



ENVIRONMENTAL
PROTECTION
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April 18, 1996

167.0200.003

Wells Fargo Bank
c/o Rory Campbell, Esq.
Hanson, Bridgett, Marcus, Vlahos, & Rudy
333 Market Street, Suite 2300
San Francisco, California 94105-2173

Attention: Mr. Steven Schulman

**WORK PLAN
POTENTIAL SOURCE INVESTIGATION
FORMER BILL COX CADILLAC FACILITY
230 BAY STREET
OAKLAND, CALIFORNIA**

Dear Messrs. Campbell and Schulman:

PES Environmental, Inc. (PES) is pleased to present Wells Fargo Bank (Wells Fargo) and Hanson, Bridgett, Marcus, Vlahos & Rudy (Hanson Bridgett) this work plan for investigation of potential sources of soil and groundwater contamination at the former Bill Cox Cadillac facility located at 230 Bay Street, Oakland, California (Plate 1). This work plan was prepared at your request following a site walk and discussions between PES, Mr. Bill Cox and his environmental consultant, Eisenberg, Olivieri, and Associates, Inc. (EOA), concerning historical site use, potential sources of contamination at the subject site and proposed methodologies to evaluate the presence or absence of contamination. This work plan contains: (1) a brief discussion of background information; (2) a summary of previous findings; and (3) the proposed scope of work and schedule.

1.0 BACKGROUND INFORMATION

The nearly 2-acre former Bill Cox Cadillac facility is bounded on the northwest by Harrison Street, the southwest by Bay Street, and on the southeast by Vernon Street. The facility has historically been used for automobile sales and services. The onsite activities have included automobile sales, storage, maintenance, repair and painting. Onsite activities have also included use and storage of chemicals associated with these activities, including fuels, oils,

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greases, paint, thinners, and solvents. The facility presently contains an approximately 30,000 square feet vacant building. Approximately 6,500 square feet of the building was used for a sales showroom and offices, while the remainder of the building was used for automobile storage, body work and painting and an indoor service area. The remaining areas of the site are asphalt covered parking areas.

2.0 PREVIOUS FINDINGS

Documentation exists that suggests several potential sources of environmental contamination at the subject site. A waste oil tank was removed from the southern side of the building in December 1988. A mineral spirits tank was removed from the northeast corner of the building in September 1992. A 10,000-gallon gasoline tank was removed from near the southern corner of the building in January 1994. The mineral spirits tank received regulatory closure. The area of the waste oil and 10,000-gallon gasoline tanks is currently being investigated by the former tenant.

Additional potential sources of contamination were noted during a site walk-through performed by PES, Bill Cox and EOA in January 1996. Following the walk-through, PES engaged in a discussion with EOA regarding the areas of concern. An approach for evaluating the subsurface conditions was agreed upon by PES and EOA, and summarized in a PES memorandum dated January 29, 1996. The approximate locations of the potential sources are presented on Plate 2. The following is a brief description of each of the potential sources of contamination to be investigated during this investigation:

Hydraulic Lifts, Floor Drains, and Sumps at Indoor Service Area

During servicing and engine cleaning operations, automotive fluids and possibly solvents may have spilled. Spilled fluids may have flowed into the hydraulic lift pits, and floor drains and sumps. These structures may not have been constructed or maintained to contain such fluids and are therefore potential points of release to soil and groundwater.

Suspected Second Waste Oil Tank near Wash Rack

No documentation exists regarding historical usage of the tank or removal of the tank and evaluation of soil and groundwater conditions if it was removed. Existing groundwater data from the waste oil tank investigation indicated that it is unlikely that this tank represents a significant source of contamination; however, some limited investigation is recommended to verify that the tank is no longer present.

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North Wall Excavation Area

Following the 1989 earthquake, this area was excavated in order to repair the wall. A sheen was observed on the groundwater in the excavation. The potential source of the sheen may have been the automotive fluids used inside the service area or runoff from the asphalt parking area while the excavation was open. Because groundwater contamination has been detected in this area and it has not been established that this area does not represent a continuing problem, the area should be further investigated.

Former Waste Oil Drum Storage Area

Soil sampling previously performed indicated 9,800 parts per million (ppm) of total oil and grease (TOG) and 1,600 ppm of lead in the soil samples. Therefore, further investigation should be performed in this area to evaluate whether significant concentrations of chemicals are present in the soil or the groundwater.

Floor Drains and Sumps in the Paint Booth and Bodywork Area

During the site walk-through, floor drains and a metal covered sump were observed in the painting and bodywork areas. It is currently not known whether these features are part of the same drain system as the service area. Paints, solvents and thinners spilled in this area may have collected in floor drains and sumps. It is unknown whether these structures were constructed and maintained to contain these fluids and are potential points of release of these materials to soil and groundwater.

3.0 SCOPE OF WORK

The scope of work has been divided into four tasks to evaluate the potential for release from the features described above and to evaluate the presence of contaminants in soil and groundwater. These tasks are as follows: (1) engineering drawing review; (2) subsurface utility and pipeline survey; (3) soil and groundwater sampling; and (4) data evaluation and report preparation. Details concerning each of these tasks are summarized below:

Engineering Drawing Review

In order to better understand the historical onsite operations, PES will obtain available engineering drawings from Wells Fargo and the City of Oakland Building Inspection Department to assess construction details of lifts and potential routes of release.

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Utility and Pipeline Survey

PES will retain an underground utility locating contractor to assess the presence of the suspected second waste oil tank near wash rack using either a metal detector or a magnetometer. The size, shape, and location of any ferrous metal anomalies will be documented on scaled site maps and evaluated for consistency with the potential presence of the waste oil tank.

The contractor will also confirm the pipeline locations related to storm drains, sanitary sewers and floor drain systems by locating and marking the pipelines on the ground surface. As a part of this task, the underground utility lines will be located to clear boring locations prior to performing the soil and groundwater sampling in the proposed work area.

Soil and Groundwater Sampling

Prior to soil and groundwater sampling, a site-specific health and safety plan will be prepared and the appropriate permits will be obtained. At present time, only the north wall excavation area and the paint booth and bodywork area will be investigated using soil and groundwater sampling. The paint booth and the bodywork area are located adjacent to the southwestern side of the north wall. Consequently, the presence of impact of either one can be easily evaluated. Three soil borings will be drilled along the north wall to investigate these areas. One of the borings will be located in the bodywork area adjacent to the suspected sump, the second boring will be located in the paint booth adjacent to the floor drain, while the last one will be located south of the paint booth. The proposed sampling locations are presented on Plate 2.

Soil borings will be drilled to the depths ranging from 6 to 8 feet bgs using a direct push coring method. The direct push coring method enables continuous sampling of the soil boring and minimizes the amount of soil cuttings generated. The subsurface soils will be logged from the cores in accordance with the Unified Soil Classification System (USCS) by a PES field geologist. Soil samples from each sampling drive will be retained in cleaned stainless steel liners and will be field screened for volatile petroleum hydrocarbons using a photo-ionization organic vapor meter (OVM). The OVM readings will be recorded on the boring logs and used to assist in selection of samples for laboratory analyses. One sample from each soil boring, which exhibits the greatest indications of contamination, will be selected for laboratory chemical analyses. The sample liners will be sealed with Teflon sheeting, plastic end caps, and adhesive-less silicone tape; labeled with project name and number, boring identification and sample depth, sampling date and time, and requested laboratory analyses; placed in a chilled thermally-insulated chest; and submitted to the project laboratory under chain-of-custody protocol. Specific soil sampling, field screening and documentation procedures are presented in the Appendix.

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After drilling to a depth of at least 2 feet below the first encountered groundwater, a cleaned 1-inch diameter Schedule 40 PVC casing with 5 feet of 0.020 inch machine slotted screen will be placed in the boring for groundwater sampling. Groundwater samples will be collected using a teflon bailer. The samples will be transferred to the appropriate laboratory sample containers by filling slowly to minimize sample volatilization and to ensure that the sample is free of bubbles. Groundwater sample containers will be labeled with project name and number, sample identification number, sampling date and time, and requested laboratory analyses; placed in a chilled thermally-insulated chest; and submitted to the project laboratory for analyses under chain-of-custody protocol. Specific groundwater sampling procedures are presented in the Appendix. After collecting the groundwater samples, the borings will be backfilled from the bottom of the borehole to the ground surface with neat cement.

To avoid cross contamination, drilling and sampling equipment will be decontaminated prior to use and between each sampling location. The equipment will be cleaned using a combination steam/high pressure wash system. Sampling equipment rinseate and soil cuttings will be collected in sealed 5-gallon plastic buckets and stored onsite until appropriate disposal arrangements are made.

Laboratory Analytical Program

Soil and groundwater samples will be submitted for analyses under proper chain-of-custody control to a California-certified laboratory. Soil and groundwater samples collected from all three borings will be analyzed for the following:

- Total petroleum hydrocarbons quantified as gasoline and mineral spirits (TPH-g and TPH-ms), using EPA Test Method 8015-modified;
- Total petroleum hydrocarbons quantified as diesel (TPH-d), using EPA Test Method 8015-modified; and
- Volatile organic compounds (VOCs) using EPA Test Method 8240.

In addition, the soil and groundwater samples collected in the bodywork area and the paint booth will be analyzed for metals common in automotive paints, including arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Methyl ethyl ketone and methyl isobutyl ketone will also be analyzed as a part of the VOC analysis. The samples will be analyzed on a regular 10-day turn-around time.

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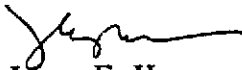
Data Evaluation and Report Preparation

After receiving the analytical data for the soil and groundwater samples, the results of the subsurface investigation will be presented in a report and submitted to Wells Fargo. The report will include: (1) background information; (2) field investigation methods and procedures; (3) a discussion of the results of the investigation, including a graphical and tabular summary of the soil and groundwater sampling data; (4) conclusions regarding the presence of a source of contamination at the site; and (5) recommendations, as appropriate.

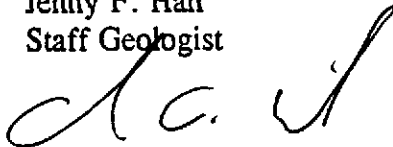
PES can commence work immediately upon approval of this work plan. We anticipate that Tasks 1 through 3 for the investigation will require approximately three weeks to complete, assuming prompt availability of subcontractors. Assuming a standard 10-day turnaround time for laboratory analyses, a report will be submitted to Wells Fargo approximately three weeks after completion of Task 3. We trust that this work plan provides you with the information you require at this time and meets with your approval. If you have any questions or require additional information, please call either of the undersigned.

Yours very truly,

PES ENVIRONMENTAL, INC.



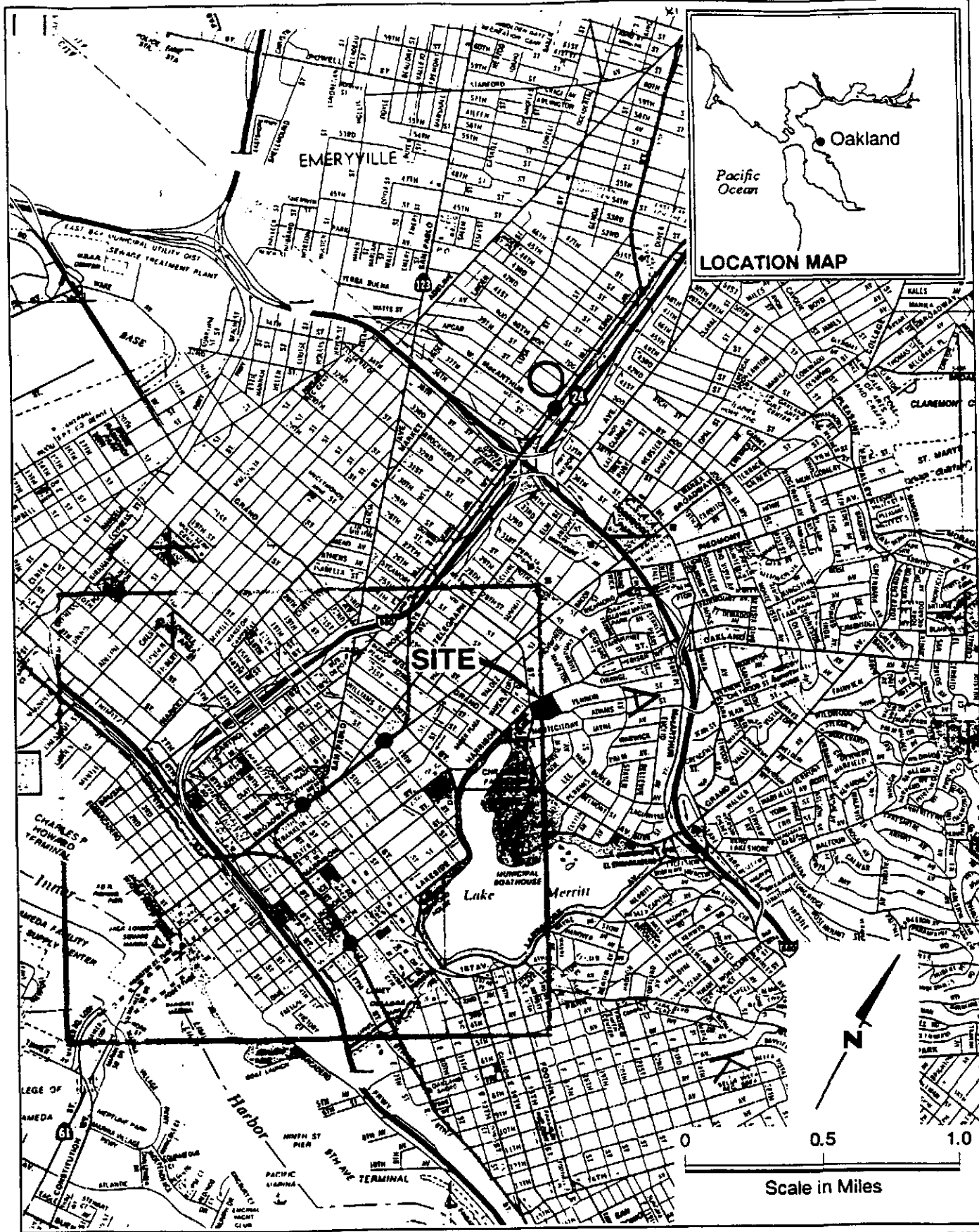
Jenny F. Han
Staff Geologist



Andrew A. Briefer, P.E.
Associate Engineer

cc: Debra Watanuki - Hanson, Bridgett, Marcus, Vlahos, & Rudy
Don Eisenberg - Eisenberg, Olivieri, and Associates
Dale Klettke - Alameda County Environmental Health Services

Attachments: Plate 1 - Site Location Map
Plate 2 - Site Plan
Appendix - PES Field Sampling Methodologies and Protocols



PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Cox Cadillac
230 Bay Place
Oakland, California

PLATE

1

JOB NUMBER
167.0200.002

REVIEWED BY
Jh

DATE
2/96

RE VISIT DATE

RE VISIT DATE

FRANK TINLEY

KIRK ZACHARIAS

HOWARD

835-4700

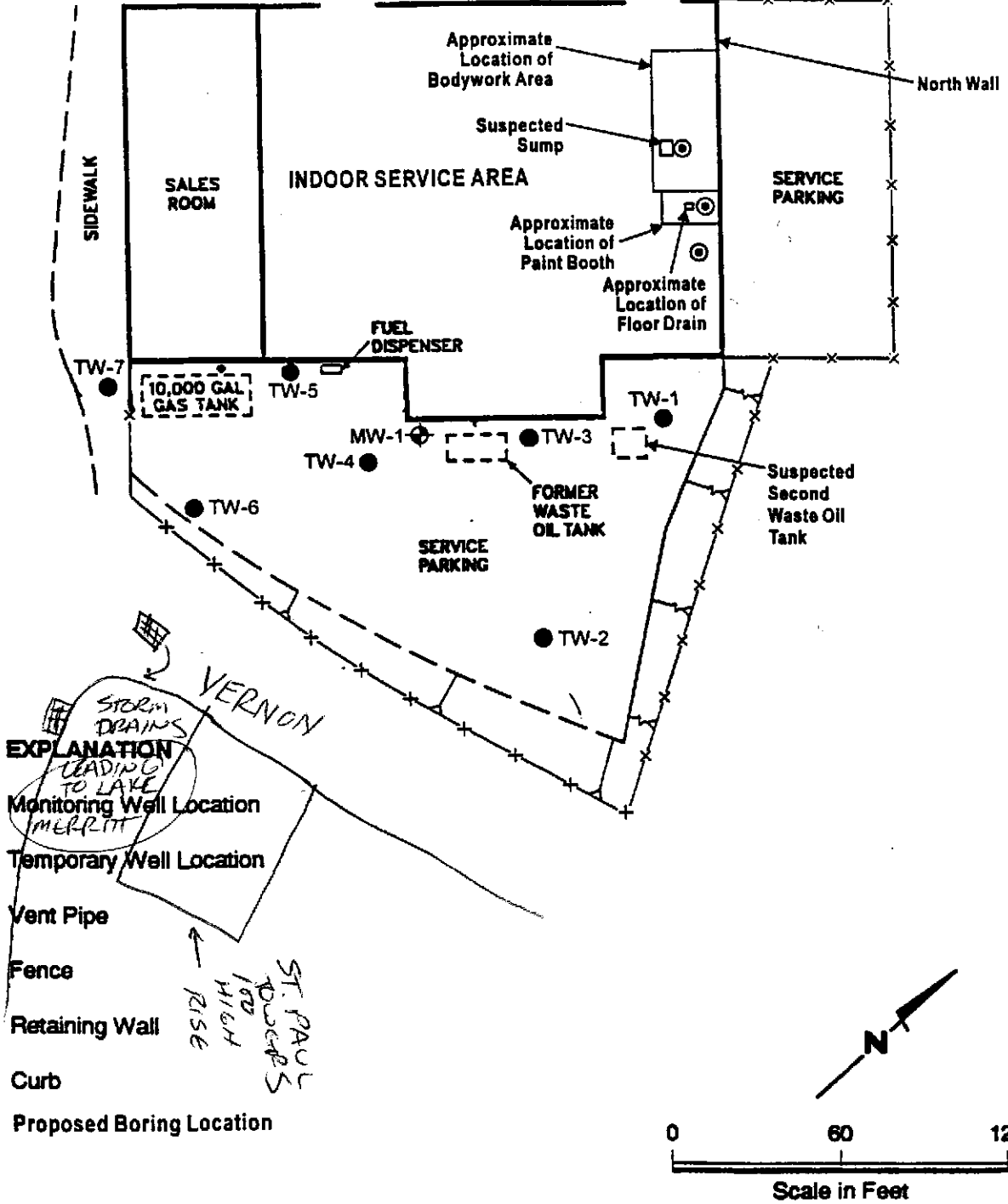
BANCHEFSKY
238-3284
VETERANS MEMORIAL
BUILDING

HARRISON STREET

27th STREET ↑

ELEVATION 7
H BEGL
BMW
AUDI
BAY PLACE

PARKSIDE
MANDR
123



EXPLANATION
LEADING TO LAKE
MERRITT

- ◆ MW-1 Monitoring Well Location
- TW-1 Temporary Well Location
- Vent Pipe
- ××× Fence
- Retaining Wall
- - - Curb
- ⊙ Proposed Boring Location

ST. PAUL
ROCKERS
100
HIGH
RISE

0 60 120
Scale in Feet



PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Cox Cadillac
230 Bay Street
Oakland, California

PLATE
2

167.0200.003
JOB NUMBER

167020S1.CDR
DRAWING NUMBER

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REVIEWED BY

2/96
DATE

APPENDIX**PES FIELD SAMPLING METHODOLOGIES AND PROTOCOLS
SUBSURFACE INVESTIGATION
BILL COX CADILLAC
230 BAY STREET
OAKLAND, CALIFORNIA**

The following sections describe specific sampling and measurement procedures that will be used to implement the attached Work Plan. Sample custody procedures for handling, packaging, transport, and chain-of-custody are also described and included as part of this appendix. In the event that findings from the Work Plan necessitate expansion of field activities to include sampling methodologies not presented herein, this appendix will be modified, as appropriate, and attached to future work plans.

A1 SOIL SAMPLING

Surface and subsurface soil samples for lithologic description, chemical analysis, and/or physical analysis will be collected using the procedures described herein. In general, soil samples will be collected using a direct push sampling rig. Sampling will be directed at the site by the geologist or engineer and will be conducted according to the following procedures:

1. The geologist or engineer will direct the drilling so that samples are collected at proper intervals. Soil samples collected for chemical analysis and for lithologic description will be collected with continuous coring sampler and retained in stainless steel liners.
2. Soil sampling equipment (e.g., continuous coring sampler and stainless steel liners, etc.) will be cleaned prior to each use and between sampling. Soil sampling equipment will be either steam cleaned, or washed with phosphate-free detergent and rinsed one time each with potable water and deionized/distilled water. Wash solutions and rinse water will be replaced prior to sampling at each boring location.
3. The driller will provide the geologist or engineer with information on the hydraulic pressure it takes to drive the sampler into the soil per six-inch interval. The hydraulic pressure will be recorded on the lithologic log by the geologist or engineer. An example of a lithologic log is presented in Attachment A-1.
4. The liner in the continuous coring sampler collected at the desire depth will be retrieved for laboratory analysis. If additional samples are required, the liner collected either above or below will be capped and labeled for laboratory analysis.
5. The amount of sample recovery from the sampler will be observed and recorded. The sample lithology will be described using soil in unused liners.

6. Samples collected in liners will be capped on both ends with plastic caps and Teflon™ sheeting, and taped to the liner using silicone tape to minimize moisture loss.
7. The geologist or engineer will label each sample container, complete appropriate chain-of-custody forms presented in Appendix A, and will:
 - Package the samples according to procedures outlined in Section A5.
 - Place the samples in a cooler containing blue ice for preservation and ship to the appropriate analytical laboratory.

Equipment that comes in contact with soil or groundwater during sample collection or drilling will be steam-cleaned or pressure-washed before use at any other boring location (as described in Section A3). The borings will be backfilled with a Portland cement/bentonite slurry to the ground surface. The bentonite content of the slurry will not exceed 5-percent by weight.

A1.1 Field Screening of VOCs in Soil Samples

Soil samples will be collected regularly during the continuous coring activities and screened for VOCs in the field using a photoionization detector (PID). PID readings will be recorded on the lithologic log. The following procedures will be used for field screening:

1. The PID will be calibrated according to manufacturer's instructions using a standard gas prior to sampling activities at the site each day, or as necessary.
2. Soil samples will be placed in sealed plastic bags immediately after removal from sample collection equipment.
3. The PID probe will be inserted through a small opening in the plastic bag. The introduction of ambient air into the bag will be minimized.
4. The VOC concentration measured by the PID will be entered on the lithologic log in the space provided for the soil sample being screened.

A1.2 Lithologic Logging

A complete log of conditions encountered during drilling will be maintained by the geologist or engineer using the Unified Soil Classification System. A boring log form will be used to record field observations. Lithologic soil sampling will consist of continuous coring.

The geologist or engineer will obtain a soil sample either as a grab sample from the sampler. The type of soil samples and the frequency of sampling are specified in the Work Plan. The lithologic log will contain the following information as a minimum:

1. Boring identification;
2. Boring location;
3. Equipment type;
4. Sample depths;
5. Color of soil samples;
6. Grain size of soil samples;
7. Relative percentage of grain sizes;
8. Descriptive comments;
9. Estimated relative moisture content;
10. Depth where saturated conditions (groundwater) are first encountered;
11. Variations in drilling rates and rig behavior; and
12. Signature of observer.

A1.2.1 Soil Logging Procedures

This section explains procedures that will be used to describe soil samples. Variations from these procedures will be edited by a registered geologist, certified engineering geologist, or professional engineer before each log is drafted. Each stratum of soil will be identified by the following items in the order given: color, soil type, classification symbol, consistency or relative density, moisture, structure (if any), and modifying information such as grain sizes, particle shape, cementation, plasticity, stratification, etc. Some examples and guidelines are presented below:

- YELLOW-BROWN SANDY CLAY (CL) - 10 YR, 5/4 - stiff, moist, fissured, with occasional angular gravel to 1 inch in size, landslide debris (with Munsell color chart).
- GRAY-BROWN GRAVELLY CLAYEY SAND (SC) medium dense, saturated, fine-grained, less than 10 percent gravel, 10 percent clay, alluvium (without Munsell chart).
- Editorial comment, estimates, and notes on drilling procedure or difficulty will be set apart in parenthesis.
- Dual symbols such as CL-ML will not be used.

A1.2.1.1 Color

Color will be described by comparing the soil sample with a Munsell color chart and applying the correct designations and descriptions. If the Munsell color chart is not available, colors will be described using only red, green, yellow, purple, blue, black, brown, gray, white or orange. Descriptions such as tan, buff, etc., will be avoided, though modifiers such as light or dark are acceptable. Dual color descriptions (red-brown) can also be used.

A1.2.1.2 Consistency

An estimate of consistency will accompany descriptions of all fine-grained soils (silts and clays where more than 50-percent of the material would pass the No. 200 sieve). The following consistency terminology will be used:

<u>Consistency</u>	<u>Identification Procedures</u>
Very Soft	Very easily penetrated several inches with thumb
Soft	Easily penetrated several inches by thumb
Medium stiff	Penetrated several inches by thumb with moderate effort
Stiff	Readily indented by thumb nail
Hard	Indented with difficulty by thumb nail

A1.2.1.3 Natural Density

Descriptions of coarse-grained soils will be accompanied by an estimate of the relative density. Coarse-grained soils are defined as sands and gravels in which less than 50-percent of the material would pass the No. 200 sieve and 100-percent would pass the 3-inch size sieve. Typically, density is determined using blow counts, however, direct push coring method does not produce blow counts. Consequently, evaluation of relative density in the field is a decision based on judgment. Generally an estimate of "loose" or "dense" will be considered sufficient.

A1.2.1.4 Moisture

Moisture content will be estimated and described using only the terminology described herein. If necessary, lithologic logs will be corrected after laboratory moisture contents are performed. An estimate of the moisture content will be included after the soil description and the estimated consistency or natural density. The following terms will be used: "dry", "moist", "wet", "saturated" (below the water table).

A1.2.1.5 Other Data

Other descriptive information that will be included, if applicable, is the approximate percentage of clay, silt, sand, and gravel; average grain size and maximum size of particles; shape/angularity of coarse grains; general composition or mineralogic description of grains (e.g., granitic, micaceous, etc.) coatings on coarse grains; plasticity; organic content; cementation; and local or geologic name.

4. Fill out field sample log and chain-of-custody form as described in Section A5.
5. Place samples into thermally insulated coolers chilled to about 4 degrees Celsius using ice or blue ice.
6. Include the top two copies (white and yellow) of the completed chain-of-custody form inside the cooler. Chain-of-custody forms will be protected from moisture by placing them inside plastic bags taped to the inside of the lid of the cooler.
7. Seal the cooler with strapping tape or other appropriate mechanical fastening.
8. Fasten custody seals.
9. Coolers will be delivered to the analytical laboratory by PES personnel or by designated couriers.

A3 EQUIPMENT DECONTAMINATION

All equipment that comes in contact with soil, or water will be decontaminated before and after use. Decontamination procedures are described below:

1. Downhole equipment on Direct Push Sampling rig such as coring equipment, drive tip, and stainless steel liners will be steam-cleaned or pressure washed prior to use at the site, before each boring, and before demobilization from the work area.
2. Non-disposable bailers will be steam-cleaned or washed with phosphate-free detergent solution and rinsed twice in distilled or deionized water prior to each use. Bailer cord used with the bailers that has been in contact with water in the boring will be discarded and replaced with new cord after each sample is collected.

A4 DISPOSAL PROCEDURES

Fluids generated during the investigation will be stored in appropriate containers, sampled and analyzed for constituents detected during the investigation. Based on these results, handling, storage, and disposal will be conducted in accordance with applicable federal and state regulations. Temporary storage of these materials will be in bins, tanks, or 55-gallon drums until analyses are complete and an acceptable means of disposal has been determined. All bins, tanks, or 55-gallon drums will be clearly labeled and stored in a secure location until final disposal is arranged.

Drilling fluids will be characterized by analyzing for compounds detected in the groundwater during investigation activities. These materials will be disposed at an appropriate offsite facility if chemicals of concern are detected in samples collected for characterization purposes.

A5 SAMPLE CUSTODY PROCEDURES

This section describes standard sample custody procedures during the investigation(s). Sample custody procedures will be followed through sample collection, transfer, analysis, and ultimate disposal to ensure that: (1) the integrity and traceability of samples is maintained during their collection, transportation, and storage prior to analysis, and (2) sample material is properly disposed after analysis. Sample custody is divided into field procedures and laboratory procedures, as described below.

A5.1 Field Procedures

Each sample will be labeled and sealed immediately after collection. Sample identification documents will be prepared so that identification and chain-of-custody forms can be maintained and sample disposition can be controlled. Forms will be filled out with waterproof ink. Identification documents that will be used during the investigation(s) are listed below and samples of the documents are presented in Attachment A-1.

1. Sample Labels;
2. Field Investigation Daily Reports;
3. Field Lithologic Logs; and
4. Chain-of-Custody Forms.

A5.1.1 Sample Labels

Sample labels are necessary to ensure proper sample identification. Pre-printed sample labels will be provided. The following information will be specified on each label:

1. Project name;
2. Project number;
3. Field identification number or sample identification number;
4. Date and time of sample collection;
5. Preservative used (if applicable); and
6. Analyses required.

A5.1.2 Field Investigation Daily Report

A field log will be used to record daily activities as they relate to the progress of the investigation. The field logs will be retained in the project files according to project number for that task. Entries in the field reports will contain the following information:

1. Name of author, time and date of entry, weather conditions;
2. Location of sampling or measurement activity;
3. Names and affiliations of personnel onsite;
4. Sample collection or measurement method(s);
5. Number and volume of sample(s) taken for each analysis;
6. Description of sampling point(s);
7. Date and time of collection or measurement;
8. Sample identification number(s);
9. Sample preservation (if any);
10. Sample distribution (e.g., laboratory);
11. Field observations during sampling;
12. Field measurements (conductivity, temperature, turbidity, and pH);
13. Summary of daily activities;
14. Equipment onsite;
15. Descriptions of deviations from sampling plans;
16. Chain-of-custody number, sample destination, and time of pickup;
17. Project number;
18. Name of sampler(s);
19. Sampling methods; and
20. Personal protective equipment used.

A5.1.3 Chain-of-Custody Form

Every sample will be listed on a chain-of-custody form. The form will accompany every sample shipment to the analytical laboratory to document sample possession from the time of collection. A copy of the chain-of-custody form will be retained in the project files according to project number. The form will contain the following information:

1. Sample identification number;
2. Signature of collector (sampler);
3. Date and time of collection;
4. Site name and project number;
5. Sample Matrix;
6. Sample container description;
7. Analyses requested;
8. Special analytical procedures requested;
9. Laboratory sample number;
10. Remarks (expected interferences, hazards, unusual events at the time of sampling, presence of headspace);

11. Preservatives added (if any);
12. Filtering (if applicable);
13. Destination of samples (laboratory name);
14. Signature of persons involved in chain of possession (relinquished by and received by);
and
15. Date and time of sample receipt.

A5.1.4 Sample Transfer and Shipment

Samples will be accompanied by a chain-of-custody form. When transferring samples, the individuals relinquishing and receiving the samples will sign, date, and record the time on the chain-of-custody form. Samples will be packaged properly for shipment and dispatched to the appropriate laboratory for analysis. A separate chain-of-custody form will accompany each shipment. The method of shipment and courier name(s) will be entered on the chain-of-custody form. When samples are shipped to the laboratory all shipping containers will be sealed with strapping tape to ensure that samples are not tampered with.

A5.2 Corrections to Documentation

Original data recorded in field logs, chain-of-custody forms, and on other forms will be written in waterproof ink. None of these documents will be destroyed or discarded, even if they are illegible or contain inaccuracies that require a replacement document.

If an error is made on a document assigned to one individual, that individual will make corrections by drawing a line through the error, entering the correct information, and initialing and dating the change. The erroneous information should not be obliterated. If possible, any subsequent error(s) discovered on a document will be corrected by the person who made the entry.

APPENDIX TABLES

Table A-1 Sample Containers and Handling Protocols For Groundwater Samples

TABLE A-1

**Sample Containers and Handling Protocols
For Water Samples**

Bill Cox Cadillac
Oakland, California

Analyte Group	EPA Test Method	Type of Container	Number of Containers Sample Size	Preservation	Maximum Holding Time
Total Petroleum Hydrocarbons as gasoline and mineral spirits	Method 8015 modified	40 mL Volatile Organic Analysis vials (VOAs)	3	Hydrochloric Acid (HCl) Cool to 4°C	14 days
Total Petroleum Hydrocarbons as diesel	Method 8015 modified	Glass amber 1 Liter	2	Cool to 4°C (ice in cooler)	7 days
Volatile Organic Compounds	Method 8240	40 mL VOAs	3	HCl Cool to 4°C	14 days
RCRA 8-Metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver)	California Title 22 (Total Threshold Limit)	Plastic container 1 Liter	1	Nitric Acid (HNO ₃)	7 days for Mercury 6 months for other metals

APPENDIX ATTACHMENT A-1

Investigation Forms



PES Environmental, Inc.
Engineering & Environmental Services

1682 Novato Blvd.
Suite 100 (415) 899-1600
Novato, CA 94947 FAX (415) 899-1601

PROJECT NAME _____
PROJECT # _____
DATE _____ TIME _____
SAMPLE # _____
ANALYSIS _____
NOTE/PRES. _____



PES Environmental, Inc.
Engineering & Environmental Services

1682 Novato Blvd.
Suite 100 (415) 899-1600
Novato, CA 94947 FAX (415) 899-1601

PROJECT NAME _____
PROJECT # _____
DATE _____ TIME _____
SAMPLE # _____
ANALYSIS _____
NOTE/PRES. _____



PES Environmental, Inc.
Engineering & Environmental Services

1682 Novato Blvd.
Suite 100 (415) 899-1600
Novato, CA 94947 FAX (415) 899-1601

PROJECT NAME _____
PROJECT # _____
DATE _____ TIME _____
SAMPLE # _____
ANALYSIS _____
NOTE/PRES. _____



PES Environmental, Inc.
Engineering & Environmental Services

1682 Novato Blvd.
Suite 100 (415) 899-1600
Novato, CA 94947 FAX (415) 899-1601

PROJECT NAME _____
PROJECT # _____
DATE _____ TIME _____
SAMPLE # _____
ANALYSIS _____
NOTE/PRES. _____



**DRIVER
RECEIPT**

ROUND TRIP	COURIERS, INC. (510) 945-4994 1-800-4-COURIER	JOB #
SAME-DAY		384-32
4 HR. DEL. BY:		DATE 4.9

Rush

REFERENCE
CCUS

DRIVER <i>722</i>	PIECES	WEIGHT	AUTHORIZED BY
----------------------	--------	--------	---------------

CONTACT *Sharon* ROOM FLR

SHIPPER *EOA*

ADDRESS *1410 Jackson St*

CITY *Oakland*

CONTACT *Dave Klettke* ROOM FLR

DELIVER TO *Alameda Cnty Health*

ADDRESS *1751 Harbor Bay Pkwy*

CITY *Alameda*

RECEIVED IN GOOD CONDITION BY:

x [Signature] TIME *1155*

PRINT NAME

SECOND SIGNATURE

PRINT NAME

WHITE - Shipper CANARY - File PINK - Consignee

In tendering this shipment, Shipper agrees that CCX Couriers, Inc. shall not be liable for special, incidental or consequential damages arising from the carriage hereof. CCX Couriers, Inc. disclaims all warranties, expressed or implied, with respect to this shipment. The liability of CCX Couriers, Inc. for any loss or damage shall be limited to \$50.00.

QUICK • RELIABLE • SECURE



FIELD LITHOLOGIC LOG

Number: _____

Type: _____

DATE: _____	PAGE _____	OF _____
JOB NUMBER: _____		
PROJECT: _____		
PROJECT MANAGER: _____		
LOGGED BY: _____		
CONTRACTOR: _____		
C-57 LICENSE NO: _____		
DRILLING EQUIPMENT: _____		
BOREHOLE DIAMETER: _____		
TOTAL DEPTH OF BORING: _____		
SAMPLING METHOD: _____		
SAMPLER DIAMETER: _____		
DRIVE WEIGHT: _____	DROP: _____	
START/STOP TIME: _____		
BACKFILL METHOD: _____		
SURFACE ELEVATION: _____		
SURFACE CONDITIONS: _____		
WEATHER: _____		
COMMENTS: _____		

LOCATION SKETCH SCALE 1"= _____ NORTH ARROW



SAMPLE ID	TIME	PID (PPM)	BLOWS/6 INCHES	INCHES ADVANCED	INCHES RECOVERED	SAMPLE RECOVERED	GW DEPTH	DEPTH (FEET)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
										COLOR, SOIL TYPE (SYMBOL) Munsell Number, Moisture, Consistency, Grain Size, Estimated Percentages (%gravel, %sand, %fines), Other (Angularity, Shape, Odor, Structure, Strength, Dilatancy, Toughness, Plasticity, etc.)
								1		
								2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		
								10		

LOGGED BY: _____

REV. 2/14/96

SIGNATURE

EDITED BY: _____

INITIALS

SIGNATURE



FIELD LITHOLOGIC LOG (CONTINUED)

Number: _____ Type: _____

DATE:	PAGE	OF
PROJECT:		
JOB NO:		
LOGGED BY:		

COMMENTS:

SAMPLE ID	TIME	PID (PPM)	BLOWS/6 INCHES	INCHES ADVANCED	INCHES RECOVERED	SAMPLE RECOVERED	GW DEPTH	DEPTH (FEET)	GRAPHIC LOG	LITHOLOGIC DESCRIPTION
										COLOR, SOIL TYPE (SYMBOL) Munsell Number, Moisture, Consistency, Grain Size, Estimated Percentages (%gravel, %sand, %fines), Other (Angularity, Shape, Odor, Structure, Strength, Dilatancy, Toughness, Plasticity, etc.)
								1		
								2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		
								0		
								1		
								2		
								3		
								4		
								5		
								6		
								7		
								8		
								9		
								0		

LOGGED BY: _____

EDITED BY: _____

REV. 2/14/96

SIGNATURE

INITIALS

SIGNATURE

CHAIN OF CUSTODY RECORD

JOB NUMBER: _____

NAME/LOCATION: _____

PROJECT MANAGER: _____

SAMPLERS: _____

RECORDER: _____
 (Signature Required)

ANALYSIS REQUESTED

EPA 601/8010										
EPA 602/8020 (BTEX)										
EPA 624/8240										
EPA 625/8270										
TPH by 5030/8015 (mod)										
TPH by 3550/8015 (mod)										

DATE				SAMPLE NUMBER/ DESIGNATION
YR	MO	DY	TIME	

SOURCE CODE	MATRIX					# CONTAINERS & PRESERV.					DEPTH IN FEET	COL MTD CD	QA CODE	
	Water	Sedimt	Soil	Oil		Unpres.	H ₂ SO ₄	HNO ₃	HCl	Filtered				

NOTES	CHAIN OF CUSTODY RECORD							
	RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)		DATE	TIME	
	RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)		DATE	TIME	
	RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)		DATE	TIME	
	RELINQUISHED BY: (Signature)			RECEIVED BY: (Signature)		DATE	TIME	
	DISPATCHED BY: (Signature)		DATE	TIME	RECEIVED FOR LAB BY: (Signature)		DATE	TIME
	METHOD OF SHIPMENT:							