated: 35 Lb/Batch

Year Installed: 1996

NC#: 7188

* CE(1) Condenser

Notices of Construction:

* This item is not assessed an annual registration fee.

Approved

12/31/97

Inspected

2/2/99

Installed

12/31/96

(Handwritten signatures and initials)

Personal Protective Equipment Checklist
As determined by PSAPCA and Inspector based on conditions at the Source on the date of the current inspection:
MUST BE COMPLETED PRIOR TO INSPECTION

Safety Equipment	Required	Optional
None		X
HardHat	_____	_____
Goggles	_____	_____
Safety Glasses	_____	_____
Hearing Protection	_____	_____
Respirator w/HEPA Filter	_____	_____
Respirator w/Acid Filter	_____	_____
Respirator w/Gas Filter	_____	_____
Respirator w/Organic Filter	_____	_____
Safety Shoes	_____	_____
Rubber Boots	_____	_____
Leather Gloves	_____	_____
Chemical Gloves	_____	_____
Coveralls	_____	_____
Tyvek	_____	_____
Safety Vest	_____	_____
Other _____	_____	_____
Inspector JK	Engineer	NWDC
Date 8/15/97		

Registration File Listing

*Name BARG Cleaners
Was BARG Cleaners
Franch*

BARG CLEANERS

Reg#: 22324
AIRS#:

Source Address:
1929 3RD AVE, SEATTLE 98101
KING COUNTY

Mail to:
1929 3RD AVE
SEATTLE, WA 98101

Contacts:
EDWARD SUH PRESIDENT
448-0808

O&M PLAN REQUIRED
8 Hours/Day 5 Days/Week 52 Weeks/Year Dec-Feb 25% Mar-May 25%
Op. Sched. Note: Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS
EPA Program: Classification: SW(1997): 0

Inspection Record (INSP File):

INSPECTED 06/20/1994 BC WSDA 2
08/15/1997 JK NWDC 2 NEW MACHINE INSTALLED

Air Contaminant Generating Equipment/Air Contaminant Control Apparatus

- * (1) BOILER
Rated: 10 HP Year Installed: 1988
 - (2) UNVENTED DRY CLEANING MACHINE
RENZACI MODEL 380 DRY-TO-DRY W/REFRIGERATION
Rated: 35 LB/BATCH Year Installed: 1996 NC#: 7188
- *CE (1) CONDENSER

* This item is not assessed an annual registration fee.

3425 Vernhardson Street
Gig Harbor, WA 98332

Northwest Drycleaners Association
3425 Vernhardson St.
Gig Harbor WA 98332
Phone: (253) 851 6327
Fax: (253) 858 2013

MEL
9/14/97
~~Conrad~~

CF

Routine Audit Report For Cleaners
This education and equipment review
has been funded by PSAPCA, the Puget
Sound Air Pollution Control Agency, as
part of its Business Advisory Program

PSAPCA Registration No.: 22324

Facility: Barg French Cleaners

City: Seattle

Type of Machine: Unvented refrigerated Vented refrigerated
 Carbon Adsorber Other (describe in comments)

Self Monitoring Results and Records

(a) Gallons perc purchased last 12 months: 20 Gal Memory
eg: 45 gal from records, 45 gal from memory, don't know and no records

(b) Range of cool-down temperature: No Gauge
Should be 45 degrees F (7 degrees C) or less
eg: 38-44° F from records, 38-44° F from memory, non working gauge, no gauge

(c) Other (describe): _____

Maintenance Review and Observations

Yes = Y; No = N; Not Applicable = NA

Keeps leak detection log: N Keeps Maintenance Repair Log: N

Consultant observed perc leaks: N Consultant detected perc odor: N

Drains cartridge for _____ hours (verbal) Other: _____

Detailed Comments and Remarks

X _____
Drycleaners Signature (optional)

J. J. J.
Consultants Signature

Date: 8-15-97

Time (from/to) 1340-1420

Route Book Listing

BARG FRENCH CLEANERS

Reg#: 22324

AIRS#:

Source Address:
 1929 3RD AVE, SEATTLE 98101
 KING COUNTY

Mail to:
 1929 3RD AVE
 SEATTLE, WA 98101

Contacts:
 EDWARD SUH PRESIDENT
 448-0808

Personal Protective Equipment Checklist		
As determined by PSAPCA and Inspector based on conditions at the Source on the date of the current inspection:		
MUST BE COMPLETED PRIOR TO INSPECTION		
Safety Equipment	Required	Optional
None		X
Hard Hat	_____	_____
Goggles	_____	_____
Safety Glasses	_____	_____
Hearing Protection	_____	_____
Respirator w/HEPA Filter	_____	_____
Respirator w/Acid Filter	_____	_____
Respirator w/Gas Filter	_____	_____
Respirator w/Organic Filter	_____	_____
Safety Shoes	_____	_____
Rubber Boots	_____	_____
Leather Gloves	_____	_____
Chemical Gloves	_____	_____
Coveralls	_____	_____
Tyvek	_____	_____
Safety Vest	_____	_____
Other _____	_____	_____
Inspector: JK NWDC	Engineer: _____	
Date: 08/15/1997		

O&M PLAN REQUIRED
 8 Hours/Day 5 Days/Week 52 Weeks/Year Dec-Feb 25% Mar-May 25%
 Op. Sched. Note: Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS
 EPA Program: Classification: SW(1997): 0

Inspection Record (INSP File):

INSPECTED 06/20/1994 BC WSDA 2
 08/15/1997 JK NWDC 2 NEW MACHINE INSTALLED

Air Contaminant Generating Equipment/Air Contaminant Control Apparatus

- * (1) BOILER
 Rated: 10 HP Year Installed: 1988
- (2) UNVENTED DRY CLEANING MACHINE
 RENZACCI [NC FORMS SENT]
 Rated: 35 LB/BATCH Year Installed: 1996
- *CE (1) CONDENSER

* This item is not assessed an annual registration fee.

Route Book Listing

Safety Equip. Req.?	NO
Hard Hat	_____
Goggles	_____
Safety Glasses	_____
Ear Protection	_____
Respirators	_____
HEPA Filters	_____
Acid/Gas/Organic Filter	_____
Ammonia Filter	_____
Safety Shoes	_____
Other	_____
Insp	_____
Engr	_____

BARG. FRENCH CLEANERS

Reg #: 22324
DOE #:

1929 3RD AVE, SEATTLE
KING COUNTY 98101

Mail to:
1929 3RD AVE
SEATTLE, WA 98101

EDWARD SUH PRESIDENT 448-0808

O&M PLAN REQUIRED

8 Hours/Day 5 Days/Week 52 Weeks/Year
Op. Sched. Note:

Dec-Feb 25% Mar-May 25%
Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS
EPA Program:

Classification: SW(1994): 3

Inspection Record (INSP File):

INSPECTED 12/03/1990 AJF BCE Letter Sent
04/15/1991 AJF SLW 1991 FORM A REC'D
02/25/1992 AJF SLW 1992 FORM A REC'D
06/20/1994 BC WSDA 2

Air Contaminant Generating Equipment/Air Contaminant Control Apparatus

*(1) BOILER

Rated: 10 HP Year Installed: 1988

(2) DRY CLEANING UNIT

COLUMBIA

Rated: 35 LB/BATCH -Year Installed: 1990

*CE (1) CONDENSER

* This item is not assessed an annual registration fee.



WASHINGTON STATE DRY CLEANERS ASSOCIATION
The Joint Association of Professional Drycleaners and Launderers

3425 Vernhardson Street • Gig Harbor, WA 98335 • (206) 851-6327

ROUTINE INSPECTION REPORT
FOR DRY CLEANERS

Note: Drop shops that have a drycleaning unit on the premises must be registered.

PSAPCA Reg # 22324
 To be determined
 New or Change of ownership
Last Tested: 1/1

Facility: BARG FRENCH CLEANERS
Street Address: 1929 3RD AVENUE
City: SEATTLE, WA Zip: 98101 County: King
Mailing Address: (if same as above, write "SAME") SAME
City: _____ State: _____ Zip: _____
Responsible Persons: ESU SUH Title: owner Telephone: (206) 662-3933

SIC #: 7215 Drycleaning (DC) Plants 7212 DC Store 7215 Coin Operated DC Other _____

Level of Inspection: #1 (survey) #2 (equip. review) #3 (Dräger test & equip. review)

Number of boilers (not electric) over 1,000,000 Btu/hr (or 29 boiler horsepower): none

(1) DRY CLEANING UNIT - Make & Model: COLUMBIA Solvent Usage: 24 gal./yr.

Rated lb./load: 35 Year Installed: 1990 Solvent Type: Perc Stoddard Other _____

Method: Dry-to-Dry Transfer

Control equipment: Carbon Adsorber Refrigeration Azeotropic Other _____

Test Results: (a) Carbon Adsorber: _____ ppa in vented emissions (PSAPCA standard is 100 ppa)
(b) 7°C or less cool down temperature 3.03 (c) (2)
(c) Other: pass fail Describe test procedures and results: _____ Cont'd on attachment

(2) DRY CLEANING UNIT - - Make & Model: _____ Solvent Usage: _____ gal./yr.

Rated lb./load: _____ Year Installed: _____ Solvent Type: Perc Stoddard Other _____

Method: Dry-to-Dry Transfer

Control equipment: Carbon Adsorber Refrigeration Azeotropic Other _____

Test Results: (a) Carbon Adsorber: _____ ppa in vented emissions (PSAPCA standard is 100 ppa)
(b) 7°C or less cool down temperature 3.03 (c) (2)
(c) Other: pass fail Describe test procedures and results: _____ Cont'd on attachment

Visual Leak Detection Test: OK Other Other
Difactory Test: Undetectable Other
Cartridge test: Not Applicable Verbal Verification

Remarks: (including number of boilers over 29 hp)

Drycleaner's Signature: _____

Report By / Date: _____ actual inspection _____

(Signature)

(Date & Time)

Safety Equip. Req.?	NO
Hard Hat	
Goggles	
Safety Glasses	
Ear Protection	
Respirators	
HEPA Filters	
Acid/Gas/Organic Fltr	
Ammonia Filter	
Safety Shoes	
Other	

Registration File Listing

BARG FRENCH CLEANERS

Reg #: 22324
 DOE #:
 Mail to:
 1929 3RD AVE
 SEATTLE, WA 98101

1929 3RD AVE, SEATTLE
 KING COUNTY 98101

 EDWARD SUH PRESIDENT 448-0808

O&M PLAN REQUIRED
 8 Hours/Day 5 Days/Week 52 Weeks/Year Dec-Feb 25% Mar-May 25%
 Op. Sched. Note: Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS
 EPA Program: Classification: SW(1991): 3

Inspection Record (INSP File):

INSPECTED 12/03/1990 AJF BCE Letter Sent
 04/15/1991 AJF SLW 1991 FORM A REC'D
 02/25/1992 AJF SLW 1992 FORM A REC'D

Air Contaminant Generating Equipment/Air Contaminant Control Apparatus

- * (1) BOILER
 Rated: 10 HP Year Installed: 1988
- (2) DRY CLEANING UNIT
 Rated: 35 LB Year Installed: 1990

Process Quantities (RM File):

	1988	1989	1990	1991
	----	----	----	----
(1) FUELS COMBUSTED- GAS(THERMS), #2 OIL, #6 OIL(GAL), COAL, WOOD(TON)	0	0	0	0
(2) Perchloroethylene (PCE)	0	200	200	200
(3) PERCHLOROETHYLENE (GAL/YR)	0	0	0	0

* This item is not assessed an annual registration fee.

Registration File Listing

BARG FRENCH CLEANERS

Reg #:22324

Process Emission Factors (EF File):

(1) FUELS COMBUSTED- GAS(THERMS),#2 OIL,#6 OIL(GAL),COAL,WOOD(TON)

- LB/

(2) Perchloroethylene (PCE)

- LB/

(3) PERCHLOROETHYLENE (GAL/YR)

- LB/

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

(Needed for identification & surveillance of air contaminant sources)

Identification (ID File):
BARG FRENCH CLEANERS

Reg # 22324

RECEIVED

1929 3RD AVE, SEATTLE
King County 98101

FEB 25 1992

Mail:
1929 3RD AVE
SEATTLE, WA 98101

Contact:
EDWARD SUH

PUGET SOUND AIR POLLUTION
CONTROL AGENCY
PRESIDENT

Phone:
448-0808

Schedule:
8 Hours/Day 5 Days/Week 52 Weeks/Year

Quarterly Level of Activity:
Dec-Feb 25% Mar-May 25%
Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS

Section 5.05(e) of Regulation I requires the owner to develop and implement an operation and maintenance (O&M) plan to assure continuous compliance with Regulations I, II, & III.

All equipment on the site or permitted as of January 1, 1992 is supposed to be registered (Table 5-B(5) of Regulation I).

If you have new or existing equipment that is not registered, please add it to the appropriate file (BE or CE).

If you have added new equipment without obtaining a Notice of Construction (NC) permit, contact Harry Watters at 296-7334 to obtain the appropriate NC permit application forms.

Otherwise, if a subsequent PSAPCA inspection indicates that there is unregistered equipment on site, you will be subject to penalties, fines, and citations as provided by law.

BE File - Air Contaminant Generating Equipment and
CE File - Associated Air Contaminant Control Apparatus (BC Format):

- *(1) BOILER
Rated:10 HP Year Installed: 1988 NC#: _____
- (2) DRY CLEANING UNIT
Rated:35 LB Year Installed: 1990 NC#: _____

* This item is not assessed an annual registration fee.

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

BARG FRENCH CLEANERS

Reg # 22324

BE File - Air Contaminant Generating Equipment and
CE File - Associated Air Contaminant Control Apparatus (BC Format):

() _____

Rated: _____ Year Installed: _____ NC#: _____

Air Contaminant Control Apparatus (CE File) not listed in BC Format:

() _____

Rated: _____ CFM Year Installed: _____ NC#: _____

Notices of Construction (NC File):

Approved Installed Inspected

NO NC FOR THIS REGISTRATION #

Inspection/Contact (INSP File):

INSPECTED 12/03/1990 AJF BCE Letter Sent
04/15/1991 AJF SLW 1991 FORM A REC'D
02/14/1992 AJF 1992 FORM A SENT

Pursuant to Section 5.05(a), you are hereby requested to furnish raw material (RM) information (type and amount) and toxic air contaminants (TAC) emitted during the calendar years indicated. Section 1.11 of Regulation III also requires annual reporting of TAC emissions.

Please add any additional pertinent raw materials, fuels, and process quantities to the RM file and any pertinent TAC to the TAC file.

Raw Materials/Fuels/Process Quantities (RM File):

	<u>1989</u>	<u>1990</u>	<u>1991</u>
(1) FUELS COMBUSTED- GAS(THERMS),#2 OIL,#6 OIL(GAL),COAL,WOOD(TON)	_____	_____	_____
(2) Perchloroethylene (PCE)	200	200	<u>260</u>
(3) PERCHLOROETHYLENE (GAL/YR)	_____	_____	_____

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

BARG FRENCH CLEANERS

Reg # 22324

Raw Materials/Fuels/Process Quantities (RM File):

	<u>1989</u>	<u>1990</u>	<u>1991</u>
() _____	_____	_____	_____
() _____	_____	_____	_____

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

BARG FRENCH CLEANERS

NA.

Reg # 22324

Toxic Air Contaminant Emissions Inventory (TAC File):

(For a simplified method of calculating toxics from raw materials, please refer to the pink Form A Instruction Sheet.)

	<u>1989</u> (lbs/yr)	<u>1990</u> (lbs/yr)	<u>1991</u> (lbs/yr)
Acetone	_____	_____	_____
Aliphatic Hydrocarbons	_____	_____	_____
Ammonia	_____	_____	_____
Aromatic Hydrocarbons	_____	_____	_____
Autobody Thinner	_____	_____	_____
Autobody Paint	_____	_____	_____
Benzene	_____	_____	_____
Butyl Acetate	_____	_____	_____
Butyl Alcohol	_____	_____	_____
Butyl Cellosolve (2-Butoxyethanol)	_____	_____	_____
Cadmium Compounds	_____	_____	_____
Chromium (VI)	_____	_____	_____
Chromium (Metal)	_____	_____	_____
Cyclohexanone	_____	_____	_____
Dichloromethane	_____	_____	_____
Ethyl Acetate	_____	_____	_____
Ethyl Alcohol (Ethanol)	_____	_____	_____
Ethylbenzene	_____	_____	_____
Ethylene Oxide	_____	_____	_____
Formaldehyde	_____	_____	_____
Freon 113	_____	_____	_____
Gasoline Vapors	_____	_____	_____
Hexane	_____	_____	_____
Hydrochloric Acid	_____	_____	_____
Isobutyl Acetate	_____	_____	_____
Isobutyl Alcohol	_____	_____	_____
Isopropyl Acetate	_____	_____	_____
Isopropyl Alcohol	_____	_____	_____
Lead	_____	_____	_____
Manganese	_____	_____	_____
Mercury	_____	_____	_____
Methyl Alcohol (Methanol)	_____	_____	_____
Methyl Ethyl Ketone	_____	_____	_____
Methyl Isobutyl Ketone	_____	_____	_____
Naphtha	_____	_____	_____
Nickel	_____	_____	_____
Nitric Acid	_____	_____	_____
Perchloroethylene (Tetrachloroethylene)	_____	_____	_____

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

BARG FRENCH CLEANERS

Reg # 22324

N.A.

Toxic Air Contaminant Emissions Inventory (TAC File):

(For a simplified method of calculating toxics from raw materials, please refer to the pink Form A Instruction Sheet.)

	<u>1989</u> (lbs/yr)	<u>1990</u> (lbs/yr)	<u>1991</u> (lbs/yr)
Phenol	_____	_____	_____
Stoddard Solvent	_____	_____	_____
Styrene	_____	_____	_____
Sulfuric Acid	_____	_____	_____
Toluene	_____	_____	_____
Toluene 2,4 Diisocyanate	_____	_____	_____
1,1,1 Trichloroethane	_____	_____	_____
Trichloroethylene	_____	_____	_____
Xylene	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Comments

Please return all pages of this 1992 Registration Form A titled "REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS", by April 15, 1992, with any discrepancies corrected and any omitted items added. Fees are due by March 15, 1992.

Please check here if you wish to be on the mailing list for updates of Regulations I, II, and III

EDWARD Y. SUH
Name

OWNER
Title

Edward Y. Suh
Signature

2-24-92
Date

Safety Equip. Req.?	NO
Hard Hat	
Goggles	
Safety Glasses	
Ear Protection	
Respirators	
HEPA Filters	
Acid/Gas/Organic Fltr	
Ammonia Filter	
Safety Shoes	
Other	

Registration File Listing

BARG FRENCH CLEANERS

1929 3RD AVE, SEATTLE
 KING COUNTY 98101

Reg #: 22324
 DOE #:
 Mail to:
 1929 3RD AVE
 SEATTLE, WA 98101

EDWARD SUH PRESIDENT 448-0808

O&M PLAN REQUIRED

8 Hours/Day 5 Days/Week 52 Weeks/Year Dec-Feb 25% Mar-May 25%
 Op. Sched. Note: Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS
 EPA Program:

Classification:

Inspection Record (INSP File):

INSPECTED 12/03/1990 AJF BCE Letter Sent
 04/15/1991 AJF SLW 1991 FORM A REC'D

Air Contaminant Generating Equipment/Air Contaminant Control Apparatus

- *(1) BOILER
 Rated: 10 HP Year Installed: 1988
- (2) DRY CLEANING UNIT
 Rated: 35 LB Year Installed: 1990

Process Quantities (RM File):

	1987	1988	1989	1990
(1) FUELS COMBUSTED- GAS(THERMS), #2 OIL, #6 OIL(GAL), COAL, WOOD(TON)	0	0	0	0
(2) Perchloroethylene (Tetrachloroethylene)	0	0	200	200

Process Emission Factors (EF File):

* This item is not assessed an annual registration fee.

Registration File Listing

BARG FRENCH CLEANERS

Reg #:22324

Process Emission Factors (EF File):

- (1) FUELS COMBUSTED- GAS(THERMS),#2 OIL,#6 OIL(GAL),COAL,WOOD(TON)

- (2) Perchloroethylene (Tetrachloroethylene)

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

(Needed for identification & surveillance of air contaminant sources)

Identification (ID File):
BARG FRENCH CLEANERS

Reg # 22324

1929 3RD AVE, SEATTLE
King County 98101

EDWARD SUH PRESIDENT 448-0808

RECEIVED
APR 15 1991
PUGET SOUND AIR POLLUTION
CONTROL AGENCY

Mail:
1929 3RD AVE
SEATTLE, WA 98101

Operating Schedule:
8 Hours/Day 5 Days/Week 52 Weeks/Year

Quarterly Level of Activity:
Dec-Feb 25% Mar-May 25%
Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS

An Operation and Maintenance (O&M) Plan is required by Section 5.05(e) of Regulation I.

All equipment on the site or permitted as of January 1, 1991 is supposed to be registered (Table 5-B(4) of Regulation I).

If you have new or existing equipment that is not registered, please add it to the appropriate file (BE or CE).

If you have added new equipment without obtaining a Notice of Construction (NC) permit, contact Harry Watters at 296-7334 to obtain the appropriate NC permit application forms.

Otherwise, if a subsequent PSAPCA inspection indicates that there is unregistered equipment on site, you will be subject to penalties, fines, and citations as provided by law.

BE File - Air Contaminant Generating Equipment and

CE File - Associated Air Contaminant Control Apparatus (BC Format):

* (1) BOILER
Rated: 10 HP. Year Installed: 1988 NC#: _____

(2) DRY CLEANING UNIT
Rated: 35 # Year Installed: 1990 NC#: _____

() _____

Rated: _____ Year Installed: _____ NC#: _____

REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS

BARG FRENCH CLEANERS

Reg # 22324

Air Contaminant Control Apparatus (CE File) not listed in BC Format:

() _____

Rated: _____ CFM Year Installed: _____ NC#: _____

Notices of Construction (NC File):

Approved Installed Inspected

NO NC FOR THIS REGISTRATION #

Inspection Record (INSP File):

INSPECTED 12/03/1990 AJF . BCE Letter Sent
02/15/1991 AJF 1991 FORM A SENT

Pursuant to Section 5.05(a), you are hereby requested to furnish raw material (RM) information (type and amount) and toxic air contaminants (TAC) emitted during the calendar years indicated. Section 1.11 of Regulation III also requires annual reporting of TAC emissions.

Please add any additional pertinent raw materials, fuels, and process quantities to the RM file and any pertinent TAC to the TAC file.

Raw Materials/Fuels/Process Quantities (RM File):

	<u>1988</u>	<u>1989</u>	<u>1990</u>
(1) Perchloroethylene (Tetrachloroethylene)	<u>UNK</u>	<u>200 gal</u>	<u>200 ga</u>
(2) FUELS COMBUSTED- GAS(THERMS), #2 OIL, #6 OIL(GAL), COAL, WOOD(TON)	<u>UNK</u>	<u>UNK</u>	<u>UNK</u>
()	_____	_____	_____
()	_____	_____	_____

BARG FRENCH CLEANERS

Reg # 22324

Toxic Air Contaminant Emissions Inventory (TAC File):

	<u>1988</u> (lbs/yr)	<u>1989</u> (lbs/yr)	<u>1990</u> (lbs/yr)
Acetone	_____	_____	_____
Aliphatic Hydrocarbons	_____	_____	_____
Ammonia	_____	_____	_____
Aromatic Hydrocarbons	_____	_____	_____
Benzene	_____	_____	_____
Butyl Acetate	_____	_____	_____
Butyl Alcohol	_____	_____	_____
Butyl Cellosolve (2-Butoxyethanol)	_____	_____	_____
Chlorine	_____	_____	_____
Chloroform	_____	_____	_____
Chromium (VI)	_____	_____	_____
Chromium (Metal)	_____	_____	_____
Cyclohexanone	_____	_____	_____
Dichloromethane	_____	_____	_____
Ethyl Acetate	_____	_____	_____
Ethyl Alcohol (Ethanol)	_____	_____	_____
Ethylbenzene	_____	_____	_____
Ethylene Oxide	_____	_____	_____
Formaldehyde	_____	_____	_____
Gasoline Vapors	_____	_____	_____
Hexane	_____	_____	_____
Hydrochloric Acid	_____	_____	_____
Isobutyl Acetate	_____	_____	_____
Isobutyl Alcohol	_____	_____	_____
Isopropyl Acetate	_____	_____	_____
Isopropyl Alcohol	_____	_____	_____
Lead	_____	_____	_____
Manganese	_____	_____	_____
Methyl Alcohol (Methanol)	_____	_____	_____
Methyl Ethyl Ketone	_____	_____	_____
Methyl Isobutyl Ketone	_____	_____	_____
Naphtha	_____	_____	_____
Naphthalene	_____	_____	_____
Nickel	_____	_____	_____
Nitric Acid	_____	_____	_____
Perchloroethylene (Tetrachloroethylene)	<u>No Inventory kept.</u>		
Phenol	_____	_____	_____
Stoddard Solvent	_____	_____	_____

BARG FRENCH CLEANERS

Reg # 22324

Toxic Air Contaminant Emissions Inventory (TAC File):

	<u>1988</u> (lbs/yr)	<u>1989</u> (lbs/yr)	<u>1990</u> (lbs/yr)
Styrene	_____	_____	_____
Sulfuric Acid	_____	_____	_____
Toluene	_____	_____	_____
Toluene 2,4 Diisocyanate	_____	_____	_____
1,1,1 Trichloroethane	_____	_____	_____
Trichloroethylene	_____	_____	_____
Trichlorotrifluoroethane (Freon 113)	_____	_____	_____
Xylene	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

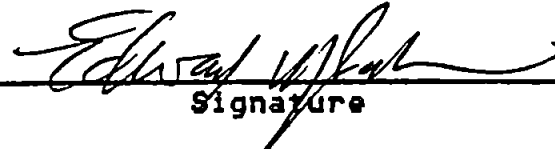
Comments

Please return all pages of this 1991 Registration Form A titled "REGISTERED EQUIPMENT/CONTROL APPARATUS/TOXICS", by April 15, 1991, with any discrepancies corrected and any omitted items added.

Please check here if you wish to be on the mailing list for updates
 of Regulations I, II, and III

Edward Y. Suh
 Name

OWNER
 Title


 Signature

1-11-91
 Date

ET SOUND AIR POLLUTION CONTROL AGENCY
200 W Mercer St #205, Seattle, WA 98119-3958
JAN 3, 1991, 11:26 AM

Registration File Listing

Safety Equip. Req.?	NO
Hard Hat	
Goggles	
Safety Glasses	
Ear Protection	
Respirators	
HEPA Filters	
Acid/Gas/Organic Filt	
Ammonia Filter	
Safety Shoes	
Other	

BARG FRENCH CLEANERS

1929 3RD AVE, SEATTLE
KING COUNTY 98101

Reg #: 22324
DOE #:
Mail to:
1929 3RD AVE
SEATTLE, WA 98101

EDWARD SUH PRESIDENT 448-0808

O&M PLAN REQUIRED

8 Hours/Day 5 Days/Week 52 Weeks/Year Dec-Feb 25% Mar-May 25%
Op. Sched. Note: Jun-Aug 25% Sep-Nov 25%

SIC # 7216 DRY CLEANING PLANTS
EPA Program:

Classification:

Inspection Record (INSP File):

INSPECTED 12/03/1990 AJF Letter Sent

Air Contaminant Generating Equipment/Air Contaminant Control Apparatus

- (1) BOILER
- (2) DRY CLEANING UNIT

Puget Sound Air Pollution Control Agency

200 West Mercer St, Room 205, Seattle, WA 98119 - (206) 296-3334, 296-7445
Facsimile 296-7431

Registration Update Form (Due December 14, 1990)

IDENTIFICATION

REG# 22324

1. Facility Name: BARG FRENCH CLEANERS
2. Mailing Address: 1929 3RD AVE
3. Mailing City: SEATTLE 4. State: WA 5. Zip: 98101
6. Location Address: 1929 3RD AVE
7. Location City: SEATTLE 8. County: KING 9. Zip: 98101
10. Owner/Manager: EDWARD SUH PRESIDENT 448-0808
(Name) (Title) (Telephone)
11. Alternate Contact: _____
(Name) (Title) (Telephone)
12. SIC#: 7216 - DRY CLEANING PLANTS
(Standard Industrial Classification)

EQUIPMENT: (List # of items)

REG# 22324

13. _____ Asphalt Plants
14. _____ Blast Cleaning Units
15. 39 1 Boilers/Heaters (1 million BTU/hr or larger)
16. _____ Concrete Plants
17. _____ Crushers/Grinders/Mills
18. _____ Degreasers
19. 60 1 Dry Cleaning Machines
20. _____ Electroplating Lines
21. _____ Fiberglass Operations
22. _____ Food Processing
23. _____ Fume Hoods
24. _____ Furnaces
25. _____ Incinerators
26. _____ Mixers
27. _____ Ovens, Kilns, Dryers
28. _____ Saws/Planers/Sanders
29. _____ Spray Booths (with filters)
30. _____ Spray Painting (without filters)
31. _____ Storage Tanks
32. _____ Other (list)

RECEIVED
JAN 22 1991
PUGET SOUND AIR POLLUTION
CONTROL AGENCY

CONTROLS: (List # of items)

REG# 22324

33. _____ Adsorbers
34. _____ Afterburners
35. _____ Baghouses
36. _____ Cyclones
37. _____ Filters
38. _____ Precipitators
39. _____ Scrubbers
40. _____ Other (list)

Please correct, complete and return this Registration Update Form by the due date so that we can make any corrections to your registration file before the 1991 Registration Mailing.

Name Edward Suh Title OWNER
Signature Edward Suh Date 12-24-90

APPENDIX C SITE EXPLORATION METHODS

General

Kleinfelder developed a Health and Safety Plan for this project prior to the start of fieldwork. The Health and Safety Plan included specifications for steel toe boots, hard hats, safety glasses, and protective clothing. For the protection of the crew, a photoionization detector (PID) was used to screen for the presence of volatile organic concentrations in the breathing zone during the drilling of the borings. The PID was a Thermo Environmental Model 580B OVM, or equivalent, with a 10.5 ev lamp. The instrument was calibrated to 100 parts per million by volume (ppmv) with an isobutylene gas standard. The PID measures volatile organic compounds (VOCs) in the air in ppmv.

Subsurface Soil Sampling

Sonic Soil Sampling performed "drilling" at this site. A hand-operated, electrically powered percussion hammer fitted with a 2-inch diameter x 30-inch long split-spoon sampler with a drill-bit shoe (Pionjar 120) was used. Continuous core samples were obtained by driving the sampler to depth, removing the split-spoon and drive extensions from the bore hole, collecting the core sample, adding successive drive extensions to the split spoon, and repeating the process for each successive soil core.

Soil samples were transferred to sterilized glassware provided by the project laboratory. A label indicating the sample number, project number, sampler, and date and time of sampling, was affixed to each sample, and the sample was recorded on a chain-of-custody form. Samples were stored in an iced chest on site and during transport to the laboratory. To minimize potential cross-contamination, the sampling equipment was cleaned and rinsed between samples using laboratory-grade detergent and distilled water.

Upon completion of the boring, the borehole was filled with bentonite and sand, and surface patched with concrete.

Monitoring Well Installation and Sampling

Monitoring well SP-1 was completed by placing polyvinyl chloride (PVC) well casing with an outside diameter of 1.7 inches within the bore hole. Five feet of slotted well casing was placed in the bottom of the well, and connected with solid riser casing. The annular space around the casing was filled with sand, with a bentonite seal formed around the uppermost foot of the casing. A steel well monument was set with concrete around the PVC well casing and finished flush with the surrounding concrete floor.

We attempted to develop the well with a peristaltic pump after the well screen was set. Approximately 500 ml of perched groundwater was removed until the well was dry. The well was permitted to recharge for approximately 4 to 6 hours but a sufficient amount of water was available to collect a PCE sample.

TEG NW SEATTLE CHEMISTRY LABORATORY
 (425) 957-9872, fax (425) 957-9904

TEG Job Number: S90816-5
 Client: Kleinfelder
 Client Job Name: Barg French Cleaner
 Client Job Number: 60-1996-01
 Printed: 8/19/99 11:47

Analytical Results

8021B, µg/kg		MTH BLK	LCS	SP1@9.5	SP1@12.5	SP2@2.5	SP2@7	SP2@10
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99
Date analyzed	Limits	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99
Moisture, %				19%	20%	5%	15%	19%

Chlorobenzene	250		129%					
Tetrachloroethene	50	nd		2,600	nd	3,800	8,900	1,800

Surrogate recoveries:

Bromochloromethane	101%	96%	99%	98%	99%	97%	100%
1,4-Dichlorobutane	92%	94%	99%	100%	99%	102%	97%
Bromochloropropane	108%	88%	100%	93%	93%	94%	102%

* - chlorobenzene reported only for qa/qc

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

TEG NW SEATTLE CHEMISTRY LABORATORY
 (425) 957-9872, fax (425) 957-9904

TEG Job Number: S90816-5
 Client: Kleinfelder
 Client Job Name: Barg French Clea
 Client Job Number: 60-1996-01
 Printed: 8/19/99 11:47

Analytical Results	MS		MSD		RPD			
		SP2@10	SP2@10	SP2@10	SP3@4.5	SP3@7	SP3@9	SP4@3
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
8021B, µg/kg	Reporting	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99
Date extracted	Reporting	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99
Date analyzed	Limits	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99	08/18/99
Moisture, %		19%	19%		6%	16%	19%	6%
Chlorobenzene	250	79%	97%	20%				
Tetrachloroethene	50				5,200	8,200	3,500	4,400

Surrogate recoveries:

Bromochloromethane	90%	100%		104%	100%	102%	97%
1,4-Dichlorobutane	93%	97%		99%	99%	99%	100%
Bromochloropropane	74%	101%		105%	100%	102%	102%

* - chlorobenzene reported only for qa/qc

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

TEG NW SEATTLE CHEMISTRY LABORATORY
 (425) 957-9872, fax (425) 957-9904

TEG Job Number: S90816-5
 Client: Kleinfelder
 Client Job Name: Barg French Clea
 Client Job Number: 60-1896-01
 Printed: 8/19/99 11:47

Analytical Results

8021B, µg/kg		SP4@7	SP4@9	SP5@5
Matrix	Soil	Soil	Soil	Soil
Date extracted	Reporting	08/18/99	08/18/99	08/18/99
Date analyzed	Limits	08/18/99	08/18/99	08/18/99
Moisture, %		14%	20%	7%
Chlorobenzene	250			
Tetrachloroethene	50	4,400	1,300	630

Surrogate recoveries:

Bromochloromethane	100%	95%	94%
1,4-Dichlorobutane	97%	96%	95%
Bromochloropropane	101%	82%	75%

* - chlorobenzene reported only for qa/qc

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

na - not analyzed

C - coelution with sample peaks

M - matrix interference

J - estimated value

Results reported on dry-weight basis

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

PROJECT NO. 60-1996-01		PROJECT NAME Bay French Cleaner			NO. OF CON- TAINERS	TYPE OF CON- TAINERS	RECEIVING LAB:													
L.P. NO. (P.O. NO.)		SAMPLERS: (Signature/Number) <i>[Signature]</i>					ANALYSIS													
DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	INSTRUCTIONS/REMARKS																
1	8/14/99	1555	SP4P7	Soil	1x40L	✓														
2		1605	SP4P8	↓	↓															
3		1615	SP4P9	↓	↓	✓														
4		1100	SP5P3	↓	↓															
5		1125	SP5P5	✓	✓	✓														
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 8/16/99 1515	Received by: (Signature) <i>[Signature]</i>	Instructions/Remarks:	Send Results To: KLEINFELDER 2405 140TH AVENUE NE SUITE A101 BELLEVUE, WA 98005 (425) 562-4200
Relinquished by: (Signature)	Date/Time	Received by: (Signature)		
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)		

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
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
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF 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
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		CLEAN SANDS (LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		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	
			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



KLEINFELDER

Copyright 1999

SOIL CLASSIFICATION LEGEND

Project # 60-1996-01

FIGURE A-1

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM					BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S.		SOIL DESCRIPTION
			LABORATORY			FIELD					NAME	SYMBOL	
			MOISTURE CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	% PASSING No. 200 SIEVE	OTHER TESTS						
0												Surface: Concrete Floor	
												6" CONCRETE	
												Dry, light gray poorly graded fine SAND, (SP)	
												- becomes dense to very dense (based on operator's observations), noted decrease on core interval due to dense material	
5												Moist, light gray poorly graded fine SAND with occasional iron rust streaks, (SP)	
									SP-7'				
												Moist, light gray clayey SILT (6" lense), (ML)	
									SP-9'	ML			
									SP-9.5'	SP			
10												Wet, light gray poorly graded fine SAND (6" lense), (SP)	
												Moist, gray SILT (4" lense), (ML)	
												Moist to wet, light brownish gray fine SAND (4" lense), (SP)	
												Moist, gray SILT, (ML), dense to very dense, (GLACIAL TILL)	
									SP-12.5'	TILL			
15													

Boring terminated at 14' bgs due to refusal on 8/14/99. Groundwater encountered at 9' bgs during drilling. Placed PVC well screen and riser from 14' to 9' bgs.

DATE DRILLED: 8-14-99

SURFACE ELEVATION (feet): 0.0

DRILLING METHOD: Percussion Hammer

LOGGED BY: T. Stott

TOTAL DEPTH (feet): 15.0

DRILLER: Sonic Soil Sampling

REVIEWED BY: Dennis O'Neill

DIAMETER OF BORING (in): 8 1/4"

CASING SIZE:



KLEINFELDER
 GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
 SOILS AND MATERIALS TESTING

Barg French Dry - Cleaning Facility
 1929 3rd Avenue
 Seattle, Washington
BORING LOG
 SP-1

FIGURE

A - 2

PAGE 1 of 1

PROJECT NUMBER: 60-1996-01

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

APPROV: _____

BY: _____

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	TESTING PROGRAM					BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S.		SOIL DESCRIPTION
		LABORATORY				FIELD				NAME	SYMBOL	
		WATER LEVEL	MOISTURE CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	% PASSING No. 200 SIEVE						
0											Surface: Concrete Floor	
										SP	6" CONCRETE	
						0		SP2-2.5			Dry, light gray poorly graded fine SAND, (SP)	
						0		SP2-4			Moist, light gray poorly graded fine SAND, (SP) - caving and slough fill top part of spoon	
5						0		SP2-5				
						250		SP2-6				
						500		SP2-7				
						50		SP2-8				
						0		SP2-9	ML		Wet, light gray poorly graded fine SAND, (SP)	
10						trace		SP2-10			Moist, gray SILT, (ML)	
11												

Boring terminated at 10' bgs due to refusal on 8/41/99. Groundwater encountered at 8.5' bgs during drilling.

DATE DRILLED: 8-14-99
 LOGGED BY: T. Stott
 REVIEWED BY: Dennis O'Neill

SURFACE ELEVATION (feet): 0.0
 TOTAL DEPTH (feet): 11.0
 DIAMETER OF BORING (in): 8 1/4"

DRILLING METHOD: Percussion Hammer
 DRILLER: Sonic Soil Sampling
 CASING SIZE:



KLEINFELDER
 GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
 SOILS AND MATERIALS TESTING

Barg French Dry - Cleaning Facility
 1929 3rd Avenue
 Seattle, Washington
BORING LOG
 SP-2

FIGURE
 A - 3.
 PAGE 1 of 1

PROJECT NUMBER: 60-1996-01

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

BY: APPROV:


DEPTH (feet)	WELL/PIEZO CONSTRUCTION	TESTING PROGRAM					PID (ppm)	BLOWS/6 in.** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S.		SOIL DESCRIPTION
		LABORATORY			FIELD						NAME	SYMBOL	
		WATER LEVEL	MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE							
0												Surface: Concrete Floor	
												6" CONCRETE	
												Dry, light gray poorly graded fine SAND, (SP)	
5							80		SP3-4.5'				
									SP3-6'				
							40		SP3-7'			Moist. light gray poorly graded fine SAND, (SP)	
							20		SP3-8'		ML	Moist, light gray sandy SILT, (ML)	
10							0		SP3-9'			Wet, light gray slightly sandy SILT, (ML)	
11							0						

Boring terminated at 10' bgs due to refusal on 8/14/99. Groundwater encountered at 8.5' bgs during drilling.

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

APPROV: _____ BY: _____

DATE DRILLED: 8-14-99 SURFACE ELEVATION (feet): 0.0 DRILLING METHOD: Percussion Hammer
 LOGGED BY: T. Stott TOTAL DEPTH (feet): 11.0 DRILLER: Sonic Soil Sampling
 REVIEWED BY: Dennis O'Neill DIAMETER OF BORING (in): 8 1/4" CASING SIZE:

 KLEINFELDER GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS SOILS AND MATERIALS TESTING	Barg French Dry - Cleaning Facility 1929 3rd Avenue Seattle, Washington BORING LOG SP-3	FIGURE A - 4 PAGE 1 of 1
	PROJECT NUMBER: 60-1996-01	

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	TESTING PROGRAM					PID (ppm)	BLOWS/6 ft** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S.		SOIL DESCRIPTION
		LABORATORY			FIELD						NAME	SYMBOL	
		WATER LEVEL	MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE							
0												Surface: Concrete Floor	
												6" CONCRETE	
							300				SP	Dry, light gray poorly graded fine SAND, (SP)	
							trace		SP4-3'				
							0		SP4-4'				
5							0		SP4-6'				
							80		SP4-7'			Moist, light gray poorly graded fine SAND, (SP)	
							trace		SP4-8'				
							0		SP4-9'			Wet, light gray poorly graded fine SAND, (SP)	

Boring terminated at 9' bgs due to refusal on 8/14/99. Groundwater encountered at 8.5' bgs during drilling.

DATE DRILLED: 8-14-99
 LOGGED BY: T. Stott
 REVIEWED BY: Dennis O'Neill

SURFACE ELEVATION (feet): 0.0
 TOTAL DEPTH (feet): 10.0
 DIAMETER OF BORING (in): 8 1/4"

DRILLING METHOD: Percussion Hammer
 DRILLER: Sonic Soil Sampling
 CASING SIZE:



KLEINFELDER
 GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
 SOILS AND MATERIALS TESTING

PROJECT NUMBER: 60-1996-01

Barg French Dry - Cleaning Facility
 1929 3rd Avenue
 Seattle, Washington
BORING LOG
 SP-4

FIGURE
 A - 5
 PAGE 1 of 1

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.
 APPROV: _____
 BY: _____

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	TESTING PROGRAM					PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S.		SOIL DESCRIPTION
		LABORATORY				FIELD					NAME	SYMBOL	
		WATER LEVEL	MOISTURE CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	% PASSING No. 200 SIEVE							
0.0												Surface: Concrete Floor	
												6" CONCRETE	
									SP3-3'		SP	Dry, light gray poorly graded fine SAND, (SP)	
5									SP3-5'				
6.5													

Boring terminated at 5.5' bgs due to refusal on 8/14/99. Groundwater not encountered during drilling.

DATE DRILLED: 8-14-99 SURFACE ELEVATION (feet): 0.0 DRILLING METHOD: Percussion Hammer
 LOGGED BY: T. Stott TOTAL DEPTH (feet): 6.5 DRILLER: Sonic Soil Sampling
 REVIEWED BY: Dennis O'Neill DIAMETER OF BORING (in): 8 1/4" CASING SIZE:



Barg French Dry - Cleaning Facility
 1929 3rd Avenue
 Seattle, Washington
BORING LOG
SP-5

FIGURE
 A - 6
 PAGE 1 of 1

PROJECT NUMBER: 60-1996-01

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APPLICATION FOR AUTHORIZATION TO USE

**Environmental Assessment and
Phase II Subsurface Soil and Shallow Groundwater Characterization
The Barg French Dry-Cleaning Facility
Kleinfelder Project Number: 60-1996-01**

September 7, 1999

**TO: Kleinfelder, Inc.
2405 140th Avenue, Suite A101
Bellevue, Washington 98005**

FROM:

Applicant _____ hereby applies for permission to:
[State here the use(s) contemplated]

for the purpose(s) of:
[State here why you wish to do what is contemplated as set forth above]

Applicant understands and agrees that the above identified report prepared by Kleinfelder, Inc. is the copyright owner and that unauthorized use or copying of the above identified report is strictly prohibited without the express written permission of Kleinfelder, Inc. and Kleinfelder's client. Applicant understands that Kleinfelder, Inc. and/or Kleinfelder's client, may withhold such permission at its sole discretion, or grant such permission upon such terms and conditions, as it deems acceptable.

Dated: _____

Applicant

by _____

its _____