



**CITY OF EMERYVILLE  
REDEVELOPMENT AGENCY**

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November 6, 1990

Mr. Dennis Byrne  
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Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

Dear Mr. Byrne:

Please find enclosed for your information and records a copy of the report entitled "Hazardous Materials Investigation/Demolition Monitoring: Transo/Lacoste Site (Parcels 4-2 and 4-3) Emeryville, California." This report was prepared for the Emeryville Redevelopment Agency by the firm of Harding Lawson Associates.

Please contact me at (415)596-4350 if you have any questions on the above report.

Sincerely,

IGNACIO DAYRIT  
Projects Coordinator

BS-RPRT.LTR

A Report Prepared for

City of Emeryville Redevelopment Agency  
2200 Powell Street, 12th Floor  
Emeryville, California 94608

HAZARDOUS MATERIALS  
INVESTIGATION/DEMOLITION MONITORING  
TRANSO/LACOSTE SITE (PARCELS 4-2 AND 4-3)  
EMERYVILLE, CALIFORNIA

HLA Job No. 2421,014.03

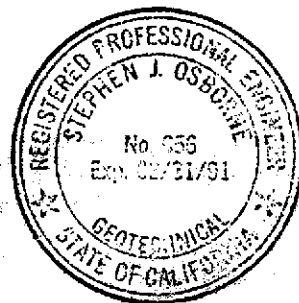
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DISTRIBUTION



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## 1.0 INTRODUCTION

This report presents the results of hazardous materials investigations and demolition monitoring conducted by Harding Lawson Associates (HLA) at Parcels 4-2 and 4-3 (the Transo/LaCoste site) in Emeryville, California (see Plate 1). The City of Emeryville Redevelopment Agency (City) has purchased these parcels as part of the Bay Street-Shellmound Street extension project.

Parcel 4-2, located at 1600 64th Street, was purchased from the Transo Envelope Company (Transo) and Parcel 4-3, 6401 Bay Street, from the LaCoste Meat Company (LaCoste). The site (shown on Plate 2) is bordered on the east by the Southern Pacific Railroad tracks, on the south by 64th Street, on the west by the Emery Bay Apartments, and on the north by Bay Street and a parking lot for the Emery Bay Apartments.

The purpose of HLA's investigations was to evaluate the presence of hazardous materials in soil and groundwater beneath the site and to assess the need for remediation. We also monitored the demolition of one of the LaCoste building foundations to assist the City with further assessment of hazardous materials (including asbestos) encountered in fill material during the demolition. Our scope of work was described in two proposals to the City (dated December 22, 1989 and February 15, 1990) and in a preliminary budget estimate letter dated March 5, 1990 for services during demolition of the LaCoste building foundation. Our work was authorized by the City in a

Personal Service Agreement (Agreement), dated November 17, 1989 and an amendment to that Agreement dated March 14, 1990.

The scope of our work, conducted between December 1989 and March 1990, is summarized below:

1. Drilled and sampled ten soil borings;
2. Converted six of the soil borings to groundwater monitoring wells and collected water samples from the wells;
3. Performed hydraulic testing on three of the monitoring wells;
4. Observed the removal of an ethyl alcohol storage tank on the Transo Parcel, and a building foundation on the LaCoste Parcel;
5. Conducted air monitoring for airborne asbestos fibers during the demolition of the LaCoste building foundation;
6. Collected soil samples during removal of the LaCoste building foundation and after removal of the ethyl alcohol tank;
7. Performed chemical analyses on samples;
8. Prepared this report.

HLA's scope of work did not include the excavation and removal of approximately 16 cubic yards of an oily waste material illegally deposited on the Transo/LaCoste site in late August 1990 and subsequently discovered by the City. The City retained Erickson, Inc. to excavate and off-haul the material to a hazardous waste facility. Mr. Rich Lodge of Erickson, Inc. told us that the oily material was removed from the site in mid-September 1990 under hazardous waste manifest and was disposed at

the Chemical Waste Management, Inc. hazardous waste landfill in  
Kettleman City, California.

## 2.0 BACKGROUND

### 2.1 Previous HLA Work

HLA presented the results of a preliminary hazardous materials site assessment (PSA) at this site in a report dated December 28, 1989, (HLA Job No. 2421,010.03). In that report, we concluded that the site is within an industrial area with known sources of contamination. Our study led to the field investigations which are the subject of this report.

In addition to the December 1989 PSA report, HLA also issued three progress reports to the City during the subject field investigations: a letter dated February 12, 1990 (HLA Job No. 2421,010.03) which summarized the findings of our first phase of field work (drilling and sampling borings B-1, B-2, and MW-1 through MW-3); a letter dated March 9, 1990 (HLA Job No. 2421,010.03) with results of chemical analyses on a sample of water taken from a concrete vault during demolition of the LaCoste building foundation; and a letter dated June 22, 1990 (HLA Job No. 2421,014.03), with our recommendations for disposal of a soil stockpile at the site.

### 2.2 Site History and Surrounding Uses

The subject site is surrounded by sites with documented soil and groundwater contamination, mainly on two properties in the immediate vicinity, the Emery Bay Public Market and the Emery Bay Apartments (see Plate 2). The public market, just south of the subject site across 64th Street, has known soil and groundwater

contamination, the extent of which is still being characterized. The site of the Emery Bay Apartments, west of the subject site, has total petroleum hydrocarbons (TPH) as gasoline and diesel fuel at concentrations up to 5250 parts per million (ppm) in soil, and up to 240 ppm in groundwater. These sites are further discussed in Sections 2.2.1 and 2.2.2.

The Transo/LaCoste site was developed on fill placed since the late 1800's.\* Prior to landfilling in this area, the shoreline of San Francisco Bay extended eastward to approximately Bay Street. According to Mr. Wally Kolb of the Emeryville Public Works Department, the LaCoste building was present since the early 1900's and was used as a slaughterhouse and meat packing plant. The Transo building was built in 1970, according to Mr. Ignacio Dayrit of the City, and was an envelope manufacturing facility. In 1989, the City condemned both parcels and entered into condemnation proceedings with the property owners to purchase the sites as part of the Bay Street-Shellmound extension project. Buildings on both sites were demolished by Charles S. Campanella, Inc. (Campanella) in February and March 1990.

2.2.1 Emeryville Public Market

Between 1884 and 1964, the public market site was owned by Paraffine Companies, Inc., which changed its name to PABCO in the 1920's.\* PABCO manufactured roofing felt and other

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\* Earth Metrics, Inc., "Draft Soils Contamination Characterization Plan for Garrett Freight Lines Emeryville Site", prepared for the Martin Company, March 14, 1986.

building materials there, and refined asphalt. The site is built on fill placed in the late 1800s, consisting of clayey and sandy soil mixed with construction spoils and industrial waste (including asbestos impregnated tar paper). Known subsurface contaminants include lead and TPH as diesel fuel and as oil and grease in soil, and a refined asphalt-like material similar to kerosene in soil and groundwater. A free product plume of diesel fuel and/or kerosene exists on the northeast corner of the site, where the asphalt refinery was located.\*

HLA understands that during construction of the Public Market, some contaminated fill material was excavated and removed from the site and that other wastes were capped on-site. The owners are apparently waiting for further characterization of the problems before initiating further soil and/or groundwater remediation.

#### 2.2.2 Emery Bay Apartments

The site of the apartments was previously used by Garrett and Delta Truck Lines, who had 11 underground fuel storage tanks there (Earth Metrics, Inc., March 14, 1986). Methane gas, lead, and zinc have been found in fill material beneath the site. Some soils containing high levels of petroleum hydrocarbons associated with the previous fuel tanks have been remediated on

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\* Earth Metrics, Inc., "Final Proposal to Remediate the Marketplace and Nielsen Sites in Emeryville, California", prepared for Alameda County Hazardous Materials Unit, May 16, 1988.



site and/or removed. Some contaminated soils have apparently been capped on site under the parking garage. A gas warning system for methane has been installed. Groundwater is currently being remediated by pumping it through an air-stripper and discharging the treated water to the sewer.

### 3.0 FIELD INVESTIGATION AND CHEMICAL ANALYSES

#### 3.1 Field Investigation

The field work for this investigation consisted of the following tasks, which were completed between December 1989 and April 1990:

1. Drilling and sampling 10 soil borings; converting 6 of them to groundwater monitoring wells; and sampling water from the wells;
2. Conducting hydraulic testing;
3. Monitoring and sampling during demolition of a building foundation and removal of an ethyl alcohol storage tank.

These tasks are further described below. The standard field procedures employed are in Appendix A.

##### 3.1.1 Exploratory Borings - Monitoring Wells

HLA conducted subsurface exploration to characterize soil and groundwater in two phases. Phase I consisted of drilling five borings (B-1, B-2, and MW-1 through MW-3), converting three of them to monitoring wells, and sampling soil and groundwater. Phase II, based on the results of analyses on Phase I samples, included five new borings (B-3, B-4, and MW-4 through MW-6), three of which were converted to additional wells, and further sampling and analyses.

On December 28 and 29, using a drill rig equipped with 8-inch-diameter hollow-stem augers, we drilled and sampled Borings B-1, B-2 and MW-1 through MW-3 (see Plate 3) to depths ranging from 16.5 to 21.5 feet. Soil samples were collected at

three to five foot intervals in each boring. An HLA field engineer logged the borings in accordance with the Unified Soil Classification System (see Plate B-1, Appendix B). Logs of these borings are in Appendix B. MW-1 through MW-3 were converted to monitoring wells consisting of 2-inch-diameter polyvinylchloride (PVC) plastic well casing and screen. Well completion details are in Appendix C.

On December 29, 1989, we purged and sampled water from MW-1 through MW-3. Soil samples from the borings and water samples from the wells were stored in cooled ice chests and delivered under chain-of-custody to Med-Tox Associates, Inc. (Med-Tox), a state-certified chemical testing laboratory in Pleasant Hill, California. Water-level measurements were obtained in the monitoring wells, using a chalked steel tape, and recorded to the nearest hundredth of foot to establish the hydraulic gradient. Water levels are listed in Table 1.

After reviewing the results of analyses on soil and water samples obtained in December 1989, HLA recommended further soil and groundwater investigation to adequately characterize the site. Phase II work began on March 20, 1990.

On March 20 and 21, we drilled Borings B-3, B-4, and MW-4 through MW-6 (see Plate 3) to depths ranging from 11.5 to 16.5 feet, using the same drilling methods employed during the first phase of drilling. Soil samples were gathered from each boring for chemical analysis. MW-4 through MW-6 were converted to monitoring wells, using the same construction methods used for

MW-1 through MW-3. Logs of these borings and well completion details are in Appendices B and C, respectively.

On March 23 and 24, 1990, we purged and sampled MW-1 through MW-6. These water samples, along with soil samples obtained during the March 1990 drilling, were kept in cooled ice chests and delivered under chain-of-custody to Sequoia Analytical Laboratory (Sequoia) in Redwood City, California (a state-certified chemical testing laboratory). After developing and sampling the wells, and allowing time for the water levels to equilibrate, water levels were taken in all wells. Water levels are listed in Table 1.

### 3.1.2 Hydraulic Testing

On January 5, 1990, hydraulic testing was conducted in MW-1 through MW-3 to collect data for evaluation of shallow saturated zone hydraulic characteristics. The purpose of the testing was to provide data for evaluating feasible groundwater remediation methods, if needed, and their approximate cost. Parameters whose values can be estimated from single-well slug tests include hydraulic conductivity (K) and transmissivity (T). Hydraulic conductivity is a measurement of the ease with which water can move through a porous aquifer. Transmissivity is the hydraulic conductivity multiplied by the thickness of the aquifer.

The hydraulic conductivity of the shallow sediments was estimated from the results of slug-withdrawal tests

conducted on MW-1 through MW-3. A single-well slug test was performed at each location. Equilibrium water levels were compared with stratigraphic logs of the wells to classify the sediments adjacent to the screen as hydraulically confined or unconfined. A centrifugal suction pump was used to rapidly remove a volume (slug) of water from the wells. Table 2 summarizes the conditions of the slug tests.

A pressure transducer, placed near the bottom of the wells, was used to measure water-level recoveries following slug withdrawals. The output of the transducer was interpreted and recorded with a data logger. Data were plotted on graphs for the chosen method of analysis. Graphs of the analysis and a discussion of methods used are presented in Appendix D.

### 3.1.3 Monitoring and Sampling During Demolition

The City retained Campanella to demolish the Transo and LaCoste buildings. The work described below was conducted during the demolition and observed by HLA.

On February 22, 1990, after obtaining a permit from the Alameda County Health Agency (County Health), Campanella removed a partially buried ethyl alcohol storage tank from under the loading dock in the southeast corner of the Transo building (just north of MW-1). Most of the tank was above ground within the elevated loading dock; the bottom of the tank was approximately one to two feet below grade. An inspector from the Emeryville Fire Department (Mr. George Warren) and an HLA

geologist observed this work. The approximately 300-gallon tank was of single-wall steel, coated with tar on the outside. The tank was visually inspected upon removal and found to have no signs of holes or cracks. The tank was hauled off site under hazardous waste manifest by Erickson, Inc., and recycled as scrap steel at Erickson's facility in Richmond, California.

Under the supervision of an inspector from County Health (Mr. Dennis Byrne), HLA gathered two soil samples (S-1 and S-2, shown on Plate 3), one at each end of the tank, and approximately one to two feet below its bottom. The samples were collected by driving stainless steel tubes into undisturbed soil with a rubber mallet; they were sealed with aluminum foil, plastic end caps, and tape, then stored in cooled ice chests for delivery under chain-of-custody to Med-Tox.

In March 1990, during the demolition of a former LaCoste building foundation along the eastern perimeter of the site (see Plate 4), HLA provided observation and sampling services to assist in mitigating potential health and safety hazards to on-site construction workers. Potential hazards included: a large concrete vault containing water, a small oil sump, and soil possibly containing asbestos, heavy metals, and/or petroleum hydrocarbons.

On August 28, 1990, at the request of Mr. Ignacio Dayrit of the City, an HLA field geologist collected a sample (Bay-Asb) of suspected asbestos-containing materials (ACM) uncovered by Campanella in fill around the south end of the

building foundation. The sample was delivered under chain-of-custody to Forensic Analytical Laboratories in Hayward, California, and analyzed for asbestos content by polarized light microscopy (PLM). Construction was temporarily stopped until results became available.

Because results of analysis on this sample showed the presence of 35 to 40 percent asbestos, HLA prepared a job safety plan specifying work procedures for Campanella to minimize exposure to airborne dust. The job safety plan was provided to Campanella for review by all site workers. HLA also held a tailgate safety meeting at the site to instruct workers of potential hazards and safety precautions. When construction resumed on March 7, all excavation and grading areas were misted frequently with water by Campanella to help reduce airborne dust and potential ACM fibers during the removal of the LaCoste building foundation. Using two Gillian air sampling pumps with mixed-cellulose ester filters, HLA monitored airborne asbestos fibers during demolition of the foundation. One of the samplers was mounted on a heavy equipment operator (Mr. Miguel Casillas) employed by Campanella, and one was placed downwind of the work area. Using the Gillian pumps, air was drawn through the filter cassettes at a rate of 2.5 to 3.0 liters per minute for the sampling period (from four to eight hours) in accordance with the National Institute of Occupational Safety and Health (NIOSH) air-sampling method 7300.

Between March 7 and March 12, two 4-hour samples were obtained from each sampler per day, one in the morning and one in the afternoon, except for March 8 when only one sample was obtained in the morning due to pump failure in the afternoon. On March 13 and 14, one 8-hour sample per day was taken. Samples were delivered under chain-of-custody procedures to R. J.. Lee Group, Inc. (R. J. Lee), in Berkeley, California, with a two-hour turn-around time. The fast turn-around time and frequency of sampling were used to enable HLA to take corrective action if high levels of asbestos fibers were detected.

Three sumps were encountered during demolition (see Plate 4): a small metal sump containing oil on the east side of the building, a concrete sump containing trash and fill material in the central portion of the building, and a large concrete vault containing approximately 50,000 gallons of water. Campanella retained Erickson to sample the contents of the small oil sump and remove and dispose of them. Approximately 250 gallons of oil and water were removed from the sump and the container was steam-cleaned to remove any remaining residue. The removed oil and water was stored in a tank on site pending the results of analysis. Campanella then removed the sump and disposed of it along with other construction debris. HLA sampled the soil underlying the sump to evaluate whether it had leaked (ES-1A, see Plate 4). This work was performed between March 9 and 13, 1990. On March 21, Erickson hauled the oil and water off



site to the Gibson Oil and Refining Company recycling facility in Bakersfield, California.

The large concrete vault containing approximately 50,000 gallons of water was found by Campanella when the floor was removed in the middle of the building. On February 28, 1990, HLA sampled the water in the vault and sent the samples to Sequoia for chemical analysis. After laboratory results confirmed that the water contained only low levels of some metals and petroleum oil, permission was obtained from Mr. Stephen Hill of the Regional Water Quality Control Board staff to discharge it into the storm sewer. This was documented in HLA's letter to the City dated March 9, 1990. Using a trash pump, Campanella discharged the water to the storm drain on the north side of the site. The vault was then demolished by Campanella.

South of the large concrete vault, in the central area of the building, a concrete sump was found that contained trash and fill similar to that around the building foundation. The contents of that sump were removed, sampled (S-11, see Plate 4), and stockpiled on site. The sump was then removed by Campanella.

After the enclosed sump was removed, excavation proceeded at the southern end of the building. Soil was uncovered in this area that appeared oily. All soil excavated from this area that showed evidence of oil-staining or odors was stockpiled on site and sampled (S-2, see Plate 4). Ten samples of soil and suspected ACM (S-1 through S-10, see Plate 4) were

also gathered to evaluate the presence of oil and asbestos in the fill around the LaCoste foundation. Another sample of soil (S-13) was taken near the former site of the ethyl alcohol tank because it was noted that soil beneath the asphalt along 64th Street was saturated with a petroleum product resembling kerosene. Six of the samples (S-3 through S-6, S-8, and S-10) were sent to R. J. Lee for asbestos analyses; the other samples were delivered to Sequoia for chemical testing.

Because results of soluble lead and sulfide analyses indicated that the soil which was stockpiled during demolition (See Plate 4) was hazardous, the City retained GSX Services of California, Inc. to off-haul all of the stockpiled soil to their PWI Class I landfill in Buttonwillow, California. Those analysis results were documented in our June 22, 1990, letter to the City. The soil (approximately 75 cubic yards) was hauled and disposed under hazardous waste manifest on August 27, 1990. An HLA field engineer observed the soil removal.

### 3.2 Chemical Testing Program

Samples of soil, suspected ACM, airborne dust, and water collected during HLA's investigation were analyzed for a wide range of chemical constituents. The chemical testing program and test methods employed are summarized in Table 3 and are discussed below. Laboratory analysis reports are in Appendix E. Analyses were selected on the basis of our knowledge of the site history,

field observations, sample type, and proximity of sampling locations to suspected source areas.

3.2.1 Phase I Chemical Analyses

Because the objective of the December 1989 field investigation was to evaluate the potential presence of a wide variety of chemicals in soil and/or groundwater beneath the site, the initial chemical testing program was broad in scope. One soil sample from each boring (B-1, B-2, and MW-1 through MW-3) at a depth of 5.0 to 5.5 feet and water samples from each well were submitted to Med-Tox for analyses. In addition, soil samples from 10.5 feet in MW-1 and MW-3 were also analyzed. The sample from MW-1 at 10.5 feet was only tested for ethyl alcohol (because of the proximity of the storage tank). The other soil and groundwater samples were tested for the following parameters:

- Volatile organic compounds (VOCs)
- Semivolatile organic compounds (SOCs)
- Seventeen heavy metals\*
- TPH as gasoline, diesel fuel, and motor oil
- Ethyl alcohol (soil from MW-1 and groundwater samples only)
- Total oil and grease (groundwater samples only)
- General minerals (groundwater samples only)
- Total coliform bacteria (groundwater samples only).

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\* The 17 heavy metals are defined in the California Code of Regulations, Title 22, Section 66699.

3.2.2 Phase 2 Chemical Analyses

The March 1990 investigation was designed to further delineate the extent of several chemicals found in samples of fill material and/or groundwater during our December 1989 work. Those chemicals consisted of TPH, polynuclear aromatic hydrocarbons (PNAs), several VOCs, and elevated concentrations of lead and zinc. In addition, because of the proximity of the former Pabco facility south of 64th Street and the probable past use of solvents there, samples were also analyzed for purgeable halocarbons during this phase of work. Three samples of fill and/or native soil from each boring (B-3, B-4, and MW-4 through MW-6), as well as groundwater samples from all six wells were submitted to Sequoia and tested for the following parameters:

- Purgeable halocarbons
- Purgeable aromatic hydrocarbons
- PNAs
- TPH as gasoline and diesel fuel
- Total oil and grease
- Total lead
- Total zinc.

3.2.3 Demolition Monitoring Chemical Analyses

The primary objective of the demolition monitoring was to evaluate the concentration of airborne asbestos fibers during excavation of the LaCoste building foundation. Eighteen samples of airborne dust were analyzed by R. J.. Lee for asbestos

fibers by phase-contrast microscopy (PCM); nine of those were from the sampler positioned on the backhoe operator and nine were from the downwind sampler. To further assess the asbestos content of soil and debris found in excavated fill material, seven bulk samples (S-3 through S-6, S-8, S-10, and Bay-Asb, see Plate 4) were tested for asbestos by polarized-light microscopy (PLM).

Another objective of the demolition monitoring was to supplement the data regarding petroleum hydrocarbons in site soils. Therefore, six soil samples gathered from excavated fill (S-1, S-2, S-7, S-9, S-11, S-13) and one from beneath the small oil sump (ES-1A) were analyzed for TPH as diesel fuel and for total oil and grease. Samples S-2 and ES-1A were also analyzed for VOCs, SOCs, and 17 heavy metals. The water sample from the concrete vault was analyzed for all of the above parameters.

The two soil samples collected after the ethyl alcohol tank was removed were analyzed for ethyl alcohol, TPH as gasoline, and purgeable aromatic hydrocarbons at the request of Mr. Dennis Byrne of County Health. A copy of the laboratory analysis report (see Appendix E) was provided to Campanella for submittal to County Health.

## 4.0 SURFACE AND SUBSURFACE CONDITIONS

### 4.1 Surface Conditions

Surface topography in the region of the Transo/LaCoste site is generally flat, with a gentle slope to the west (toward San Francisco Bay). The terrain rises into rolling hills to the east. The surface elevation of the site is approximately 10 to 15 feet above Mean Sea Level (MSL). Buildings surrounding the site are used for light industry, residential apartments, a public market, and a movie theater. The Southern Pacific railroad tracks border the site to the east.

The Transo and LaCoste buildings were located on Parcels 4-2 and 4-3, respectively. During February and March 1990, all buildings on both parcels were demolished. All structures have been removed and the site has been rough graded, using a track-mounted tractor; the soil has not been compacted. As it is currently graded, Parcel 4-2 is approximately 4 feet higher than Parcel 4-3.

### 4.2 Subsurface Conditions

#### 4.2.1 Sumps and Tanks

As described earlier, a tank that previously held ethyl alcohol and three sumps/vaults were removed from the site by Campanella. During excavation of the LaCoste building foundation, Campanella also uncovered two pipelines constructed of wrapped steel. The contents and lengths of the pipelines are not known. The pipes were three to four inches in diameter and

were along the eastern perimeter of the building foundation. After removing the building foundation, Campanella covered the exposed areas of the pipelines with surrounding soil.

4.2.2 Soil/Fill

The boring logs indicate that the site contains fill ranging from a depth of approximately five feet (B-2 and MW-1) along the eastern property line to at least 16.5 feet (the maximum depth explored) in the middle of the western side of the parcel (B-3). The fill primarily consists of a lean clay, with gravel, sand and silt distributed throughout. Pieces of brick, metal, glass, and fibrous material (possibly insulation) were found randomly throughout the fill. The northwestern portion of the site contains a gravel layer in the upper two to five feet.

Native soils underlying the fill consist of varying layers of clay, silt, sand, and peat. A sand layer from one to three feet thick was encountered in several of our borings at the northeast corner of the site (MW-3, MW-5, and B-2) between 10 and 15 feet. Peat was encountered in MW-2 and MW-3 between 10 and 13 feet. The remainder of the native soils consisted primarily of silt and clay.

4.2.3 Shallow Groundwater/Hydraulic Characteristics

Depth to groundwater below present grade ranges from approximately 5 feet (MW-3) to nearly 10 feet (MW-4). The hydraulic gradient (based on water levels obtained on April 10, 1990, see Table 1) is to the west, toward San Francisco Bay, at

approximately 0.007 feet per foot. The hydraulic gradient and water elevations in the monitoring wells (relative to our on-site datum) are shown on Plate 5. The direction of groundwater flow is probably influenced by groundwater pumping activities at the Emery Bay Apartments site.

Groundwater purged during monitoring well sampling had an organic odor similar to rotting garbage and was black in all wells except MW-1 and MW-5. Groundwater purged from MW-1 and MW-5 was gray/brown in color with no detectable odor. No separate-phase hydrocarbon product was found to be floating on the groundwater in the wells.

The water level recovery graphs are shown on Plates D-1 through D-3 (Appendix D) for slug tests in MW-1, -2 and -3, respectively. Table 4 lists the hydraulic conductivity estimates derived from the test.

The materials tested in MW-1 and MW-3 appear to be slightly permeable. The K-values obtained are typical of a fine sand or a mixture of sand, silt, and clay. The resulting K-value and rapid responses of the MW-2 test, however, are not typical of the clay material logged at that location but more representative of a sand aquifer. The data graphed for MW-2 may be more representative of the response of the sand pack around the well screen.

A distinct and laterally continuous aquifer does not appear to exist beneath the site. A slug test measures hydraulic characteristics at only one point in the shallow



saturated zone and because fill materials comprising the shallow sediments at the site vary considerably, hydraulic conductivity values of the sediments may also vary considerably across the site.

## 5.0 DISCUSSION OF RESULTS

Results of chemical analyses on samples gathered during our investigations are presented on Tables 5 through 13. Laboratory reports and completed chain-of-custody forms are in Appendix E.

### 5.1 Occurrence of Organic Compounds and Heavy Metals in Site Soils

Tables 5 through 9 give the results of chemical analyses performed on soil samples collected during drilling and demolition monitoring and tested for organic compounds and heavy metals. Results of analyses on samples from our December 1989 investigation are in Tables 5 and 6. Data for samples gathered from borings in March 1990 are in Table 7. Results of analyses on soil samples collected during demolition of the LaCoste building foundation and removal of the ethyl alcohol tank are in Tables 8 and 9, respectively.

#### 5.1.1 Concentrations of Organic Compounds in Soil

Data in Table 5 indicate that detectable TPH concentrations (primarily as oil) found in samples collected in December 1989 ranged from 80 to 3,600 ppm in five of the six samples tested. The sample from B-2 contained no detectable concentrations of TPH. In addition, detectable concentrations of several VOCs and sixteen SOCs were also found in some of the samples. The SOCs detected in the samples were PNAs, which are found in petroleum-based products such as motor oil, roofing tar and asphalt.

As shown in Table 7, petroleum hydrocarbons were found in 12 of the 15 samples tested in March 1990 at concentrations above 100 ppm. PNAs were not detected in any of the 15 samples tested. Low concentrations (less than 0.5 ppm) of benzene, toluene, ethylbenzene, and/or xylenes (BTEX) were found in all of the soil samples. The petroleum hydrocarbons detected in samples from both the December 1989 and March 1990 sampling were primarily in the oil and grease range; however, lesser amounts of hydrocarbons in the diesel fuel and gasoline ranges were also found. The highest oil and grease concentrations were found in the central and northwestern portions of the site: B-3 (120,000 ppm at 15 feet), B-4 (5,000 ppm at 6 feet), MW-3 (3,600 at 10.5 feet), MW-4 (3,000 ppm at 10.5 feet), and MW-6 (1,000 ppm at 6 feet). Analyses on samples collected during the demolition monitoring (Table 8) indicated similar concentrations of oil and grease ranging from 13 to 2,300 ppm.

The distribution of oil and grease found in soil samples from borings is shown on Plate 6. The data suggest no apparent localized or surface source of the hydrocarbons. High concentrations of oil and grease (above 1,000 ppm) were found at various depths throughout the fill material ranging from 2.5 feet at B-4 to 15 feet at B-3.

Results of analyses on four soil samples taken near the former ethyl alcohol tank indicate that three of the four samples had 1 ppm or less of ethyl alcohol. Two of those samples were from boring MW-1 and the third (S-2, Table 9) was

collected below the tank backfill approximately 24 inches beneath the tank after it was removed. The fourth sample (S-1, Table 9) was taken of tank backfill material approximately 18 inches beneath the tank and showed 45 ppm of ethyl alcohol; because there was no other indication that the tank had leaked, we believe that the source of ethyl alcohol found in this sample was probably minor tank overfilling.

#### 5.1.2 Concentrations of Heavy Metals in Soil

As shown in Tables 6 and 8, a total of eight soil samples (six from the December 1989 borings and two from the demolition monitoring) were tested for concentrations of 17 heavy metals. With the exception of lead and zinc which appeared to be slightly elevated with respect to naturally occurring concentrations of these elements in soils, the heavy metal concentrations were very low. Results of additional testing for lead and zinc in 15 soil samples gathered in March 1990 (Table 7) indicate that lead was found above the Total Threshold Limit Concentration (TTLIC)\* in two soil samples from B-3: 2,600 ppm at 6.0 feet, and 5,700 ppm at 15.0 feet. It should be noted that the highest TPH concentration found during our investigation (120,000 ppm) was also in soil from B-3 at a depth of 15 feet. None of the soil samples showed zinc concentrations above its TTLIC of 5,000 ppm;

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\* Total Threshold Limit Concentrations (TTLIC) are listed in Title 22, Section 66699, of the California Code of Regulations and are one of the criteria for classifying a waste as hazardous.

however, several samples (Table 7, B-3, B-4, and MW-6) had zinc concentrations above 1,000 ppm.

The distribution of lead in soil samples from the site is shown on Plate 7. Data suggest that the high lead concentrations found in soil from B-3 are not characteristic of the fill material in general; however, lead concentrations above 100 ppm were found in soil samples from all borings except B-2 and MW-1.

## 5.2 Results of Asbestos Analyses

The results of asbestos analyses performed on samples of airborne dust and fill material are summarized in Tables 10 and 11, respectively. Results of analyses on dust samples obtained during demolition (Table 10) indicate that levels of airborne fibers were below levels of concern. Results ranged from a low of <0.002 fibers/cubic centimeter (f/cc) on March 13, 1990, to a high of 0.015 f/cc on March 9, 1990. The time-weighted average (TWA) "action level" established by the Occupational Safety and Health Administration (OSHA) for airborne fibers is 0.1 f/cc for an 8-hour work day.

Results of analyses on bulk samples of fill and debris tested for ACM (Table 11) indicate that asbestos does not appear to be widespread in the soil. Two samples (S-5 and Bay-Asb) of isolated fibrous insulation material found in fill excavated during demolition of the LaCoste building foundation contained 20 to 40 percent asbestos. The TTLC for asbestos is 1 percent.

The other five soil samples tested contained less than 1 percent asbestos.

### 5.3 Shallow Groundwater Quality

The results of chemical analyses on water samples from MW-1 through MW-6 are shown in Tables 12 and 13. Table 12 contains results of inorganic compound analyses performed in December 1989; Table 13 presents organic and heavy metal data from both the December 1989 and March 1990 sampling periods.

VOCs were either not detected or considerably below regulatory action levels in water samples from all of the wells, with the exception of benzene found at 0.004 ppm in MW-4, which exceeds the established action level of 0.001 ppm. Trichloroethene (TCE), a cleaning solvent, was found in a water sample from MW-5 in March 1990 at a concentration of 0.00099 ppm; the maximum contaminant level (MCL) for TCE is 0.005 ppm. SOCs and PNAs were not detected in any of the groundwater samples tested.

As shown in Table 13, TPH as gasoline, diesel fuel, and/or waste oil were found in water from all of the wells at concentrations below 5.2 ppm. Higher concentrations (12.0 ppm) of total oil and grease (TOG) were found in MW-2 and MW-6 at the western portion of the site. Water from MW-1 and MW-5 in the eastern part of the site showed the lowest petroleum hydrocarbon concentrations.

Analyses for 17 heavy metals were performed on water samples from MW-1 through MW-3 in December 1989 and results (Table 12)

were below detection limits or, where detected, well below drinking water standards. Because elevated concentrations of lead and zinc were found in some samples of fill, water samples from all six wells were reanalyzed for those two metals in March 1990. As shown in Table 13, lead and zinc concentrations were again well below their respective drinking water standards.

Analysis of water samples from MW-1 through MW-3 for ethyl alcohol (Table 13) showed no detectable concentrations of this compound. Because visual inspection of the ethyl alcohol tank indicated no evidence of past leakage, no additional analysis for that compound was performed on water samples from MW-4 through MW-6.

To evaluate potential beneficial uses of the groundwater beneath the site, additional general mineral and coliform bacteria analyses (Table 12) were performed on water from MW-1 through MW-3 in December 1989. Chloride levels were above drinking water standards in water from MW-2 and MW-3 (340 and 260 ppm, respectively). Also, in samples from MW-1 through MW-3, magnesium, conductivity, and total dissolved solids were above drinking water standards. Total coliform bacteria were found in MW-1, MW-2 and MW-3 at 84, 56, and 35 MPN/100 ml\*, respectively. The action level for total coliform bacteria is 1 MPN/100 ml.

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\* MPN/100 ml = Most probable number per 100 milliliters of water

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

In Section 6.1, we present the conclusions of our investigation with respect to the presence of hazardous materials in soil and groundwater beneath the subject site. In Section 6.2, we offer several recommendations for capping of fill on-site and for continued groundwater monitoring.

### 6.1 Conclusions

#### 6.1.1 Asbestos Monitoring During LaCoste Building Foundation Demolition

Data indicate that two pieces of fibrous insulation material found in fill excavated during removal of the LaCoste building foundation contained 20 to 40 percent asbestos. On the basis of observations made by HLA's field geologist, the insulation debris comprised a very small portion of the fill (less than one percent) and results of chemical analyses on five other bulk samples from the fill material showed less than one percent asbestos. On the basis of results of air monitoring (Table 10), HLA concludes that on-site construction workers employed by Campanella were exposed to no concentrations of asbestos fibers exceeding worker health and safety regulations.

#### 6.1.2 Fill Material

Seven out of 28 soil samples tested for TPH or TOG showed concentrations of hydrocarbons in the oil and grease range above 1,000 ppm. Two of the 23 soil samples tested for lead showed concentrations above the TTLC for that metal of 1,000 ppm.



Soil containing such high concentrations of petroleum hydrocarbons and/or lead may be considered a hazardous waste.

Because of the random distribution of petroleum hydrocarbons and lead concentrations throughout the fill, it is our opinion that these constituents were present in the fill when it was placed on the site. Data suggest that the former ethyl alcohol tank, the small oil sump, and the concrete vault removed from the site are not likely sources of the contaminants found in the fill. With the exception of 2,300 ppm of TOG in a soil sample (ES-1A) from beneath the small oil sump, results of our investigation showed no significant evidence of leakage from these containers. Because of the apparent random distribution of petroleum hydrocarbons throughout the fill, data are inconclusive regarding the source of the hydrocarbons found in ES-1A. Our field observations indicated no cracks or holes in the small oil sump.

#### 6.1.3 Groundwater

Results of analyses on groundwater samples from six on-site wells (Table 12 and 13) indicate the presence of petroleum hydrocarbons in all water samples at concentrations ranging from less than 1.0 to 12.0 ppm. The hydrocarbons were found to be primarily in the oil and grease range. Concentrations of VOCs, SOCs and heavy metals, were below analytical detection limits or well below drinking water standards, with the

exception of benzene in water from MW-4 at 0.004 ppm. The action level for benzene is 0.001 ppm.

It appears that there is some leaching of petroleum hydrocarbons from the fill into the groundwater. Data are inconclusive regarding the possibility that petroleum hydrocarbons may be flowing on-site in groundwater from the adjacent public market site (formerly Pabco). Data suggest that concentrations of heavy metals (including lead and zinc) found in the fill have not impaired groundwater quality and results indicate no evidence that metals are being leached from the fill into the groundwater.

Results of general mineral, total dissolved solid, and coliform bacteria analyses on water samples from MW-1 through MW-3 indicate that groundwater beneath the site is not suitable as a drinking water source. However, with the exception of the petroleum hydrocarbon constituents found in water samples, data indicate that the groundwater may be suitable for industrial uses.

## 6.2 Recommendations

HLA's recommendations for groundwater monitoring and for capping fill on-site are described in Section 6.2.1. At the City's request, in Section 6.2.2, the recommendations are summarized in outline format, along with HLA's opinion of the estimated annual cost to conduct the recommended groundwater monitoring.

6.2.1 Description of Recommendations

HLA recommends a quarterly and annual groundwater monitoring program at this site. Prior to initiating the monitoring program, the locations and casing elevations of the wells should be surveyed by a licensed surveyor. To monitor the hydraulic gradient, we recommend that water levels in the monitoring wells be measured each quarter. An oil/water interface probe or some other means should be used to check for the presence of separate-phase hydrocarbon product. To monitor the presence of petroleum hydrocarbons in groundwater beneath the site, we recommend that groundwater samples be collected from the wells annually and tested for the following parameters:

- TPH as gasoline, with BTEX distinction;
- TOG;
- Lead and zinc.

Analyses for lead and zinc are recommended because of the high concentrations of these metals found in several samples of fill. The sampling frequency, number of wells sampled, and chemical testing program, should be re-evaluated each year on the basis of monitoring results.

HLA understands that the City's current plans call for extending Bay Street southward across the eastern portion of the site to 64th Street. The western part of the site may be developed for commercial/industrial use. To minimize further leaching of petroleum hydrocarbons from the fill and to reduce the potential for exposure of humans and/or wildlife to it, HLA

recommends that a program of continued groundwater monitoring and capping the fill in-place be incorporated with final development plans for the site. Capping may consist of covering exposed fill with low-permeability clayey soil, synthetic liner material, and/or asphalt/concrete paving. This would reduce the percolation of surface water through the fill and would minimize contact with contaminated soil. This remedial approach appears to be consistent with actions taken at nearby sites, including the Emery Bay Public Market and Emery Bay Apartment sites, where fill has been capped in place.

Prior to construction, a health and safety plan should be prepared which includes procedures to monitor and minimize the potential exposure of construction workers to contaminants in the fill. In addition, engineering evaluation of possible cap materials should be performed prior to construction, and a final engineering report should be prepared upon completion of development to document the capping of fill material on-site.

6.2.2 Outline of Recommendations and Opinion of Monitoring Costs

HLA's recommendations are outlined below, along with our professional opinion of the surveying and groundwater monitoring costs. Our opinion of these costs is presented at the City's request to assist them with estimating on-going costs at the site. If needed, our opinion of the cost to implement the recommended capping of fill material on-site can be provided at a

later date when the City's development plans for the site are better known.

<u>Recommended Item</u>	<u>Opinion of Cost</u>
1. Survey locations and casing elevations of MW-1 through MW-6 using a licensed surveyor;	\$1,500
2. Measure water levels and check for separate-phase floating hydrocarbon product in MW-1 through MW-6 on a quarterly basis (assumes 1/2 day at \$1,000/day and four sampling periods per year);	\$2,000 per year
3. Purge and sample groundwater from MW-1 through MW-6 (assumes 1 day at \$1,000/day and one sampling period per year);	\$1,000 per year
4. Chemically analyze six groundwater samples for TPH as gasoline, BTEX, TOG, lead and zinc (assumes \$300/sample and one sampling period per year);	\$1,800 per year
5. Evaluate data and prepare a brief letter report (assumes one report to be prepared annually summarizing results of quarterly water level measurements and annual water sampling analyses);	\$2,000 per year
6. Prior to construction/development of the site, prepare a health and safety plan describing procedures to monitor and minimize potential exposure of construction workers to contaminants in the fill;	Contingent on development plan
7. As part of the development plans for the site, cap exposed areas of fill with low-permeability material. Perform engineering evaluation of possible cap materials (e.g., clay, synthetic liners, and/or asphalt/concrete paving) prior to construction;	Contingent on development plan

8.           Upon completion of site development, prepare a final engineering report that documents the capping of fill on-site, type(s) of cap material used, and locations of capped fill;
- Contingent on development plan

Thus, HLA's opinion relative to the approximate annual costs to conduct groundwater monitoring activities as recommended in Section 6.2.1 is \$6,000 to \$7,000 per year. The surveying costs of approximately \$1,500 would only be incurred during the first year of monitoring. Our opinion of the monitoring costs assumes that the sampling frequency, number of wells sampled, and chemical testing program recommended above remains the same; these parameters should be evaluated on the basis of results of chemical analyses each year, and the monitoring program may be modified, if appropriate.

Table 1. Groundwater Surface Elevations  
in Monitoring Wells

<u>Well No.</u>	<u>Date</u>	<u>Top of PVC Casing* (ft)</u>	<u>Depth of Groundwater Below Top of Casing (ft)</u>	<u>Groundwater ** Surface Elevation (ft)</u>
MW-1	01/05/90	102.14	6.16	95.98
	04/10/90		6.32	95.82
MW-2	01/05/90	102.14	6.87	95.27
	04/10/90		6.65	95.49
MW-3	01/05/90	100.00	4.73	95.27
	04/10/90		4.59	95.41
MW-4	04/10/90	105.25	9.76	95.49
MW-5	04/10/90	101.40	5.54	95.86
MW-6	04/10/90	101.87	6.58	95.29

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\* Elevations are relative to arbitrary datum (MW-3 = 100.00 ft)

\*\* Groundwater surface elevation = Top of casing elevation - groundwater depth below to of casing.

Table 2. Slug Test Conditions

<u>Well Number</u>	<u>Test Type</u>	<u>Pump Type</u>	<u>Approximate Slug Volume (gallons)</u>	<u>Initial Water Depth (feet)</u>	<u>Classification of Stratum</u>
MW-1	Withdrawal	Suction	2.5	6.60	Unconfined
MW-2	Withdrawal	Suction	2.0	6.87	Unconfined
MW-3	Withdrawal	Suction	2.5	4.73	Confined



Table 3. Summary of Chemical Test Methods  
Phase I Field Investigation  
(December 1989)

<u>Matrix</u>	<u>Number of Samples</u>	<u>Parameter<sup>1</sup></u>	<u>Test Method<sup>2</sup></u>
Soil	6	VOCs	USEPA 8240
	6	SOCs	USEPA 8270
	6	17 Heavy Metals	USEPA 7000 Series
	6	TPH (Gasoline)	USEPA 5030/8015, Modified
	6	TPH (Diesel)	USEPA 3550/8015, Modified
	6	TPH (Motor Oil)	USEPA 3550/8015, Modified
	2	Ethyl Alcohol	USEPA 8015
Water	3	VOCs	USEPA 624
	3	SOCs	USEPA 625
	3	TPH (Gasoline)	USEPA 5030/8015, Modified
	3	TPH (Diesel)	USEPA 3550/8015, Modified
	3	TPH (Motor Oil)	USEPA 3550/8015, Modified
	3	Total Oil and Grease	Standard Method 503E
	3	Ethyl Alcohol	USEPA 5030/8015
	3	17 Heavy Metals	USEPA 7000 Series
	3	Title 22 General Minerals	Title 22 CCR
	3	Total Coliform	USEPA 9131

Phase II Field Investigation  
(March 1990)

Soil	15	Purgeable Halocarbons	USEPA 8010
	15	PNAs	USEPA 8100
	15	TPH (Gasoline)	USEPA 5030/8015, Modified
	15	TPH (Diesel)	USEPA 3550/8015, Modified
	15	Total Oil and Grease	USEPA 418.1
	15	BTXE	USEPA 5030/8020
	15	Total Lead	USEPA 7420
	15	Total Zinc	USEPA 7950
Water	6	Purgeable Halocarbons	USEPA 8010
	6	PNAs	USEPA 8100
	6	BTEX	USEPA 5030/8020
	6	TPH (Gasoline)	USEPA 5030/8015, Modified
	6	TPH (Diesel)	USEPA 3550/8015, Modified
	6	Total Oil and Grease	USEPA 418.1
	6	Lead	USEPA 7420
	6	Zinc	USEPA 7950

Table 3. (continued)

Demolition Monitoring  
(March 1990)

<u>Matrix</u>	<u>Number of Samples</u>	<u>Parameter<sup>1</sup></u>	<u>Test Method<sup>2</sup></u>
Soil (fill)	2	VOCs	USEPA 8240
	2	SOCs	USEPA 8270
	3	BTEX	USEPA 5030/8020
	3	TPH (Gasoline)	USEPA 5030/8015, Modified
	6	TPH (Diesel)	USEPA 3550/8015, Modified
	7	Total Oil and Grease	USEPA 418.1
	2	Ethyl Alcohol	USEPA 8015
	2	17 Heavy Metals	USEPA 7000 Series
	1	Cyanide	USEPA 333.2
	1	Sulfide	USEPA 9030
	5	Soluble Lead	Ca WET/USEPA 7421
	1	Corrosivity	Title 22, CCR
	1	Reactivity	Title 22, CCR
	7	Asbestos	PLM
Water	1	VOCs	USEPA 8240
	1	SOCs	USEPA 8270
	1	17 Heavy Metals	USEPA 7000 Series
	1	BTEX	USEPA 5030/8020
	1	TPH (Gasoline)	USEPA 5030/8015, Modified
	1	Total Oil and Grease	USEPA 418.1
Airborne Dust	10	Total Fibers	PCM, NIOSH 7400A

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1 VOC = Volatile Organic Compounds  
PNA = Polynuclear Aromatic Hydrocarbons  
TPH = Total Petroleum Hydrocarbons  
SOC = Semi-volatile Organic Compounds  
BTEX = Benzene, toluene, ethylbenzene, and xylenes  
ACM = Asbestos Containing Material

2 USEPA = United States Environmental Protection Agency  
CaWET = California Waste Extraction Test  
PLM = Polarized Light Microscopy  
PCM = Phase - Contrast Microscopy  
NIOSH = National Institute for Occupational Safety and Health  
CCR = California Code of Regulations

Table 4. Slug Test Results

<u>Well Number</u>	<u>Lithology of Tested Zone</u>	<u>Saturated Thickness of Zone (feet)</u>	<u>Estimated Hydraulic Conductivity of Zone (feet/day)</u>
MW-1	Sandy and Silty Clay to Clayey Sand	12.3	0.18
MW-2	Clay W/Sand and Gravel	8.4	12*
MW-3	Sand	11.8	0.14

\* Value not typical for clay material. Test may have measured hydraulic conductivity of sand pack around the well screen.

Table 5. Concentrations of Organic Compounds in Soil Samples  
December 1989 Investigation  
(reported as parts per million)

VOCs*	Designated	MW-1	MW-2	MW-3	MW-3	B-1	B-2
	Level **	(5.5 ft)	(5.5 ft)	(5.0 ft)	(10.5 ft)	(5.5 ft)	(5.5 ft)
Acetone	--	<.10	.20	.12	<.10	<.10	<.10
4-methyl-2-pentanone	--	.39	<.05	<.05	<.05	<.05	<.05
Toluene	100	.42	.36	.05	.051	.17	.018
<u>SOCs*</u>							
Acenaphthene	20	ND	.440	ND	ND	ND	ND
Acenaphthylene	.0028	ND	1.60	ND	ND	ND	ND
Anthracene	.0028	ND	3.10	ND	ND	ND	ND
Benzo(a)anthracene	--	ND	2.90	ND	.410	ND	ND
Benzo(b)fluoranthene	.0028	ND	1.60	ND	ND	ND	ND
Benzo(k)fluoranthene	.0028	ND	1.90	ND	.540	ND	ND
Benzo(g,h,i)perylene	.0028	ND	1.00	ND	ND	ND	ND
Benzo(a)pyrene	.0028	ND	2.30	ND	ND	ND	ND
Chrysene	.0028	ND	2.80	ND	.500	ND	ND
Dibenzo(a,h)anthracene	.0028	ND	.400	ND	ND	ND	ND
Dibenzofuran	--	ND	.970	ND	ND	ND	ND
Fluoranthene	42	.560	5.90	ND	1.30	ND	ND
Fluorene	.0028	ND	2.50	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	.0028	ND	1.00	ND	ND	ND	ND
Phenanthrene	.0028	.550	9.90	.330	.960	ND	ND
Pyrene	.0028	.590	6.40	ND	1.20	ND	ND
<u>TPH*</u>							
Gasoline Range	--	1.0	1.0	0.4	<300	0.3	<0.2
Diesel Fuel Range	10	<10	<80	<10	320	<80	<10
Motor Oil Range	--	80	280	640	3,600	640	<20
<u>Ethanol</u>	--	<1.0	--	--	--	--	--

\* VOCs = Volatile organic compounds using EPA Test Method 8240.

SOCs = Semivolatile organic compounds using EPA Test Method 8270.

TPH = Total petroleum hydrocarbons using modified EPA Test Methods 5030/3550/8015 (purge and trap or extraction, followed by gas chromatography).

ND = Not detected (detection limit of .330 mg/kg).

\*\* Designated levels are guidance developed by the RWQCB, Central Valley Region, for evaluating potential impact to surface and/or ground-water quality.

Table 6. Concentrations of Heavy Metals in Soil Samples  
December 1989 Investigation  
(reported as parts per million)

Heavy Metal	TTL <sup>c</sup> *	MW-1 (5.5 ft)	MW-2 (5.5 ft)	MW-3 (5.0 ft)	MW-3 (10.5 ft)	B-1 (5.5 ft)	B-2 (5.5 ft)
Antimony	500	<5	<5	<5	<5	<5	<5
Arsenic	500	9.4	31	7.7	3.0	3.1	1.9
Barium	10,000	160	89	210	150	200	120
Beryllium	75	0.2	<0.2	0.3	<0.2	0.4	0.4
Cadmium	100	0.2	0.2	0.8	0.7	1.5	0.4
Chromium	2,500	29	22	47	26	57	37
Cobalt	8,000	12	8	9	5	10	16
Copper	2,500	13	44	68	55	170	14
Lead	1,000	19	120	220	83	210	5
Mercury	20	<0.2	0.3	0.2	0.4	0.3	<0.2
Molybdenum	3,500	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0
Nickel	2,000	24	16	76	17	42	61
Selenium	100	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	500	<0.3	0.9	<0.3	<0.3	<0.3	<0.3
Thallium	700	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Vanadium	2,400	32	30	39	39	51	35
Zinc	5,000	26	90	440	180	820	27

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\* TTL<sup>c</sup> = Total Threshold Limit Concentration

Table 7. Concentrations of Selected Chemicals in Soil Samples\*  
 March 1990 Investigation  
 (reported as parts per million)

VOCs	Regulatory Standard Designated Level**	B-3	B-3	B-3	B-4	B-4	B-4
		(3.0 ft)	(6.0 ft)	(15.0 ft)	(2.5 ft)	(6.0 ft)	(11.0 ft)
Benzene	NE	<0.005	<0.005	0.05	0.0053	0.0055	0.0056
Toluene	100	0.0053	0.042	0.39	0.04	0.16	0.011
Ethylbenzene	NE	0.012	0.005	0.06	0.0069	0.012	0.005
Xylene	NE	0.017	0.016	0.80	0.052	0.028	0.010
<b>TPH</b>							
Gasoline Range	NE	<1.0	<1.0	9.0	<1.0	1.0	240
Diesel Fuel Range	10	<1.0	1.8	1,600	2.6	7.8	31
<b>TOG</b>	NE	8.0	250	120,000	1,200	5,000	31
<b>METALS</b>							
	<b>TILC**</b>						
Lead	1,000	17	2,600	5,700	650	24	25
Zinc	5,000	31	370	1,900	2,800	73	140

VOCs	Regulatory Standard Designated Level**	MW-4	MW-4	MW-4	MW-5	MW-5	MW-5	MW-6	MW-6	MW-6
		(5.5 ft)	(10.5 ft)	(15.5 ft)	(3.0 ft)	(5.5 ft)	(13.0 ft)	(3.0 ft)	(6.0 ft)	(12.0 ft)
Benzene	NE	<0.005	0.011	0.011	0.019	0.0081	<0.005	0.0077	<0.005	<0.005
Toluene	100	0.13	0.29	0.11	0.016	0.018	0.017	0.013	0.20	0.035
Ethylbenzene	NE	0.12	0.11	0.0094	0.0050	<0.005	<0.005	0.006	<0.005	0.0065
Xylene	NE	0.330	0.420	0.019	<0.005	<0.005	<0.005	<0.005	0.0074	0.0091
<b>TPH</b>										
Gasoline Range	NE	240	77	1.0	1.0	1.0	<1.0	<1.0	<1.0	3.0
Diesel Fuel Range	10	140	43	1.8	<1.0	2.6	<1.0	<1.0	35	30
<b>TOG</b>	NE	460	3,000	200	22	230	<4.0	19	1,000	250
<b>METALS</b>										
	<b>TILC**</b>									
Lead	1,000	500	17	17	8.2	100	7.2	4.0	72	260
Zinc	5,000	530	100	38	35	190	65	25	92	1,000

VOCs = Volatile organic compounds using USEPA Test Methods 8010/8020

TPH = Total petroleum hydrocarbons using modified EPA Test Methods 5030/3550/8015 (purge and trap or extraction, followed by gas chromatography) for gasoline and diesel fuel.

TOG = Total oil and grease using USEPA Test Method 418.1.

NE = None established

\* Chemicals tested for and not listed in this table were not present in soil samples at concentrations above analytical detection limits.

\*\* Designated levels are guidance developed by the RWQCB, Central Valley Region, for evaluating potential impact to surface and/or ground-water quality. Standards for lead and zinc are the Total Threshold Limit Concentration (TILC) listed in Title 22, Section 66699 of the California Code of Regulations.

Table 8. Concentrations of Organic Compounds and Heavy Metals in Soil Samples  
From LaCoste Building Demolition Monitoring  
(reported in parts per million)

<u>Parameter</u>	<u>Regulatory Standards</u>	<u>S-1</u>	<u>S-2*</u>	<u>S-7</u>	<u>S-9</u>	<u>S-11</u>	<u>S-13</u>	<u>ES-1A*</u>
<u>TPH</u>								
Diesel range	NE	<1.0	190	<1.0	1.3	16	36	<1.0
<u>TOG</u>								
	NE	13	1,600	120	310	720	770	2,300
<u>VOCs</u>								
Toluene	NE	--	ND	--	--	--	--	0.160
<u>SOCs</u>								
All compounds	NE	--	ND	--	--	--	--	ND
<u>Heavy Metals</u>								
	<u>TTLIC</u>							
Antimony	500	--	<1.0	--	--	--	--	<1.0
Arsenic	500	--	9.7	--	--	--	--	26
Barium	10,000	--	300	--	--	--	--	150
Beryllium	75	--	<0.10	--	--	--	--	<0.10
Cadmium	100	--	<0.10	--	--	--	--	<0.10
Chromium	2,500	--	13	--	--	--	--	38
Cobalt	8,000	--	<0.50	--	--	--	--	14
Copper	2,500	--	36	--	--	--	--	37
Lead	1,000	--	110	--	--	--	--	72
Mercury	20	--	0.83	--	--	--	--	0.20
Molybdenum	3,500	--	<0.50	--	--	--	--	<0.50
Nickel	2,000	--	<0.50	--	--	--	--	21
Selenium	100	--	<0.25	--	--	--	--	<0.10
Silver	500	--	<0.10	--	--	--	--	<0.10
Thallium	700	--	<5.0	--	--	--	--	<5.0
Vanadium	2,400	--	<0.50	--	--	--	--	32
Zinc	5,000	--	160	--	--	--	--	180
<u>Reactive Constituents</u>								
Cyanide	NE	--	8.0	--	--	--	--	--
Sulfide	500	--	740	--	--	--	--	--

TPH = Total petroleum hydrocarbons using USEPA Test Method 3550/8015 (diesel range).  
TOG = Total oil and grease using USEPA Test Method 418.1.  
VOCs = Volatile organic compounds using USEPA Test Method 8240  
SOCs = Semi-volatile organic compounds using USEPA Test Method 8270  
NE = Not established  
-- = Sample was not analyzed for these constituents.  
ND = Not detected at or above the analytical detection limit.  
TTLIC = Total threshold limit concentration  
\* = Extra analyses performed on sample S-2 to classify soil for landfill disposal; extra analyses performed on ES-1A to evaluate potential leakage from oil sump

Table 9. Concentrations of Chemicals in Soil Samples  
from Ethyl Alcohol Tank Excavation  
(reported in parts per million)

<u>Chemical*</u>	<u>S-1**</u>	<u>S-2**</u>
TPH as Gasoline	29.0	0.7
Benzene	0.026	<0.001
Toluene	1.7	.170
Ethylbenzene	0.013	<0.001
Xylenes	0.005	<0.001
Ethyl Alcohol	45.0	1.0

\* USEPA Test Methods 8020 and 8015 (modified), purge and trap.

\*\* These samples are in addition to S-1 and S-2 gathered during demolition of the LaCoste building foundation, but have the same sample identification number.



Table 10. Presence of Airborne Asbestos Fibers in Samples  
From LaCoste Building Foundation Demolition Monitoring  
(reported in fibers/cubic centimeter)

<u>Date*</u>	<u>Personal Monitor (Miquel Casillas)**</u>	<u>Downwind Monitor</u>
03/07/90 am	0.0052	--
03/07/90 pm	<0.015	<0.0067
03/08/90 am	<0.0051	<0.0044
03/08/90 pm	--	<0.0057
03/09/90 am	<0.0040	<0.0040
03/09/90 pm	0.015	<0.0082
03/12/90 am	0.0080	0.0055
03/12/90 pm	0.016	<0.0070
03/13/90 am/pm	0.0027	<0.0020
03/14/90 am/pm	<0.0027	<0.0023

\* am = sample taken during the morning hours  
pm = sample taken during the afternoon hours  
am/pm = sample taken over the course of the day

\*\* Backhoe operator for Charles S. Campanella, Inc.

-- Not sampled due to pump failure.

Table 11. Presence of Asbestos  
in Bulk Samples from LaCoste Building Foundation Demolition  
(reported as percent asbestos)

<u>Sample No.</u>	<u>Date Collected</u>	<u>Material Sampled</u>	<u>% Asbestos</u>
Bay-Asb	08/28/90	Fibrous insulation	35-40 Amosite
S-3	03/07/90	Multicolored soil	<1
S-4	03/07/90	Paper/soil	<1
S-5	03/07/90	Insulation/soil	20-30 Chrysotile 20-30 Amosite
S-6	03/07/90	Multicolored soil	<1
S-8	03/07/90	White soil	<1
S-10	03/07/90	Brown soil	<1

Table 12. Concentrations of Inorganic Compounds in Water Samples  
(reported as mg/L, parts per million)

<u>Heavy Metals</u>	<u>Drinking* Water Standard</u>	<u>MW-1 12/29/89</u>	<u>MW-2 12/29/89</u>	<u>MW-3 12/29/89</u>
Antimony	NE	<0.5	<0.5	<0.5
Arsenic	0.05	0.006	0.008	0.004
Barium	1.0	0.09	0.42	0.44
Beryllium	NE	<0.003	<0.003	<0.003
Cadmium	0.01	<0.003	<0.003	<0.003
Chromium	0.05	<0.02	<0.02	<0.02
Cobalt	NE	<0.01	<0.01	<0.01
Copper	1.0	<0.005	<0.005	<0.005
Lead	0.05	<0.01	<0.01	<0.01
Mercury	0.002	<0.0003	<0.0003	<0.0003
Molybdenum	NE	<0.05	<0.05	<0.05
Nickel	NE	<0.01	<0.01	0.02
Selenium	0.01	<0.03	0.03	0.04
Silver	0.05	<0.01	<0.01	<0.01
Thallium	NE	<0.02	<0.02	<0.02
Vanadium	24	<0.05	<0.05	<0.05
Zinc	5.0	0.028	0.015	0.078
<u>General Minerals</u>				
Bicarbonate Alkalinity	NE	570	1,100	1,400
Carbonate Alkalinity	NE	<2	<2	<2
Hydroxide Alkalinity	NE	<2	<2	<2
Calcium	NE	86	170	98
Chloride	250	71	340	260
Iron	0.3	<0.1	6.5	0.7
Magnesium	NE	48	62	79
Manganese	0.05	0.76	1.6	2.9
pH (standard units)	5 to 9	7.0	7.6	6.8
Sodium	NE	180	360	460
Sulfate	250	23	170	16
Conductivity	900	1,200	2,700	2,800
Total Dissolved Solids	500	730	1,700	1,700
Hardness	NE	2,800	1,100	620
<u>Total Coliform Bacteria**</u>	1	84	56	35

\* = Primary or secondary drinking water standards established by the USEPA.

\*\* = Reported at Most Probable Number/100ml (MPN/100ml)

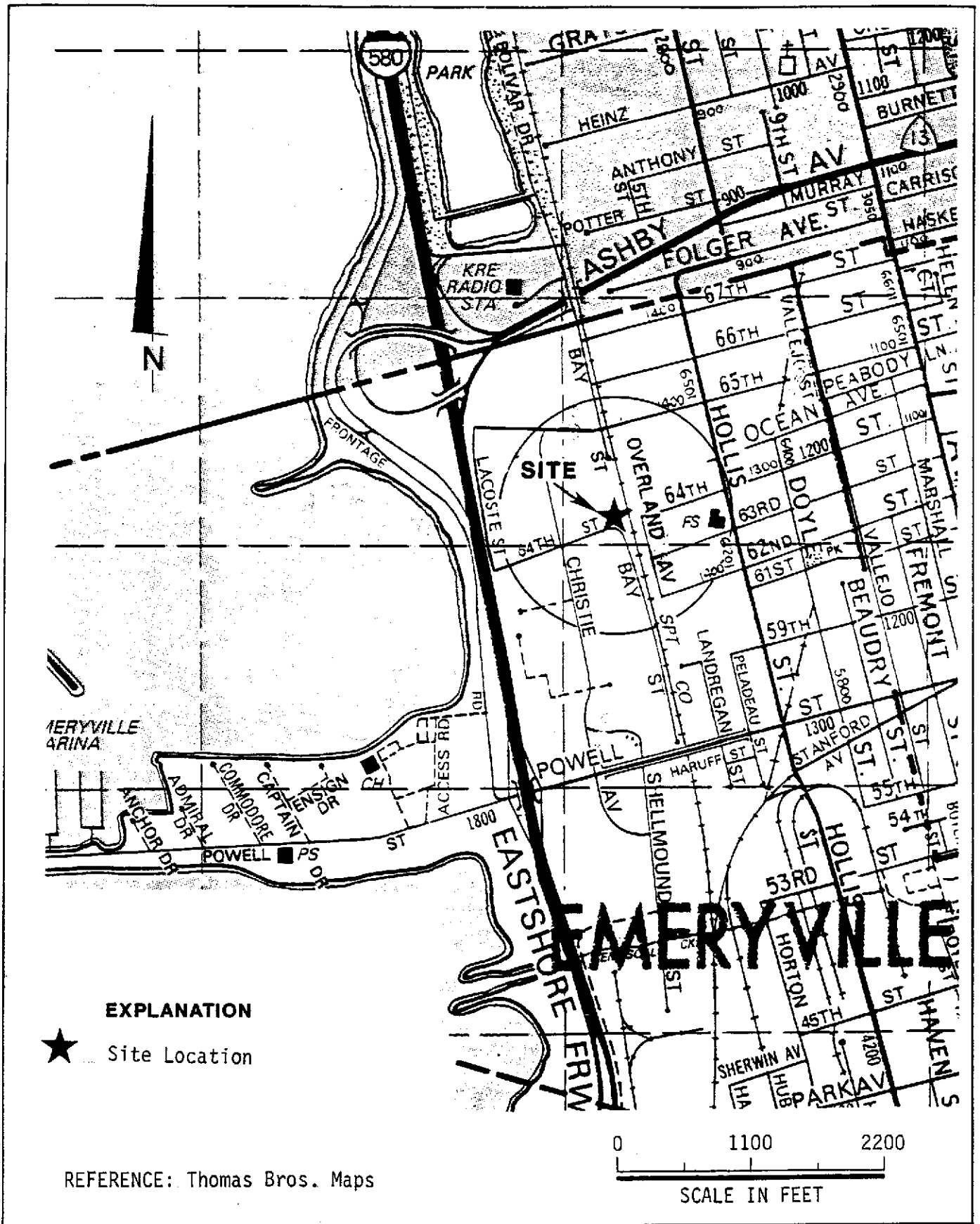
NE = None established.

Table 13. Concentrations of Selected Compounds in Groundwater Samples  
(reported in parts per million [ppm])

Parameter	Drinking*	MW-1		MW-2		MW-3		MW-4	MW-5	MW-6
	Water Standards	12/29/89	03/24/90	12/29/89	03/24/90	12/29/89	03/24/90	03/24/90	03/24/90	03/24/90
<u>VOCs**</u>										
Benzene	0.001	<0.005	<0.0003	<0.005	<0.0003	<0.005	<0.0003	0.004	<0.0003	0.00041
Toluene	0.1	<0.005	<0.0003	<0.005	<0.0003	<0.005	<0.0003	0.002	<0.0003	<0.0003
Ethylbenzene	0.68	<0.005	<0.0003	<0.005	<0.0003	<0.005	<0.0003	<0.0003	<0.0003	<0.0003
Xylene	1.75	<0.010	0.00032	<0.01	0.00042	<0.010	<0.0003	0.00052	<0.0003	.0013
Trichloroethene	0.005	<0.005	<0.0005	<0.005	<0.0005	<0.005	<0.0005	<0.0005	0.00099	<0.0005
4-methyl-2-pentanone	NE	0.052	--	<0.05	--	<0.05	--	--	--	--
<u>SOCs**</u>										
All compounds	NE	ND	--	ND	--	ND	--	--	--	--
<u>PNAs**</u>										
All Compounds	NE	ND	ND	ND	ND	ND	ND	ND	ND	ND
<u>TPH**</u>										
Gasoline Range	NE	0.1	0.085	.1	0.050	<0.1	<0.03	0.04	<0.03	0.042
Diesel Fuel Range	NE	<0.3	0.220	<.3	0.6	<0.3	0.3	0.34	0.1	1.2
Motor Oil Range	NE	0.9	--	.7	--	5.2	--	--	--	--
<u>TOG**</u>	NE	<1.0	<1.0	12.0	4.2	2.0	4.8	4.2	<1.0	12.0
<u>Ethyl Alcohol</u>	NE	<1.0	--	<1.0	--	<1.0	--	--	--	--
<u>Metals</u>										
Lead	0.05	<0.01	<0.005	<0.010	<0.005	<0.010	<0.005	<0.005	0.005	0.0066
Zinc	5.0	0.028	0.069	0.015	0.1	0.078	0.250	0.160	0.068	0.150

\* Action levels are specified by the California Department of Health Services; where action levels have not been established, maximum contaminant levels (MCLs) are listed.

\*\* VOCs = Volatile organic compounds using EPA Test Method 8240 (12/29/89) and EPA Test Methods 8010 and 8020 (03/24/90).  
 SOCs = Semivolatile organic compounds using USEPA Test Method 8270.  
 PNAs = Polynuclear aromatic hydrocarbons using EPA Test Method 8270 (12/29/89) and EPA Test Method 8100 (03/24/90).  
 TPH = Total petroleum hydrocarbons using modified EPA Test Methods 5030/3550/8015 (purge and trap or extraction, followed by gas chromatography).  
 TOG = Total oil and grease using Standard Method 503E (12/29/89) and USEPA Test Method 418.1 (3/24/90)  
 ND = Not detected  
 NE = Not established  
 -- = Not analyzed



**EXPLANATION**  
 ★ Site Location

REFERENCE: Thomas Bros. Maps

0 1100 2200  
 SCALE IN FEET

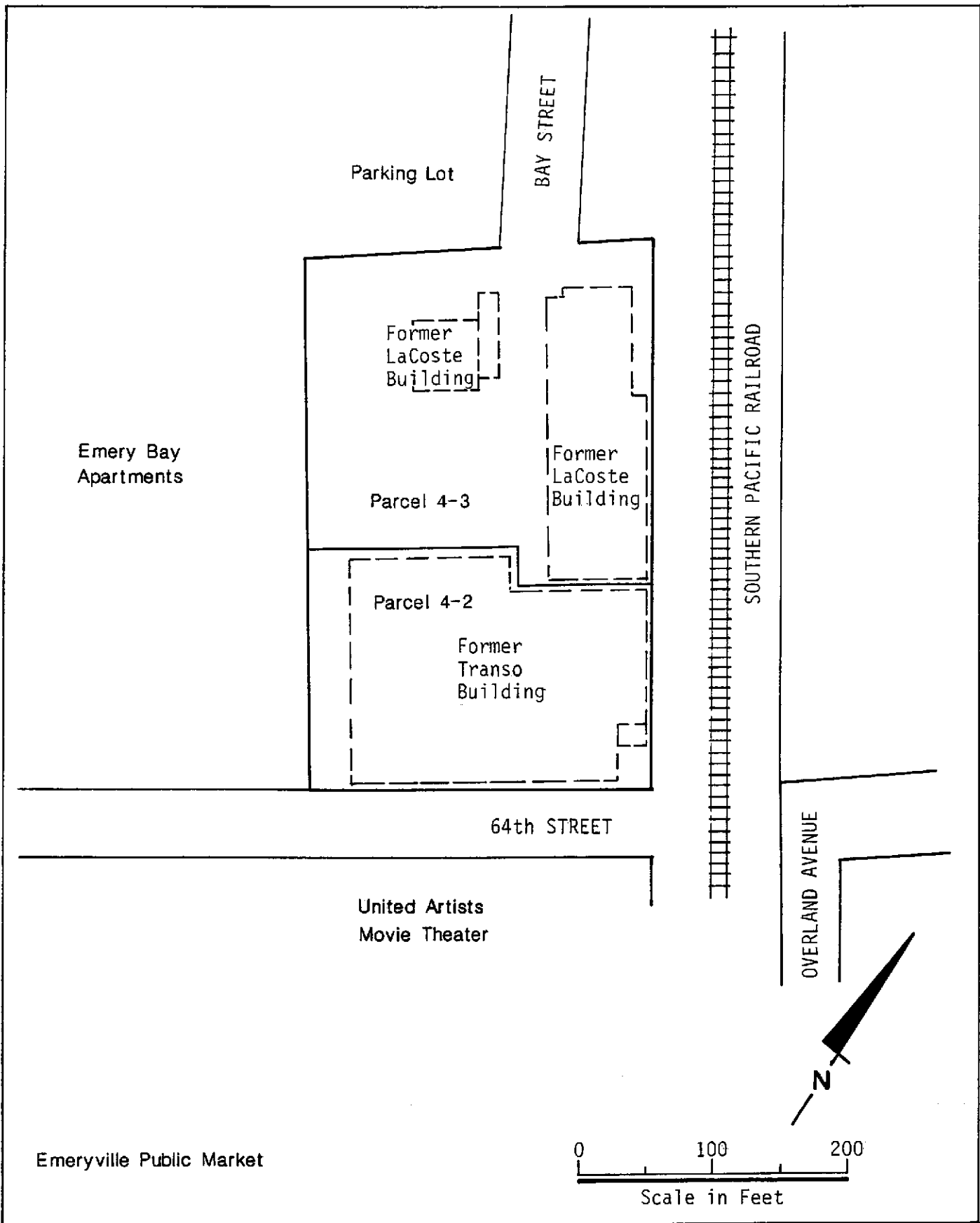


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 Environmental Services

**Vicinity Map**  
 Transo/LaCoste Site  
 Emeryville, California

PLATE  
**1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
YC	2421,014.03	TJM	8/90	

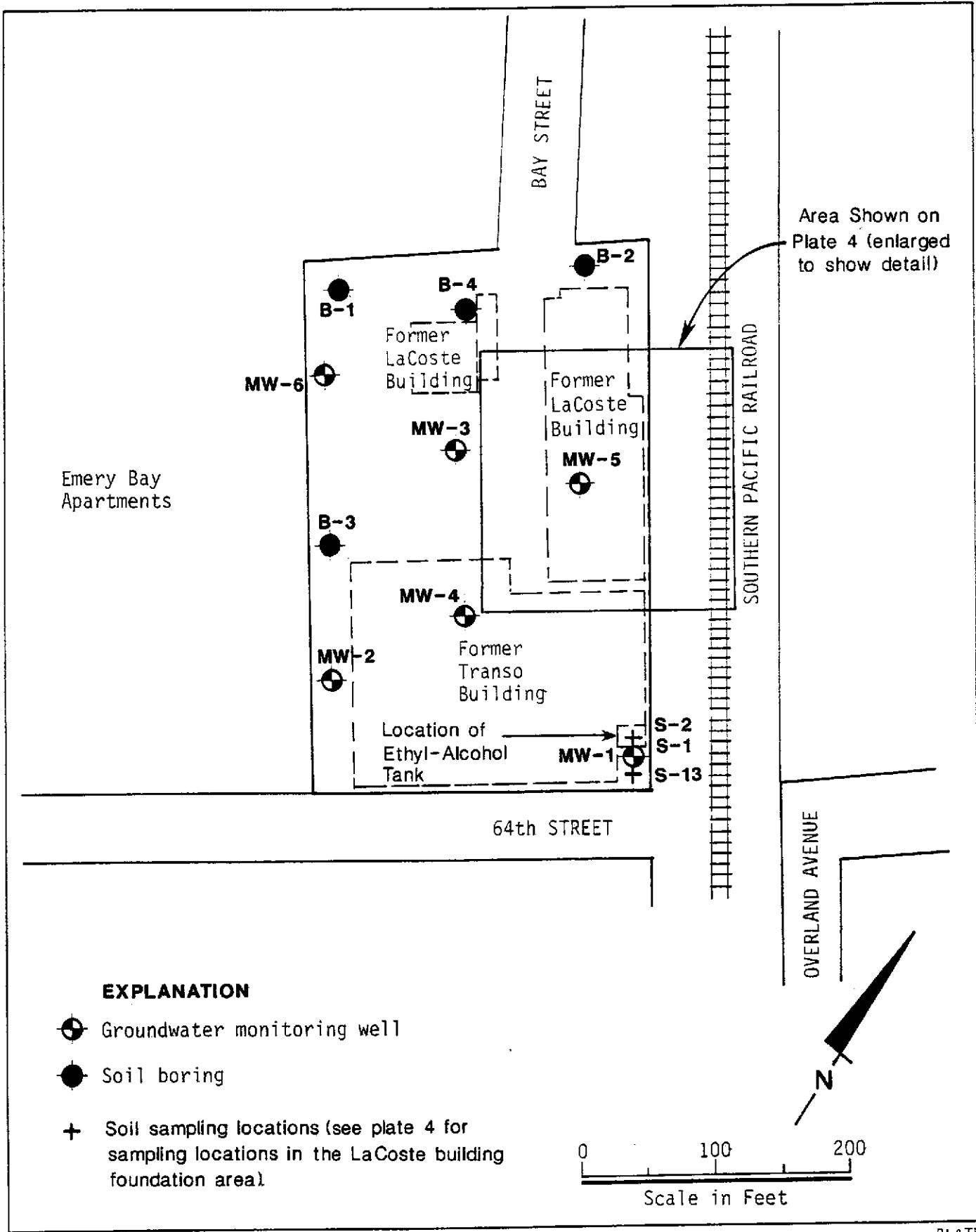


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**Site Map**  
**Transo/LaCoste Site**  
 Emeryville, California

PLATE  
**2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
YC	2421,014.03	TJM	4/90	

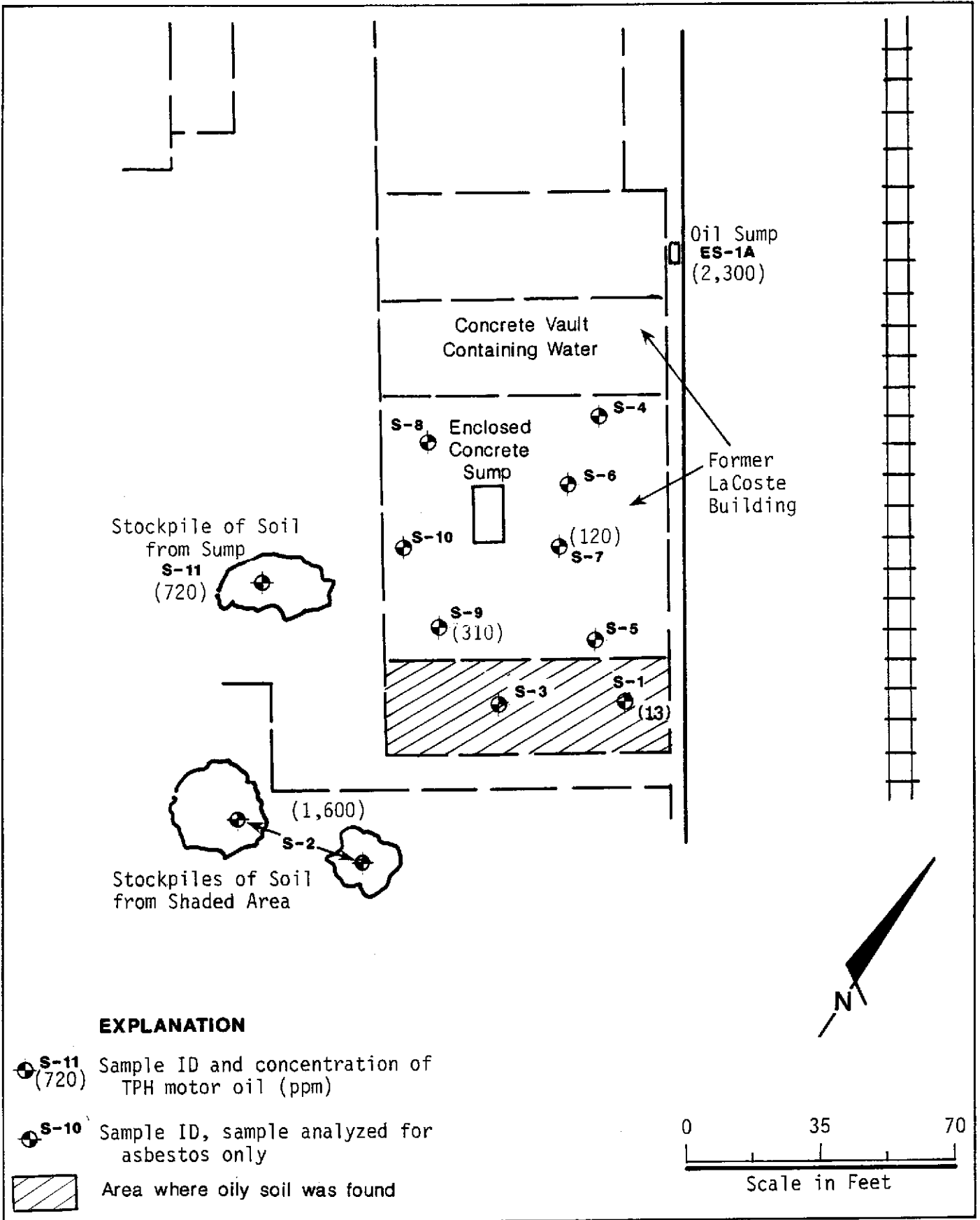


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**Soil Sampling Locations**  
Transo/LaCoste Site  
Emeryville, California

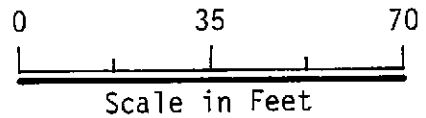
PLATE  
**3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
YC	2421,014.03	TJM	4/90	



**EXPLANATION**

- Sample ID and concentration of TPH motor oil (ppm)
- Sample ID, sample analyzed for asbestos only
- Area where oily soil was found



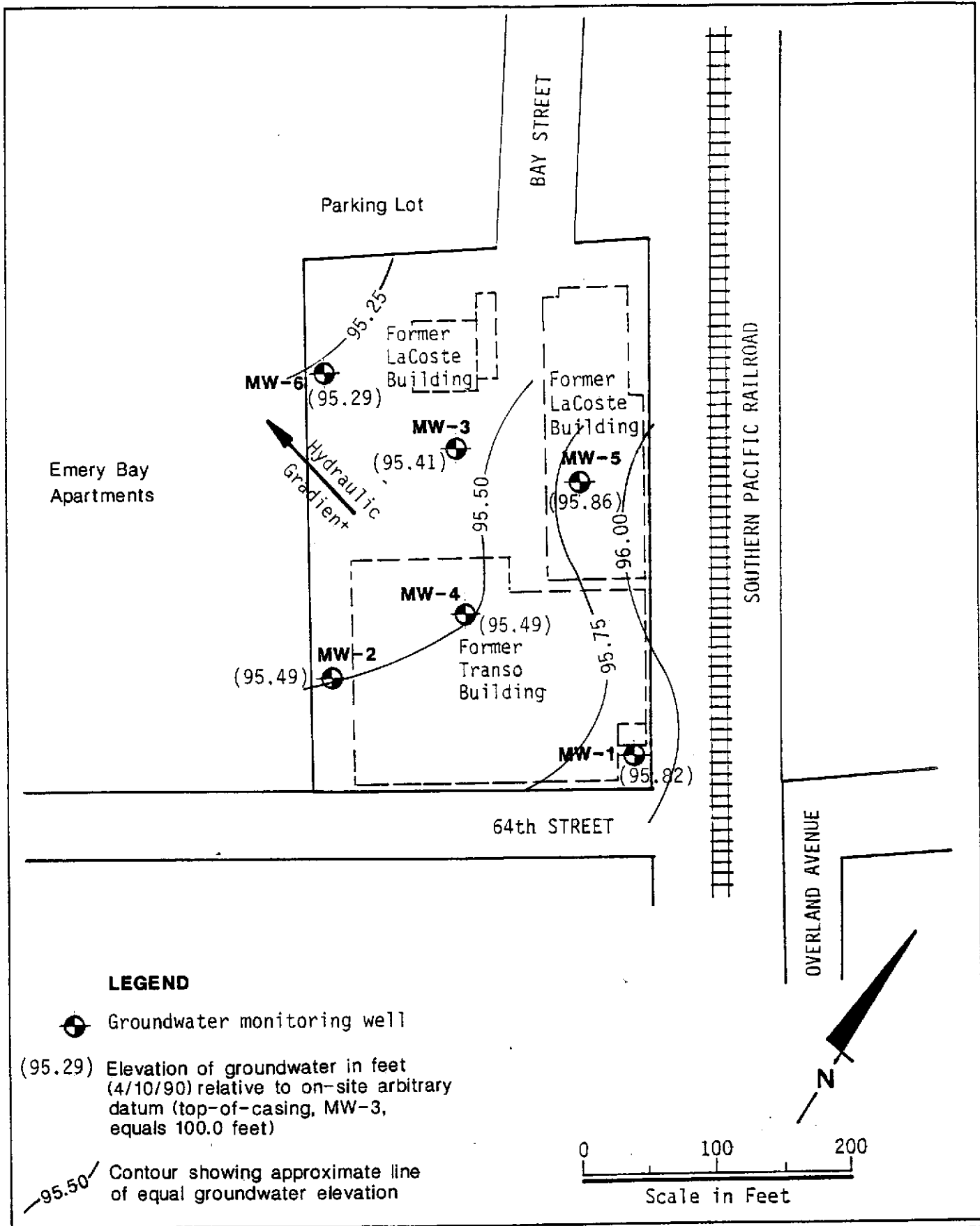
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**Soil Sampling Locations,  
 LaCoste Building Foundation  
 Transo/LaCoste Site  
 Emeryville, California**

PLATE  
**4**

DRAWN YC	JOB NUMBER 2421,014.03	APPROVED TJM	DATE 4/90	REVISED DATE
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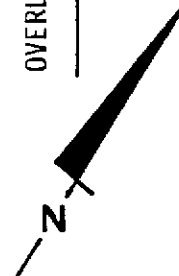
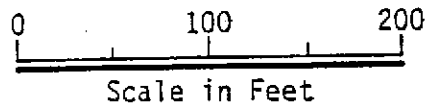


**LEGEND**

Groundwater monitoring well

(95.29) Elevation of groundwater in feet (4/10/90) relative to on-site arbitrary datum (top-of-casing, MW-3, equals 100.0 feet)

Contour showing approximate line of equal groundwater elevation



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**Hydraulic Gradient**  
Traso/LaCoste Site  
Emeryville, California

PLATE

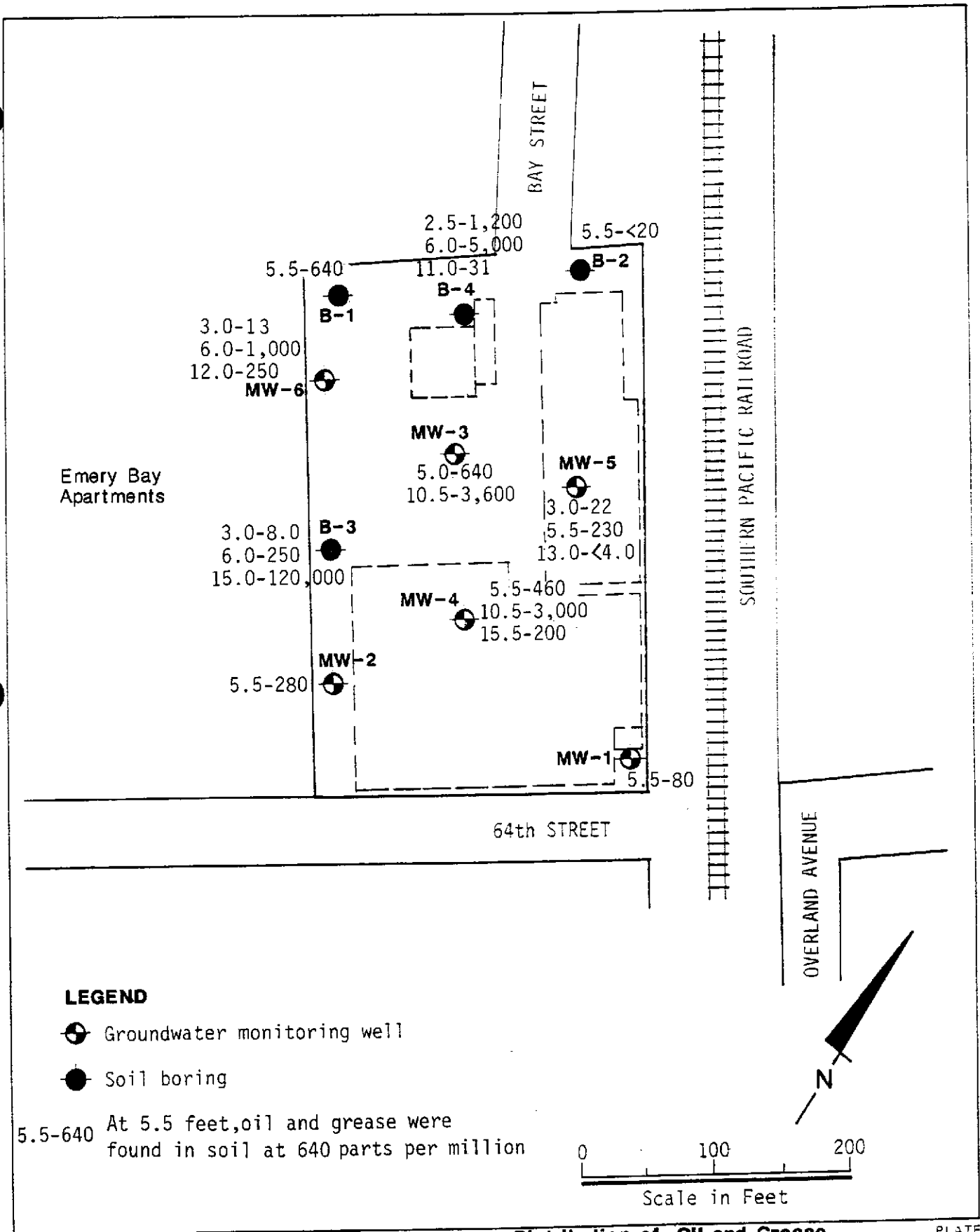
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DRAWN YC JOB NUMBER 2421,014.03

APPROVED TJM

DATE 4/90

REVISED DATE



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**Distribution of Oil and Grease  
 in Soil Samples  
 Transo/LaCoste Site  
 Emeryville, California**

PLATE

**6**

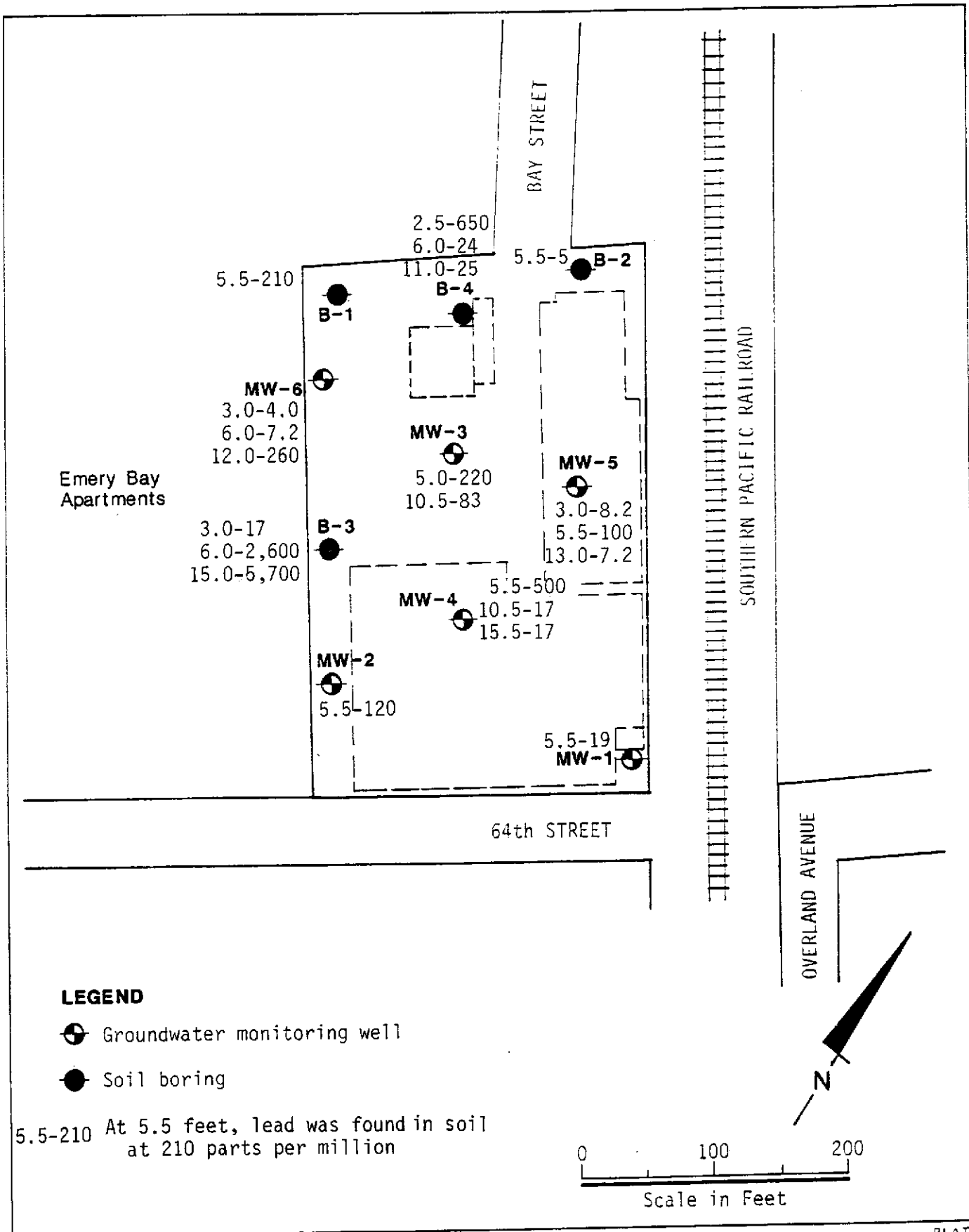
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 YC

JOB NUMBER  
 2421,014.03

APPROVED  
 TJM

DATE  
 4/90

REVISED DATE



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**Distribution of Lead in Soil Samples**  
 Transo/LaCoste Site  
 Emeryville, California

PLATE

**7**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
YC	2421,014.03	TJM	4/90	

APPENDIX A  
DRILLING AND SAMPLING METHODOLOGY

APPENDIX A

DRILLING AND SAMPLING METHODOLOGY

Soil borings were advanced using truck-mounted, 8-inch-diameter, hollow-stem auger drilling equipment, and sampled using a 2-1/2 inch (inside diameter), Sprague & Henwood (S&H), split-barrel sampler lined with 6-inch-long stainless steel tubes. Drilling was performed under the direction of an HLA engineer, who logged the borings in accordance with the Unified Soil Classification System.

All soil samples were screened in the field with a photoionization detector (PID). The PID detects the presence of some organic compounds. PID readings obtained are listed on the boring logs. All soil samples retained for chemical analysis were sealed with aluminum foil, plastic end caps, and electrical tape and stored in a cooled ice chest until delivery to a state-certified laboratory under chain-of custody-procedures.

Soil sampling equipment was cleaned with an Alconox and water solution and rinsed with deionized water between sampling intervals. Drilling augers were steam cleaned between borings. Soil cuttings generated during drilling were stored in labeled Department of Transportation (DOT) certified 55-gallon drums pending analytical results.

All borings not converted into monitoring wells were backfilled with a cement/bentonite grout from the bottom of the boring to ground surface. The groundwater monitoring wells were constructed using 2-inch-diameter, Schedule 40, PVC casing with

flush-mounted, threaded joints. The wells consisted of 10 feet of slotted casing (0.02-inch slot widths) installed at the bottom of the boring and an appropriate amount of solid PVC casing to the surface. The bottom of the casings were capped with a threaded end cap. The annular space between the casing and the boring was backfilled with No. 3 Monterey sand to approximately one foot above the screened casing. A one to two foot layer of bentonite pellets was placed on top of the sand pack and the remainder of the boring was backfilled with a cement/bentonite sanitary seal. The top of the casings were secured with water-tight, locking expansion caps. The wells were housed in water tight, traffic-rated boxes.

After the cement/bentonite grout was allowed to set for at least 24 hours, each well was developed by bailing, in an attempt to obtain a groundwater sample that was visually clear and free of sediment. During development, we monitored turbidity, temperature, pH, and conductivity. Approximately 10 well volumes were removed from each well during development. Groundwater removed from the wells was stored on site in DOT-certified drums pending analytical results.

Prior to each water sampling, wells were purged of at least three well volumes while monitoring the above aquifer parameters. After purging, water from the wells was sampled with a clean stainless steel bailer, and samples were decanted into laboratory prepared containers. Water samples collected for metal analysis were filtered in the field through a 0.45-micron (pore size)

filter and then preserved with nitric acid. All sampling and purging equipment was decontaminated between wells in an Alconox solution and rinsed with deionized water. All groundwater samples were placed in cooled ice chests and delivered to a state-certified chemical testing laboratory under chain-of-custody procedures.

Water level measurements were obtained after the wells were developed and the water levels equilibrated to establish the hydraulic gradient at the site. Water levels were taken with a chalked steel tape to the nearest hundredth of a foot.

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS	ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS	
		CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS	
		OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY	
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%	MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS	
		CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS	
		OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY	
HIGHLY ORGANIC SOILS		Pt		PEAT AND OTHER HIGHLY ORGANIC SOILS	

UNIFIED SOIL CLASSIFICATION - ASTM D2487-85

Perm — Permeability	Shear Strength (psf)	Confining Pressure	
Consol — Consolidation	TxUU 3200 (2600) — Unconsolidated Undrained Triaxial Shear (FM) or (S)		
LL — Liquid Limit (%)	TxCU 3200 (2600) — Consolidated Undrained Triaxial Shear (P)		
PI — Plastic Index (%)	TxCD 3200 (2600) — Consolidated Drained Triaxial Shear		
G <sub>s</sub> — Specific Gravity	SSCU 3200 (2600) — Simple Shear Consolidated Undrained (P)		
MA — Particle Size Analysis	SSCD 3200 (2600) — Simple Shear Consolidated Drained		
■ — "Undisturbed" Sample	DSCD 2700 (2000) — Consolidated Drained Direct Shear		
⊠ — Bulk or Classification Sample	UC 470 — Unconfined Compression		
	LVS 700 — Laboratory Vane Shear		

KEY TO TEST DATA



**Harding Lawson Associates**  
Engineers and Geoscientists

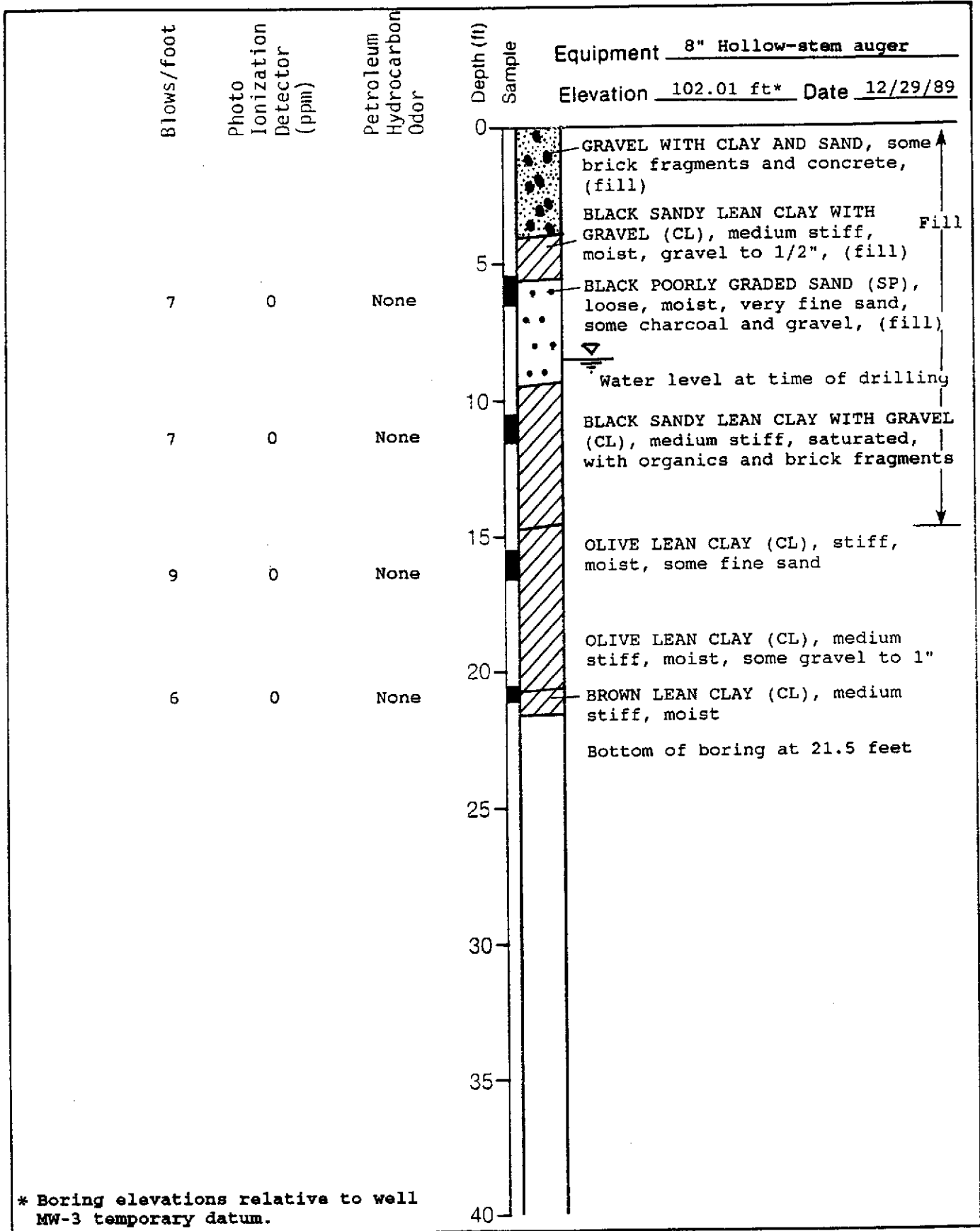
**Soil Classification and Test Data Key**

Transo/LaCoste Site  
Emeryville, California

PLATE

**B-1**





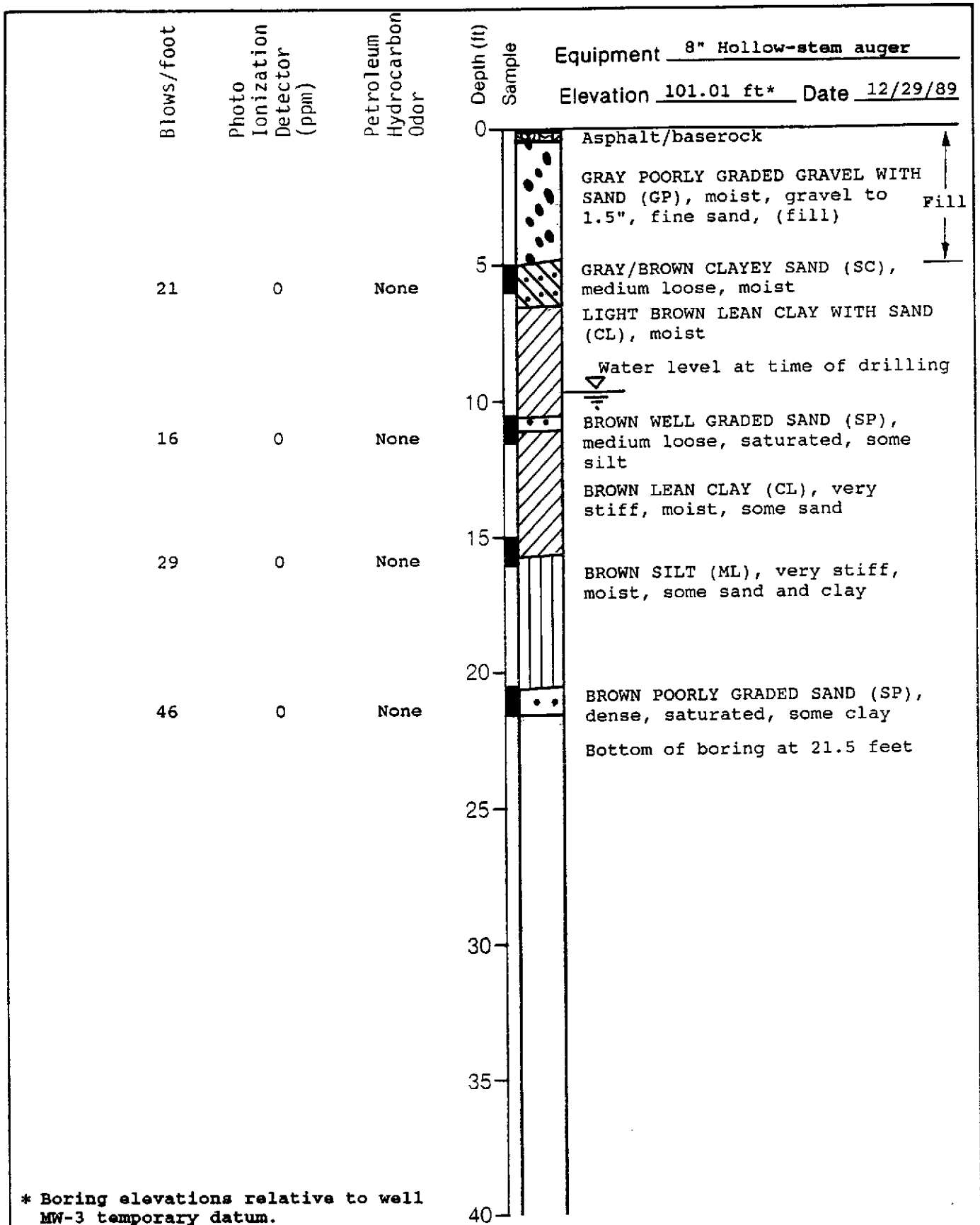
\* Boring elevations relative to well MW-3 temporary datum.



**Harding Lawson Associates**  
Engineers and Geoscientists

**Log of Boring B-1**  
Tranco/LaCoste Site  
Emeryville, California

PLATE  
**B-2**



\* Boring elevations relative to well MW-3 temporary datum.



**Harding Lawson Associates**  
Engineers and Geoscientists

**Log of Boring B-2**  
Tranzo/LaCoste Site  
Emeryville, California

PLATE

**B-3**

DRAWN  
YC

JOB NUMBER  
2421,014.03

APPROVED  
TJM

DATE  
1/90

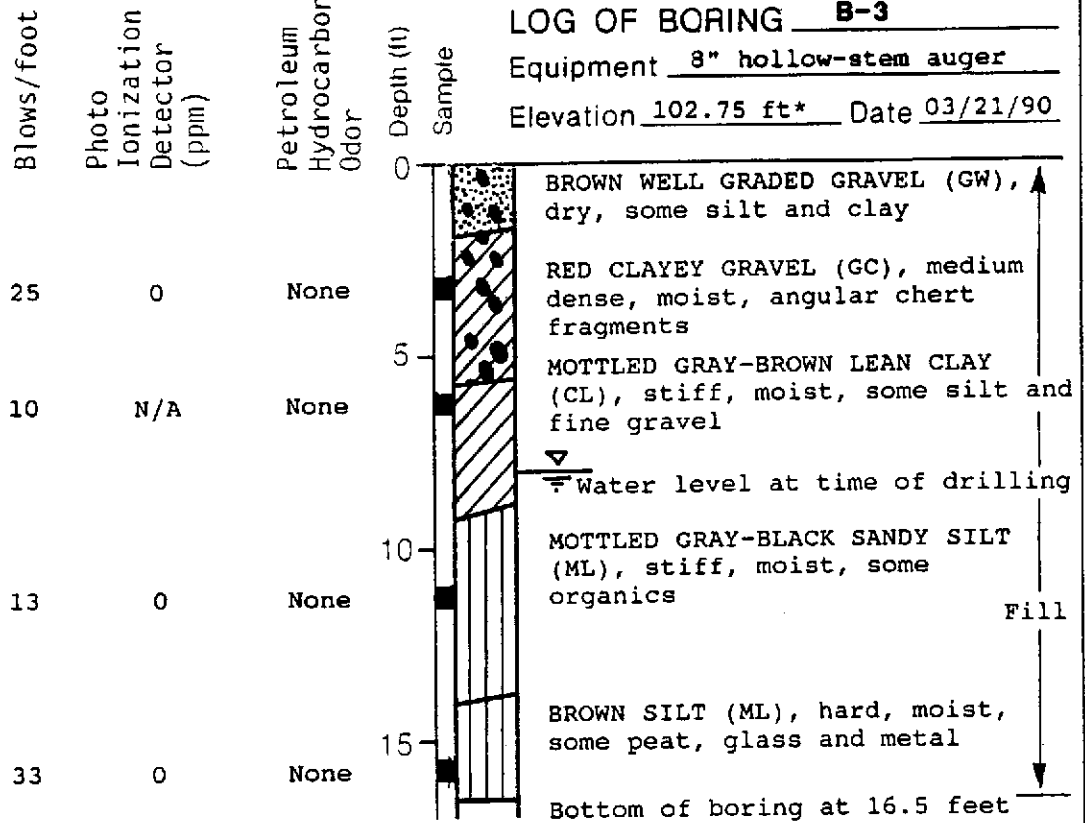
REVISED

DATE

**LOG OF BORING B-3**

Equipment 8" hollow-stem auger

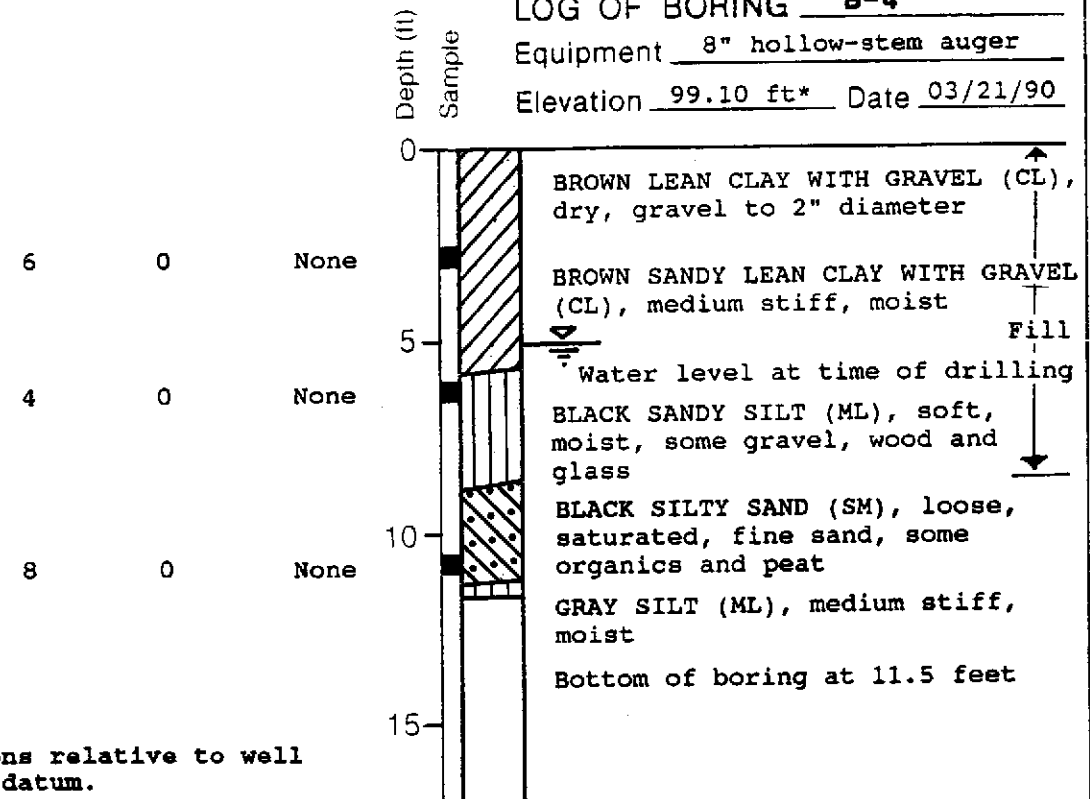
Elevation 102.75 ft\* Date 03/21/90



**LOG OF BORING B-4**

Equipment 8" hollow-stem auger

Elevation 99.10 ft\* Date 03/21/90



\* Boring elevations relative to well MW-3 temporary datum.



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Logs of Borings B-3 and B-4**

Traso/LaCoste Site  
Emeryville, California

PLATE

**B-4**

DRAWN  
YC

JOB NUMBER  
2421,014.03

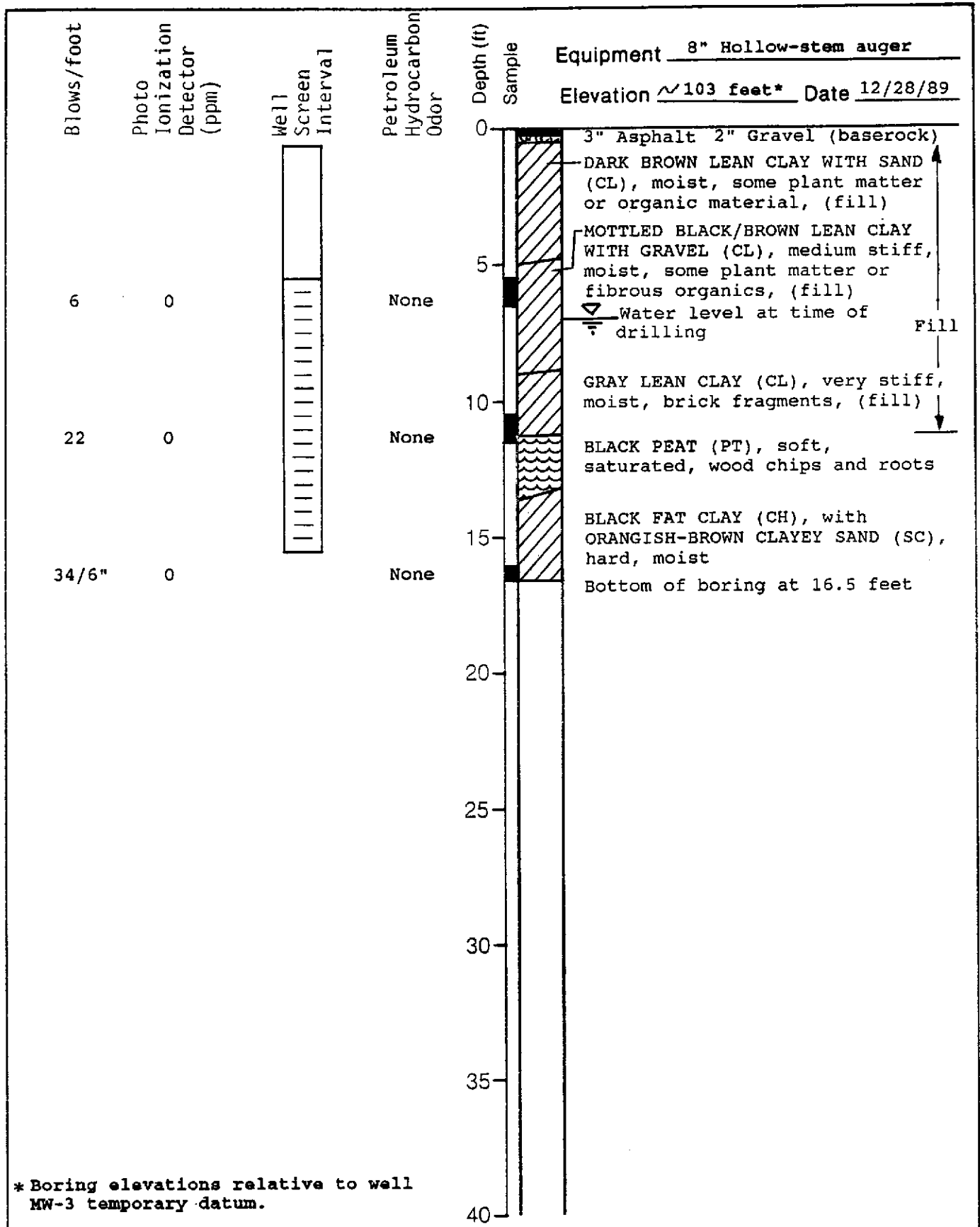
APPROVED  
TJM

DATE  
4/90

REVISED

DATE





\* Boring elevations relative to well MW-3 temporary datum.

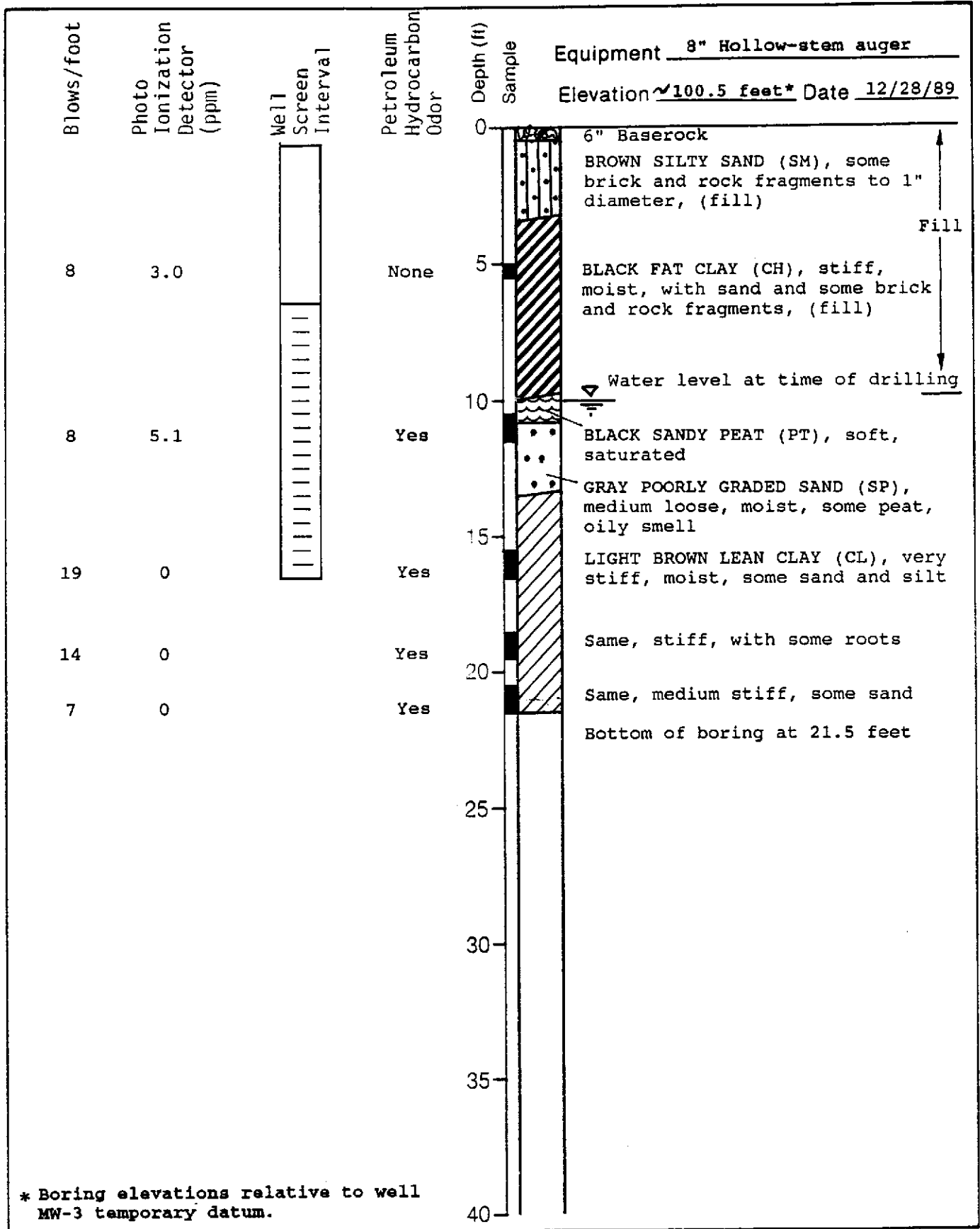


**Harding Lawson Associates**  
Engineers and Geoscientists

**Log of Boring MW-2**  
Transo/LaCoste Site  
Emeryville, California

PLATE

**B-6**



\* Boring elevations relative to well MW-3 temporary datum.



**Harding Lawson Associates**  
Engineers and Geoscientists

**Log of Boring MW-3**  
Traso/LaCoste Site  
Emeryville, California

PLATE

**B-7**

DRAWN  
YC

JOB NUMBER  
2421,014.03

APPROVED  
TJM

DATE  
1/90

REVISED

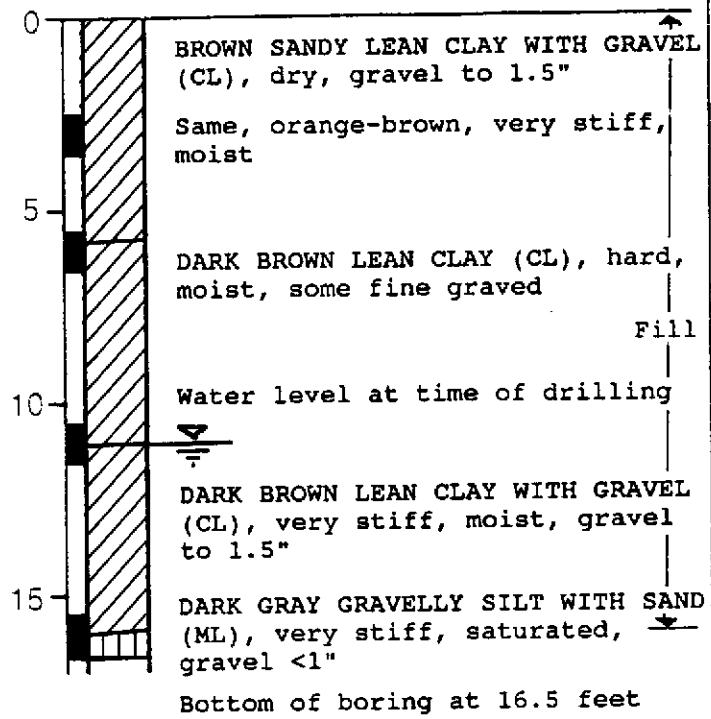
DATE

LOG OF BORING MW-4

Equipment 8" hollow-stem auger

Elevation ~106 feet\* Date 03/20/90

Blows/foot	Photo Ionization Detector (ppm)	Petroleum Hydrocarbon Odor
29	0	None
37	65	Yes
24	7	Yes
29	0	None

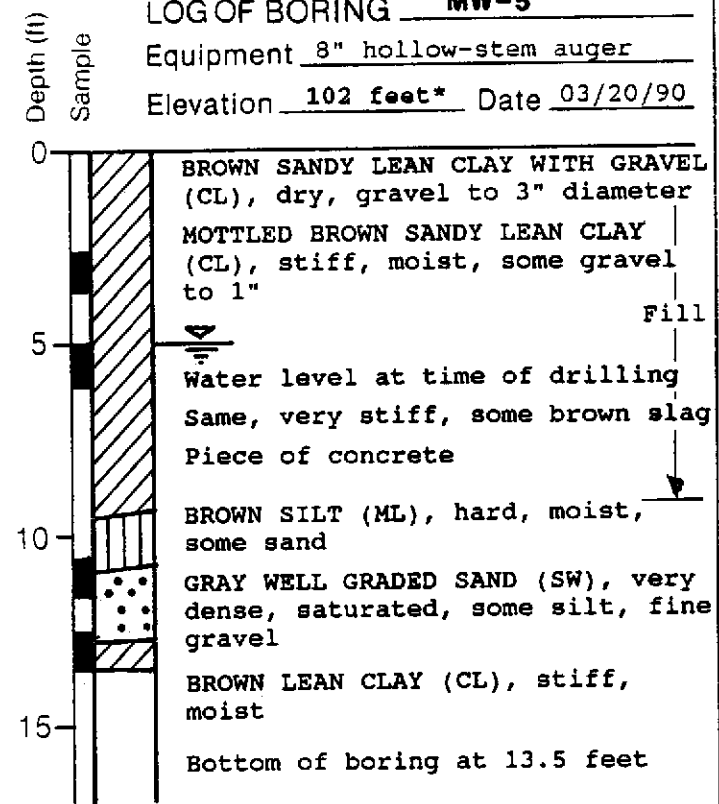


LOG OF BORING MW-5

Equipment 8" hollow-stem auger

Elevation 102 feet\* Date 03/20/90

Blows/foot	Photo Ionization Detector (ppm)	Petroleum Hydrocarbon Odor
14	0	None
20	0	None
56	0	None
17	N/A	N/A



\* Boring elevations relative to well MW-3 temporary datum.



**Harding Lawson Associates**  
Engineers, Geologists  
& Geophysicists

**Logs of Borings MW-4 and MW-5**  
Traso/LaCoste Site  
Emeryville, California

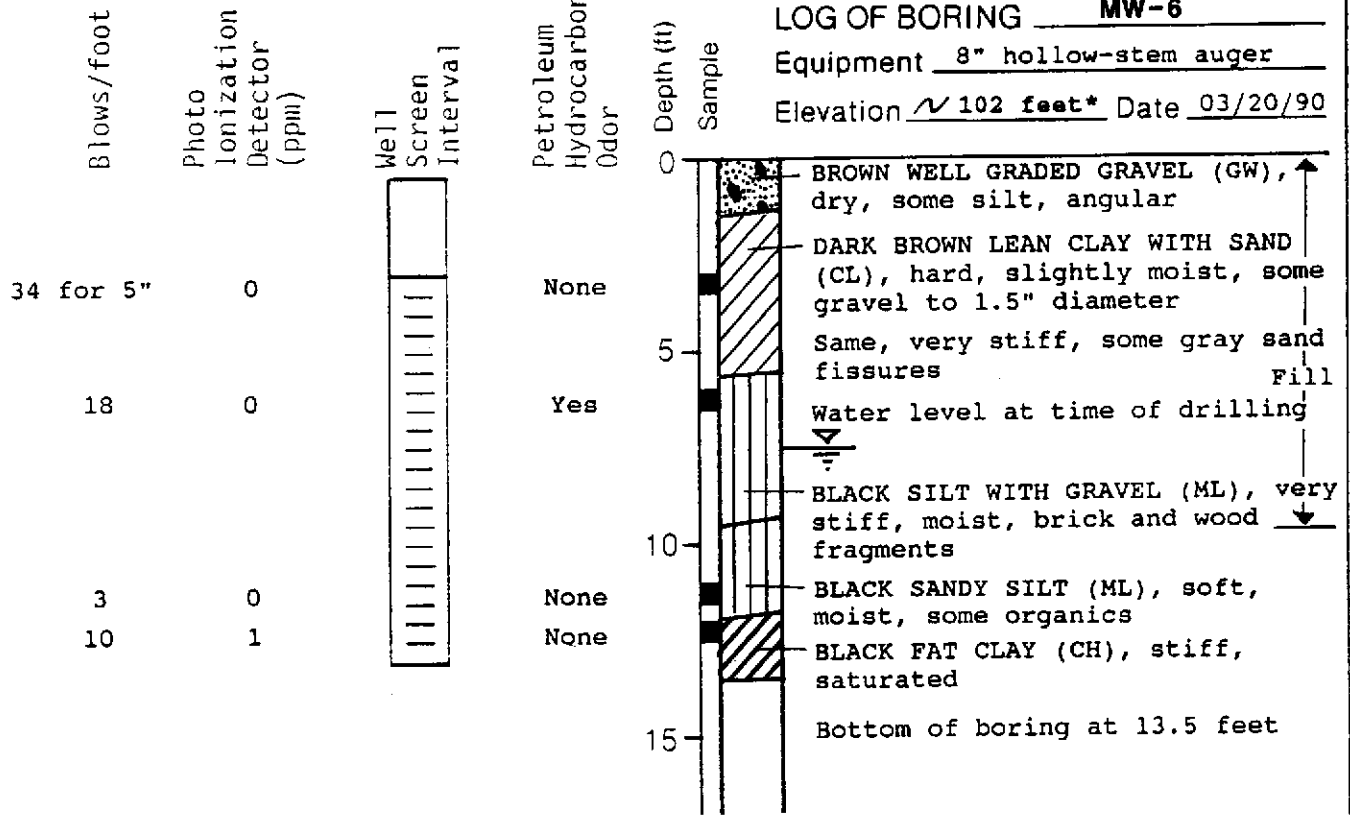
PLATE

**B-8**

LOG OF BORING MW-6

Equipment 8" hollow-stem auger

Elevation ~ 102 feet\* Date 03/20/90



\* Boring elevations relative to well MW-3 temporary datum.



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& Geophysicists

**Log of Boring MW-6**

Transo/LaCoste Site

Emeryville, California

PLATE

**B-9**

DRAWN  
YC

JOB NUMBER  
2421,014.03

APPROVED  
TJM

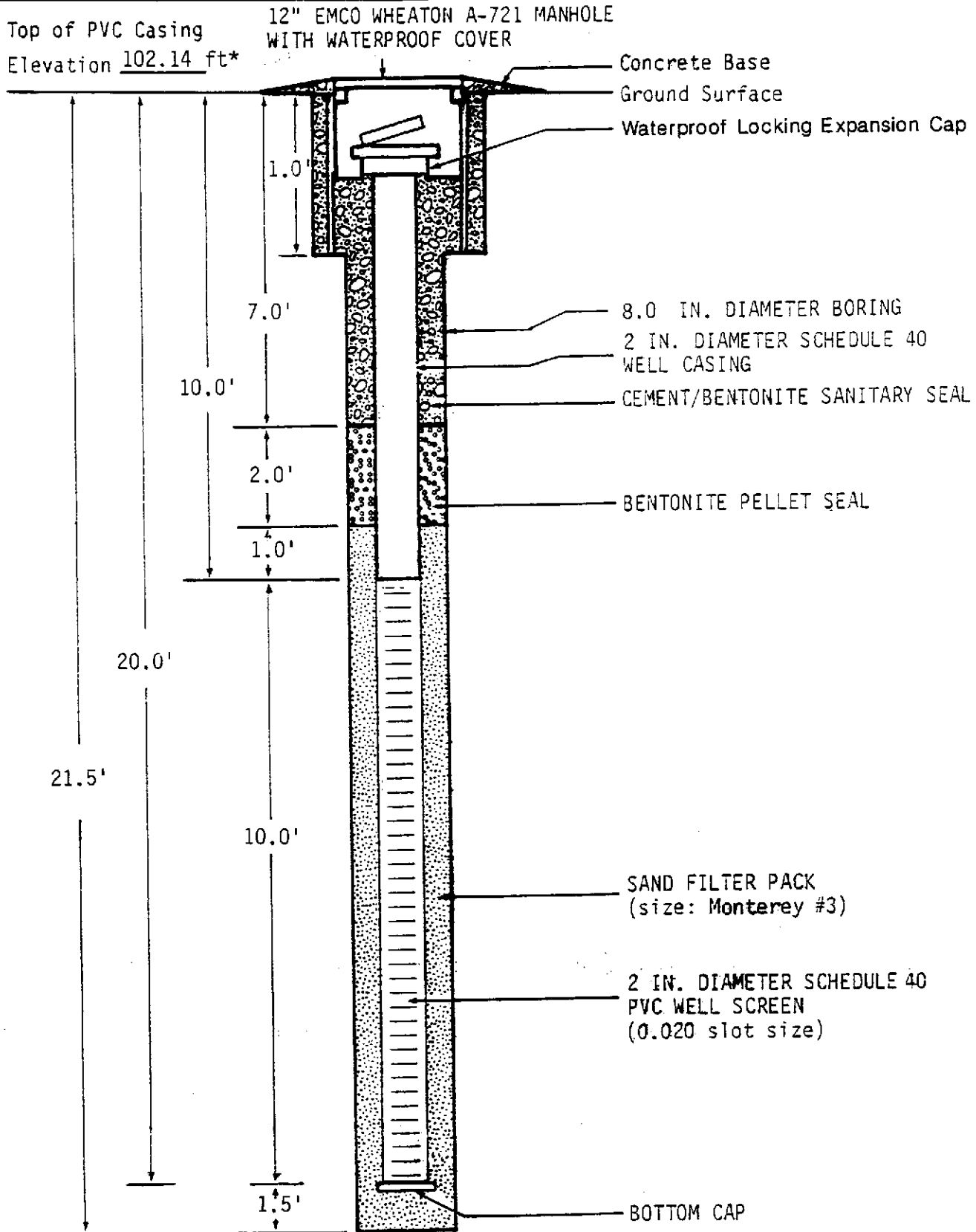
DATE  
4/90

REVISED

DATE



APPENDIX C  
WELL COMPLETIONS DETAILS



NOT TO SCALE

\* Casing elevation relative to MW-3



Harding Lawson Associates  
Engineers and Geoscientists

Well Completion Diagram MW-1  
Traso/LaCoste Site  
Emeryville, California

PLATE

C-1

DRAWN  
YC

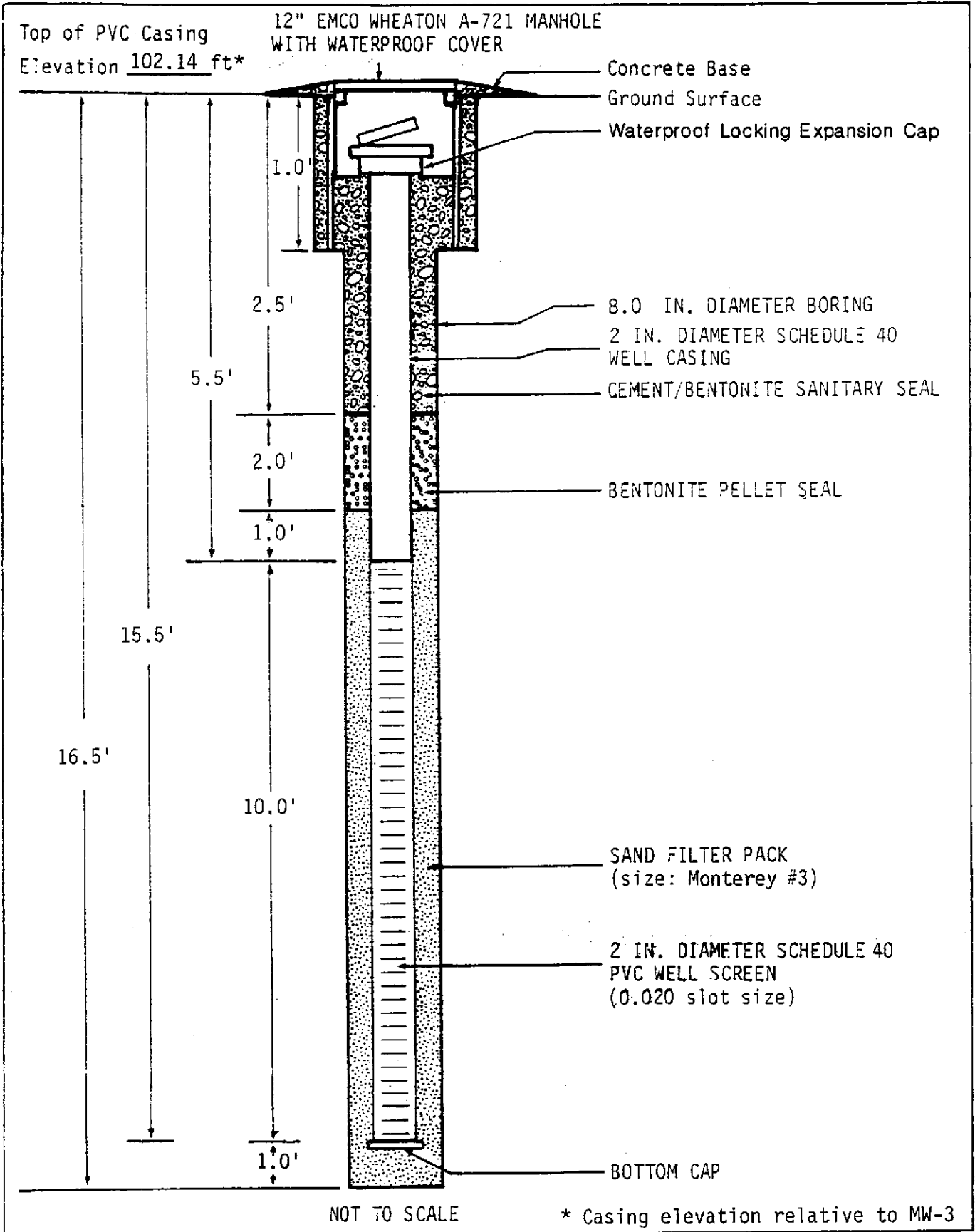
JOB NUMBER  
2421,014.03

APPROVED  
TJM

DATE  
1/90

REVISED

DATE



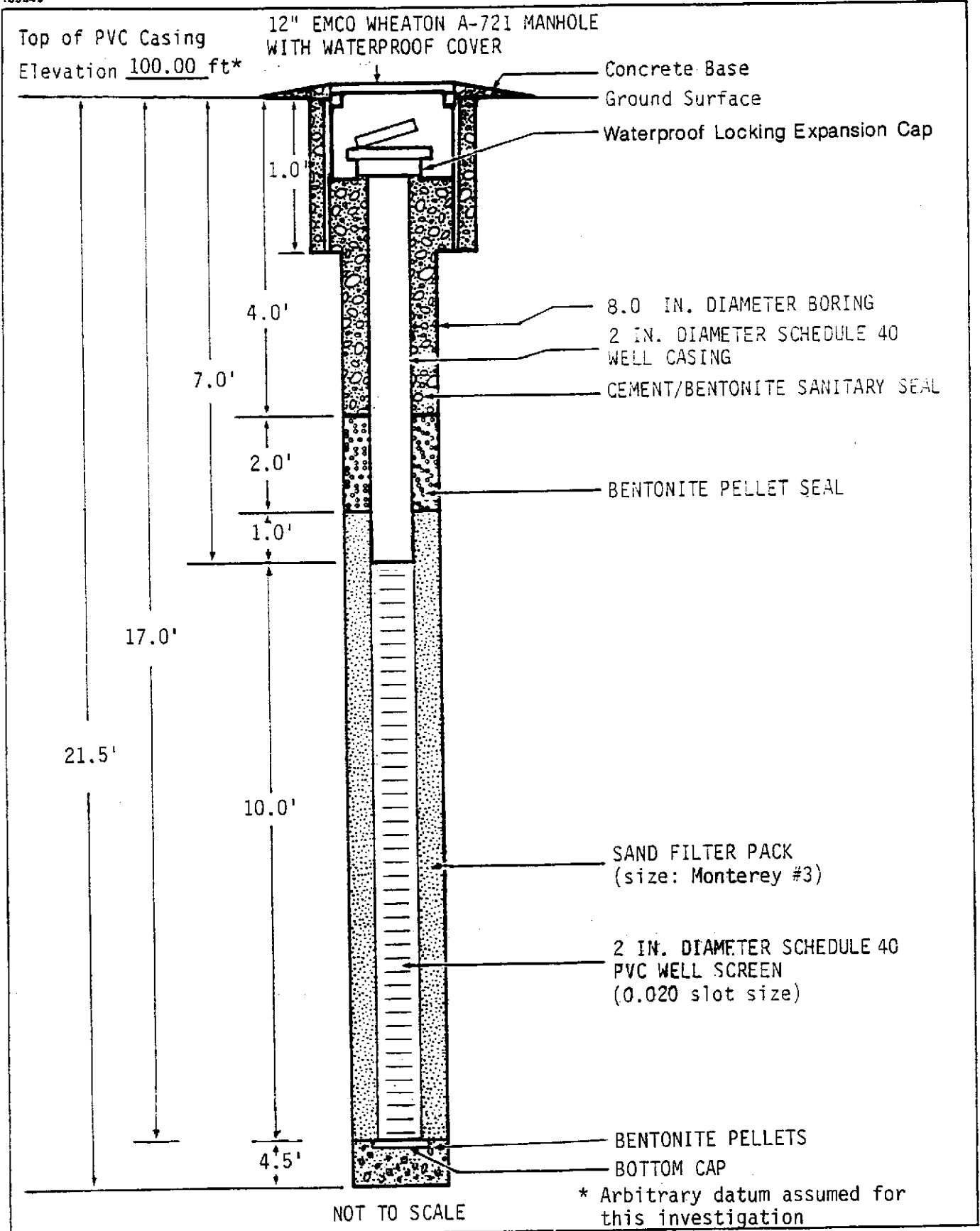
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Engineers and Geoscientists

**Well Completion Diagram MW-2**  
Transo/LaCoste Site  
Emeryville, California

PLATE

**C-2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
YC	2421,014.03	TJM	1/90		



PLATE

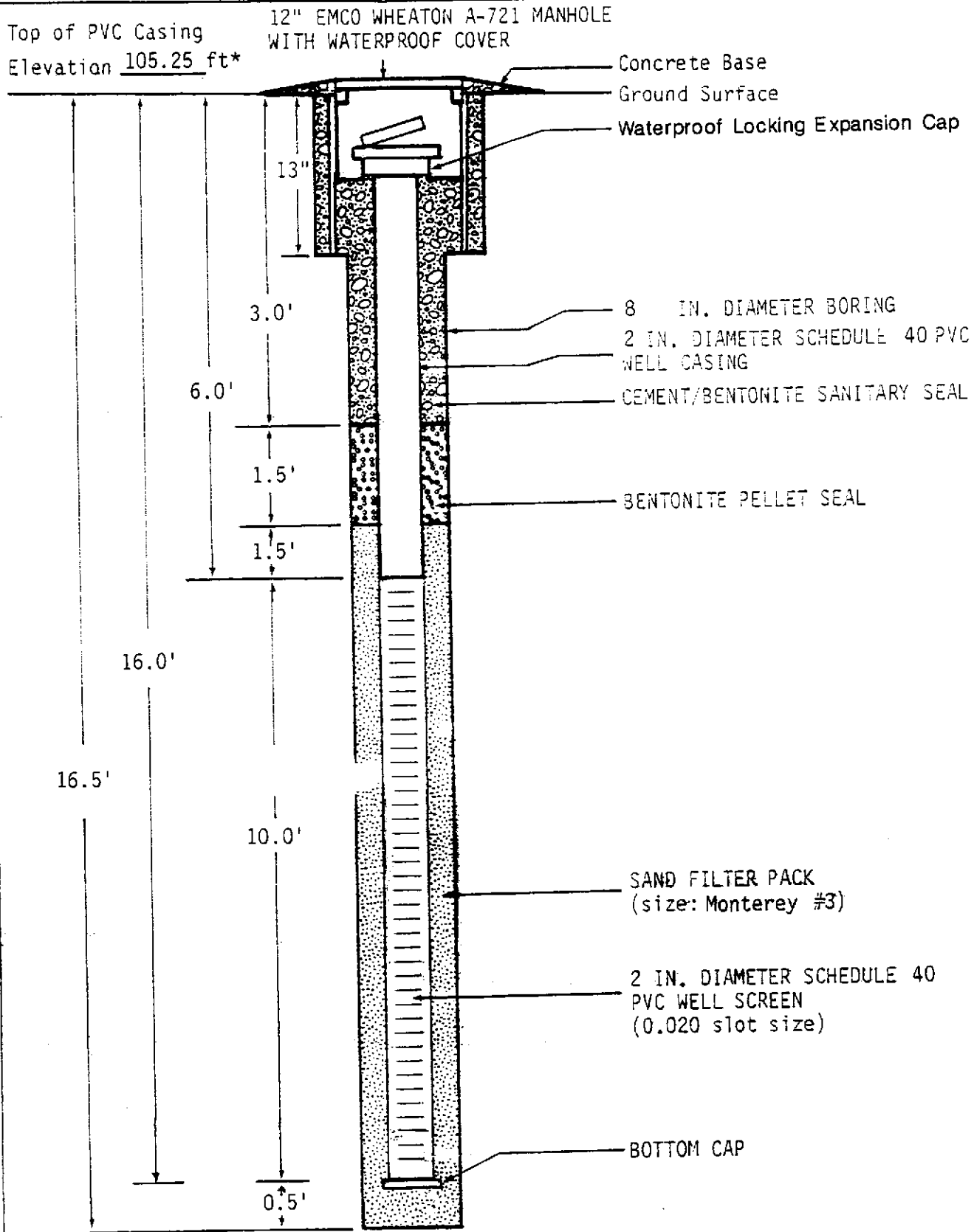


**Harding Lawson Associates**  
Engineers and Geoscientists

**Well Completion Diagram MW-3:**  
Traso/LaCoste Site  
Emeryville, California

**C-3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
YC	2421,014.03	TJM	1/90		



NOT TO SCALE

\* Casing elevation relative to MW-3

**Harding Lawson Associates**  
Engineers and Geoscientists

**Well Completion Diagram MW-4**

PLATE

Traso/LaCoste Site  
Emeryville, California

**C-4**

DRAWN  
YC

JOB NUMBER  
2421,014.03

APPROVED  
TJM

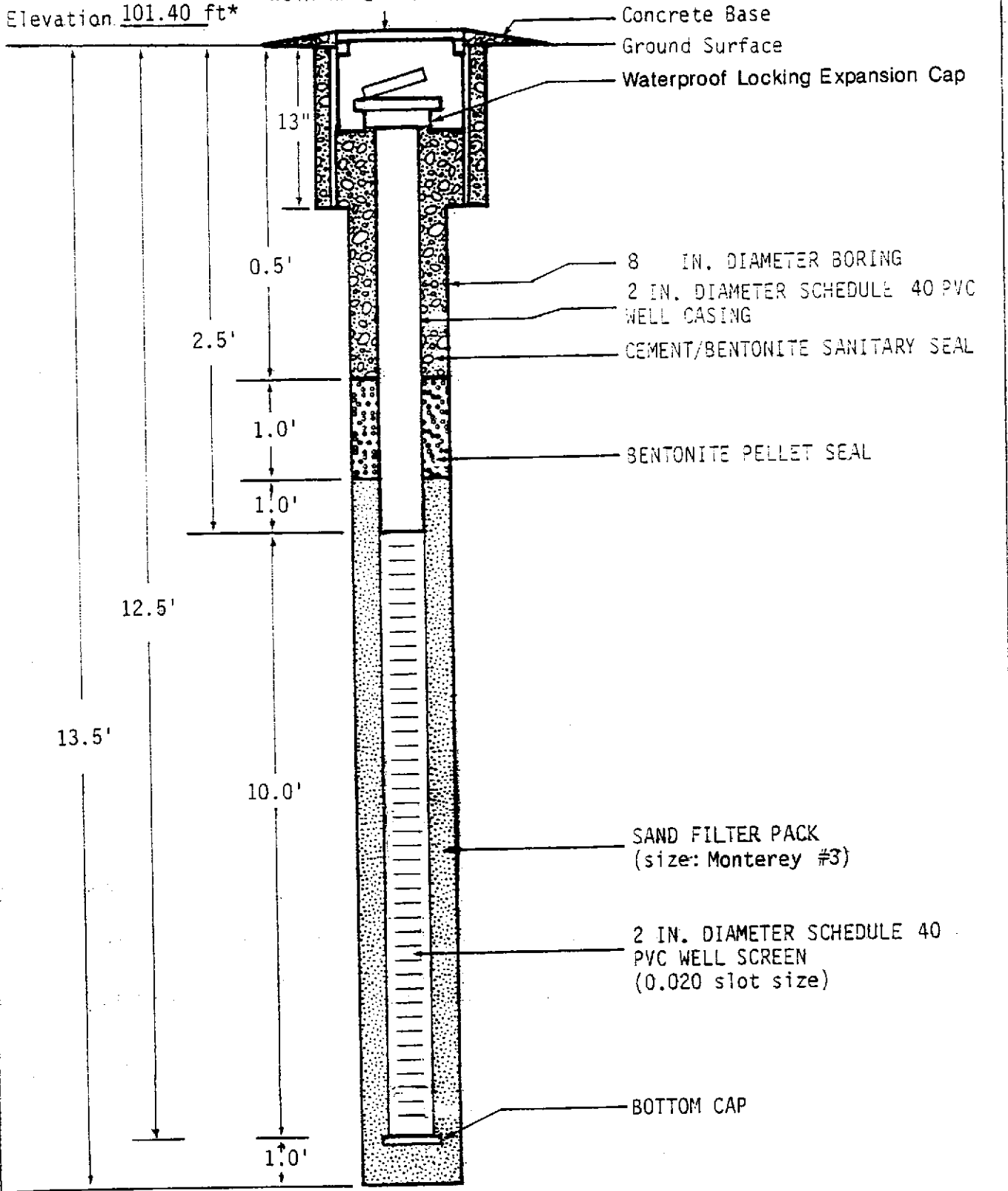
DATE  
4/90

REVISED

DATE

Top of PVC Casing  
Elevation 101.40 ft\*

12" EMCO WHEATON A-721 MANHOLE  
WITH WATERPROOF COVER



NOT TO SCALE

\* Casing elevation relative to MW-3



**Harding Lawson Associates**  
Engineers and Geoscientists

**Well Completion Diagram MW-5**

Traso/LaCoste Site  
Emeryville, California

PLATE

**C-5**

DRAWN  
YC

JOB NUMBER  
2421,014.03

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TJM

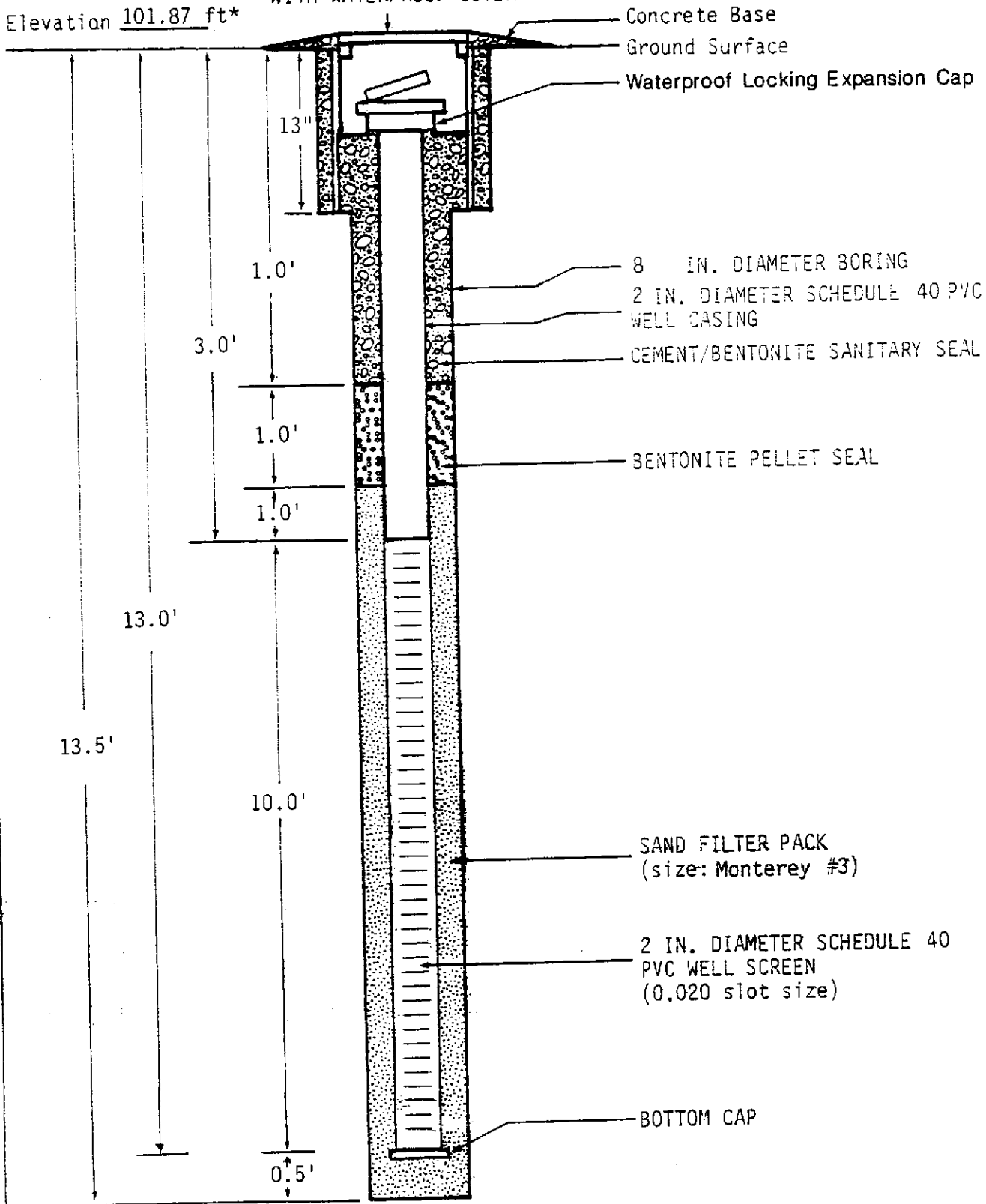
DATE  
4/90

REVISED

DATE

Top of PVC Casing  
Elevation 101.87 ft\*

12" EMCO WHEATON A-721 MANHOLE  
WITH WATERPROOF COVER



NOT TO SCALE

\* Casing elevation relative to MW-3



**Harding Lawson Associates**  
Engineers and Geoscientists

**Well Completion Diagram MW-6**

Traso/LaCoste Site  
Emeryville, California

PLATE

**C-6**

DRAWN  
YC

JOB NUMBER  
2421,014.03

APPROVED  
TJM

DATE  
4/90

REVISED

DATE

APPENDIX D  
METHODS OF SLUG TEST ANALYSIS



## APPENDIX D

## METHODS OF SLUG TEST ANALYSIS

The slug tests performed in MW-1 and MW-2 were analyzed according to the method of Hvorslev (1951). The ratio  $H_t/H_0$  is graphed on the logarithmic scale of semilogarithmic graph paper as a function of time since slug withdrawal. Here  $H_0$  is the vertical distance between the initial water level in the well immediately after slug withdrawal, and the equilibrium water level (hydraulic head) in the tested zone, and  $H_t$  is that vertical distance at some time after slug withdrawal.

Hydraulic conductivity is calculated from:

$$K = \frac{r^2 \ln (L/R)}{2 L T_0}$$

where  $r$  is the well casing radius,  $R$  is the well screen radius,  $L$  is the height of the portion of the well through which water enters, and  $T_0$  is the basic time lag. The value of  $T_0$  is measured directly from the water-level recovery hydrograph at  $H_t/H_0 = 0.37$  (Plates D-1 through D-3).

The slug tests of the confined strata (MW-3) were analyzed according to the method of Cooper et al. (1967). The water level recovery data were matched of a recovery-type curve, and the value of time on the data graph where  $Tt/r_c^2 = 1$  on the type curve was noted. Here  $T$  is transmissivity ( $L^2/t$ ),  $t$  is time after slug withdrawal, and  $r_c$  is the equivalent interior radius of the well casing ( $L$ ).

Transmissivity was then estimated from

$$T = \frac{1.0 r_c^2}{t}$$

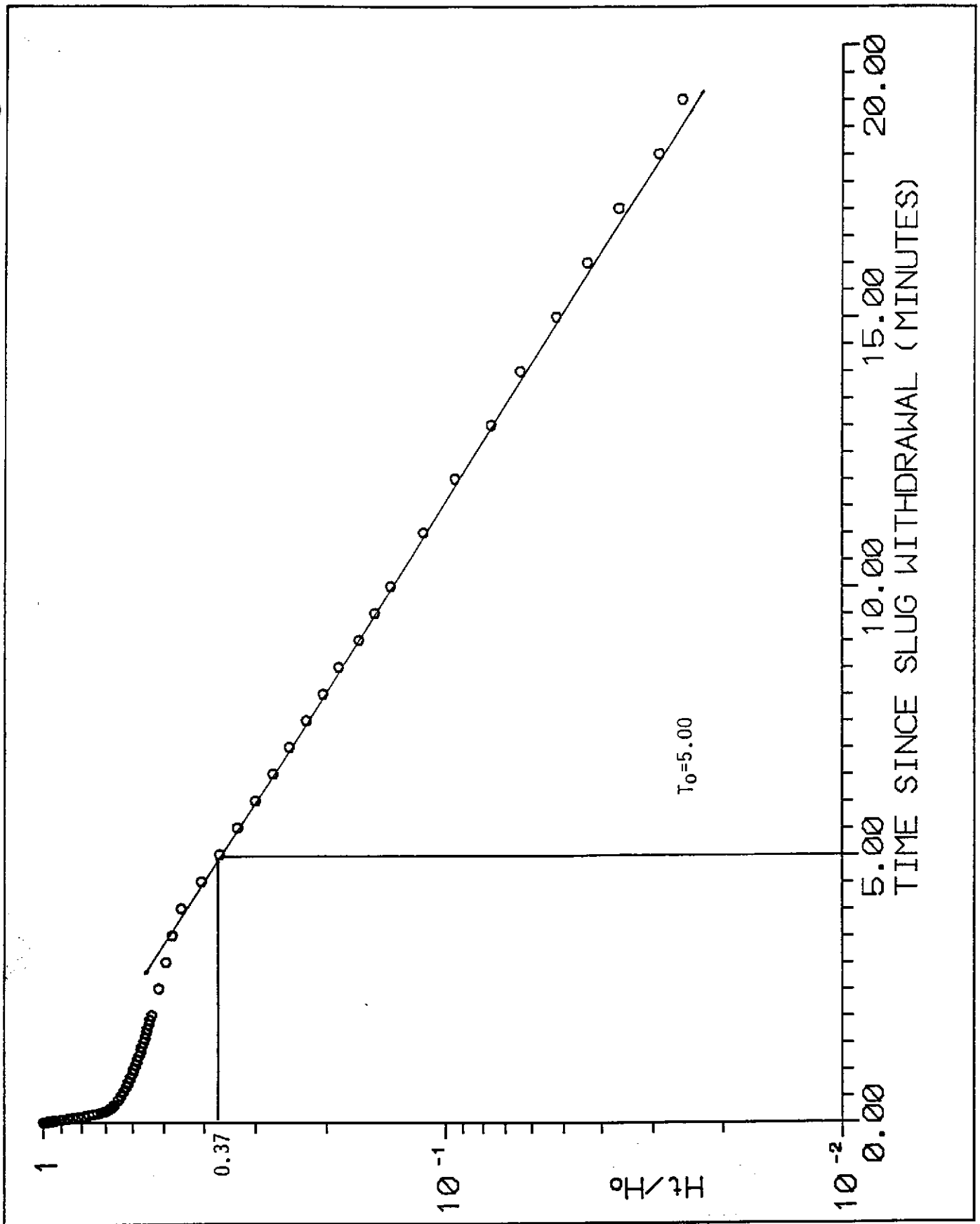
where  $t$  is the value of time on the data graph where  $Tt/r_c^2 = 1$  on the type curve. The hydraulic conductivity,  $K$ , of the stratum tested was estimated from

$$K = \frac{T}{b}$$

where  $b$  is the thickness of the stratum.

#### REFERENCES

- Cooper, H.H., Jr., J.D. Bredehoeft, and I.S. Papadopoulos, 1967. Response of a Finite-Diameter Well to an Instantaneous Charge of Water, Water Resources Research, Vol. 3, No. 1, pp. 263-269.
- Hvorslev, M.J., 1951. Time Lag and Soil Permeability in Ground-Water Observations, U.S. Army Corps of Engineers, Waterways Exp. Sta. Bull. 36, Vicksburg, Miss.



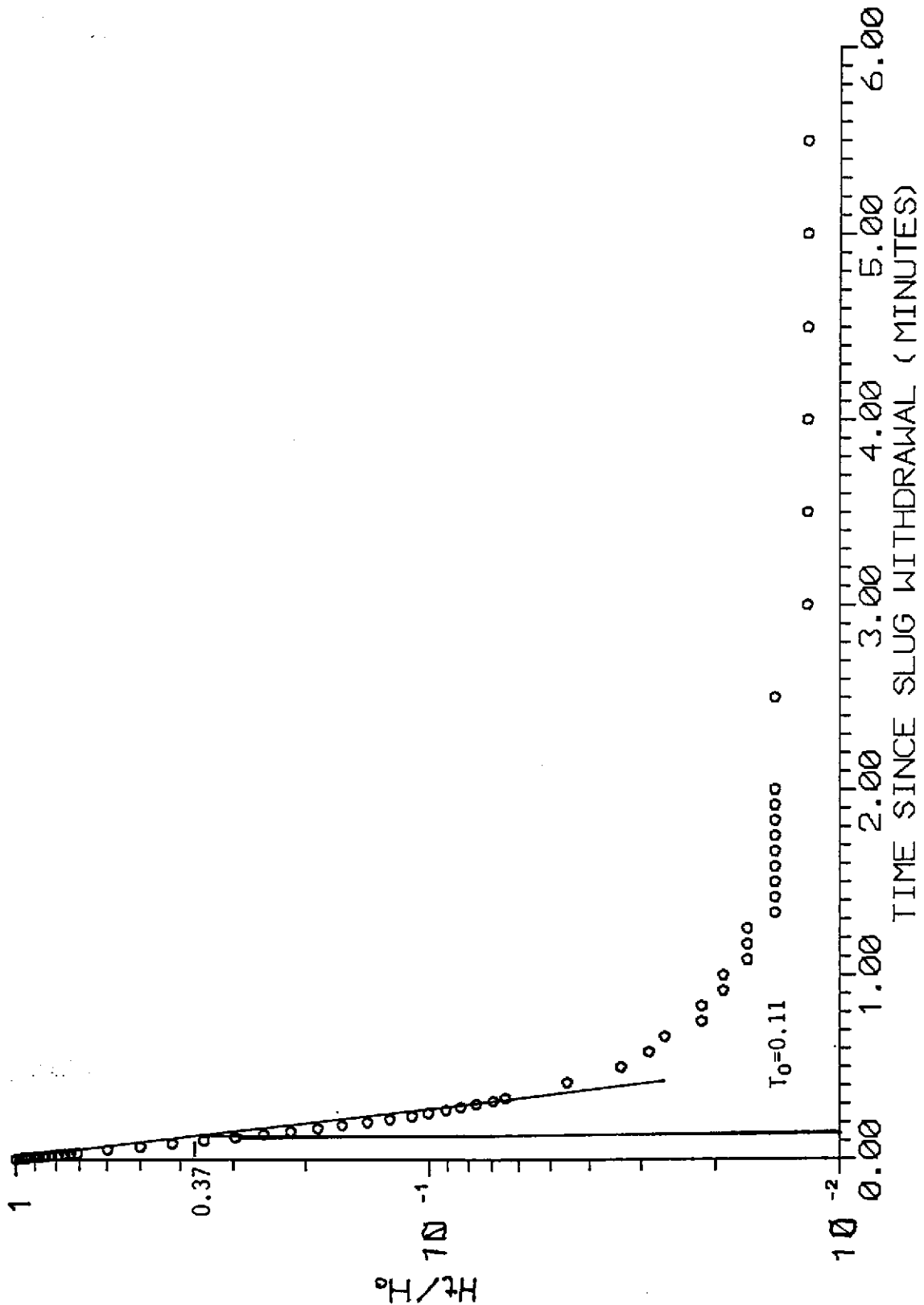
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 Engineering and  
 Environmental Services

**Water Level Recovery MW-1**  
 Transo/LaCoste Site  
 Emeryville, California

PLATE

**D-1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
KH	2421,014.03	TJM	1/90	



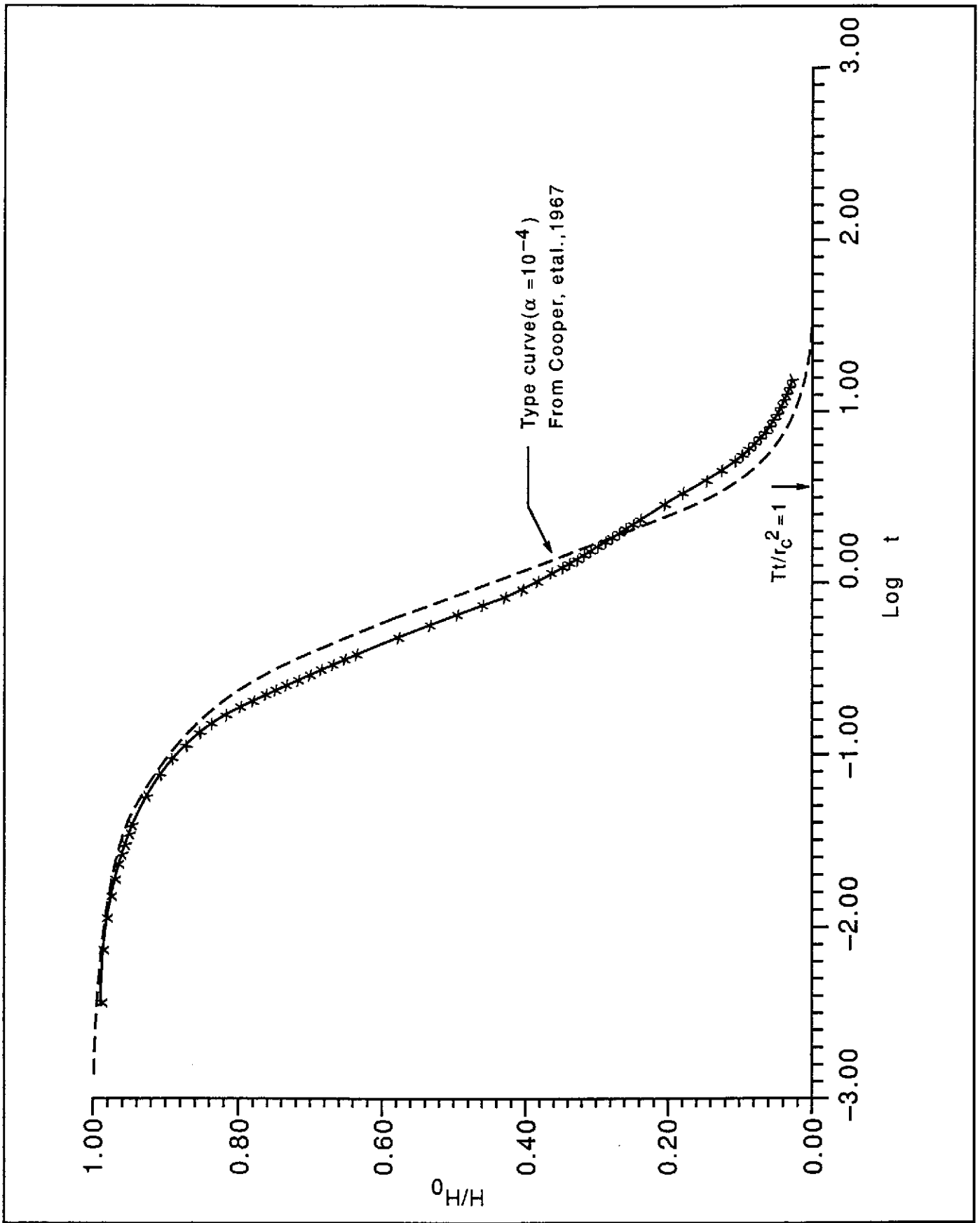
**Harding Lawson Associates**  
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 Environmental Services

**Water Level Recovery MW-2**  
 Transo/LaCoste Site  
 Emeryville, California

PLATE

**D-2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
KH	2421,014.03	TJM	1/90	



**Harding Lawson Associates**  
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 Environmental Services

**Water Level Recovery MW-3**  
 Transo/LaCoste Site  
 Emeryville, California

PLATE

**D-3**

DRAWN  
 S. Patel

JOB NUMBER  
 2421,014.03

APPROVED  
 TJM

DATE  
 10/90

REVISED DATE

LABORATORY REPORTS  
DECEMBER 1989  
SOIL AND GROUNDWATER SAMPLES

JAN 25 1990

**ENVIRONMENTAL & OCCUPATIONAL HEALTH SERVICES**

3440 Vincent Road Pleasant Hill, CA 94523 • (415) 930-9090 • FAX# (415) 930-0256

**LABORATORY ANALYSIS REPORT**

HARDING LAWSON ASSOCIATES  
1355 WILLOW WAY, SUITE 109  
CONCORD, CA 94520

ATTN: TERRY MCMANUS

CLIENT JOB NO: 2421,010.03

REPORT DATE: 01/24/90

DATE SAMPLED: 12/28-29/89

DATE RECEIVED: 12/29/89

DATE EXTRACTED: 01/03-11/90

DATE ANALYZED: 01/05-11/90

MED-TOX JOB NO: 8912148

**ANALYSIS OF: SOIL AND WATER SAMPLES**

Sample Identification	Purgeable Hydrocarbons as Gasoline (mg/kg)	Extractable Hydrocarbons as Diesel (mg/kg)	Extractable Hydrocarbons as Waste Oil (mg/kg)	Purgeable Hydrocarbons as Gasoline (mg/L)	Extractable Hydrocarbons as Diesel (mg/L)	Extractable Hydrocarbons as Waste Oil (mg/L)
Client Id. Lab No.						
MW-1 5.5 01A	1	ND	80	--	--	--
MW-2 5.5 03A	1	ND(80)	280	--	--	--
MW-3 5.0 04A	0.4	ND	640	--	--	--
MW-3 10.5 05A	ND(300)	320	3,600	--	--	--
B-1 55 09A	0.3	ND(80)	640	--	--	--
B-2 55 10A	ND	ND	ND	--	--	--
MW-1 06E/I	--	--	--	0.1	ND	0.9
MW-2 07E/I	--	--	--	0.1	ND	0.7
MW-3 08E/I	--	--	--	ND	ND	5.2
Detection Limit	0.2	10	20	0.1	0.3	0.5
(Unless otherwise indicated in parentheses)						
EPA Method: 8015						
Instrument:	9	1	1	9	1	1

ND = Not Detected

*Cheryl McMillan for M.L.*  
Michael Lynch, Manager  
Organic Laboratory

Results FAXed to Terry McManus 01/12/90 & 01/15/90

HARDING LAWSON ASSOCIATES  
CLIENT JOB NO: 2421,010.03

REPORT DATE: 01/24/90  
DATE EXTRACTED: 01/16/90  
DATE ANALYZED: 01/04-17/90  
MED-TOX JOB NO: 8912148

Sample Identification Client Id.	Lab No.	Ethanol (mg/kg)	Ethanol (mg/L)	Oil & Grease (mg/L)	Total* Coliform (MPN/100mL)
MW-1 5.5	01A	ND	--	--	--
MW-1 10.5	02A	ND	--	--	--
MW-1	06A	--	--	--	84
MW-2	07A	--	--	--	56
MW-3	08A	--	--	--	35
MW-1	06E	--	ND	--	--
MW-2	07E	--	ND	--	--
MW-3	08E	--	ND	--	--
MW-1	06H	--	--	ND	--
MW-2	07J	--	--	12	--
MW-3	08H	--	--	2	--
Detection Limit		1	1	1	2
Method		Direct Inject	Direct Inject	SM503E**	9131
Instrument:		3	3	---	--

ND = Not Detected

\* Subcontracted to a DOHS certified laboratory

\*\* Total petroleum hydrocarbons with gravimetric determination



HARDING LAWSON ASSOCIATES

CLIENT ID: MW1-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-01A  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	390	50
Styrene	100-42-5	ND	5.0
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	420	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW2-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-03A  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acetone	67-64-1	200	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5.0
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	360	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-5.0  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-04A  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acetone	67-64-1	120	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5.0
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	50	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-10.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-05A  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5.0
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	51	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-1 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-09A  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5.0
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	170	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-2 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-10A  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5.0
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	18	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW1-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-01A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acenaphthene	83-32-9	ND	330
Acenaphthylene	208-96-8	ND	330
Anthracene	120-12-7	ND	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	ND	330
Benzo(b)fluoranthene	205-99-2	ND	330
Benzo(k)fluoranthene	207-08-9	ND	330
Benzo(g,h,i)perylene	191-24-2	ND	330
Benzo(a)pyrene	50-32-8	ND	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	39638-32-9	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	ND	330
Dibenzo(a,h)anthracene	53-70-3	ND	330
Dibenzofuran	132-64-9	ND	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW1-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-01A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	560	330
Fluorene	86-73-7	ND	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-nitrosodimethylamine	62-75-9	ND	330
N-nitrosodiphenylamine	86-30-6	ND	330
N-nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	550	330
Pyrene	129-00-0	590	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected



HARDING LAWSON ASSOCIATES

CLIENT ID: MW1-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-01A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270

GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected

## HARDING LAWSON ASSOCIATES

 CLIENT ID: MW2-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

 MED-TOX LAB NO: 8912148-03A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

 EPA METHOD 8270  
 GC/MS EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acenaphthene	83-32-9	440	330
Acenaphthylene	208-96-8	1,600	330
Anthracene	120-12-7	3,100	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	2,900	330
Benzo(b)fluoranthene	205-99-2	1,600	330
Benzo(k)fluoranthene	207-08-9	1,900	330
Benzo(g,h,i)perylene	191-24-2	1,000	330
Benzo(a)pyrene	50-32-8	2,300	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	39638-32-9	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	2,800	330
Dibenzo(a,h)anthracene	53-70-3	400	330
Dibenzofuran	132-64-9	970	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW2-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-03A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	5,900	330
Fluorene	86-73-7	2,500	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	1,000	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-nitrosodimethylamine	62-75-9	ND	330
N-nitrosodiphenylamine	86-30-6	ND	330
N-nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	9,900	330
Pyrene	129-00-0	6,400	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW2-5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-03A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270

GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-5.0  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-04A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acenaphthene	83-32-9	ND	330
Acenaphthylene	208-96-8	ND	330
Anthracene	120-12-7	ND	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	ND	330
Benzo(b)fluoranthene	205-99-2	ND	330
Benzo(k)fluoranthene	207-08-9	ND	330
Benzo(g,h,i)perylene	191-24-2	ND	330
Benzo(a)pyrene	50-32-8	ND	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	39638-32-9	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	ND	330
Dibenzo(a,h)anthracene	53-70-3	ND	330
Dibenzofuran	132-64-9	ND	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-5.0  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-04A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	ND	330
Fluorene	86-73-7	ND	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-nitrosodimethylamine	62-75-9	ND	330
N-nitrosodiphenylamine	86-30-6	ND	330
N-nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	330	330
Pyrene	129-00-0	ND	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-5.0  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-04A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270

GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-10.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-05A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acenaphthene	83-32-9	ND	330
Acenaphthylene	208-96-8	ND	330
Anthracene	120-12-7	ND	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	410	330
Benzo(b)fluoranthene	205-99-2	ND	330
Benzo(k)fluoranthene	207-08-9	540	330
Benzo(g,h,i)perylene	191-24-2	ND	330
Benzo(a)pyrene	50-32-8	ND	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	39638-32-9	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	500	330
Dibenzo(a,h)anthracene	53-70-3	ND	330
Dibenzofuran	132-64-9	ND	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected



HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-10.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-05A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	1,300	330
Fluorene	86-73-7	ND	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-nitrosodimethylamine	62-75-9	ND	330
N-nitrosodiphenylamine	86-30-6	ND	330
N-nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	960	330
Pyrene	129-00-0	1,200	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-10.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/28/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-05A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270

GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-1 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-09A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acenaphthene	83-32-9	ND	330
Acenaphthylene	208-96-8	ND	330
Anthracene	120-12-7	ND	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	ND	330
Benzo(b)fluoranthene	205-99-2	ND	330
Benzo(k)fluoranthene	207-08-9	ND	330
Benzo(g,h,i)perylene	191-24-2	ND	330
Benzo(a)pyrene	50-32-8	ND	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	39638-32-9	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	ND	330
Dibenzo(a,h)anthracene	53-70-3	ND	330
Dibenzofuran	132-64-9	ND	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-1 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-09A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	ND	330
Fluorene	86-73-7	ND	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-nitrosodimethylamine	62-75-9	ND	330
N-nitrosodiphenylamine	86-30-6	ND	330
N-nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	ND	330
Pyrene	129-00-0	ND	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-1 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-09A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270

GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-2 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-10A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
Acenaphthene	83-32-9	ND	330
Acenaphthylene	208-96-8	ND	330
Anthracene	120-12-7	ND	330
Benzidine	92-87-5	ND	1600
Benzoic Acid	65-85-0	ND	1600
Benzo(a)anthracene	56-55-3	ND	330
Benzo(b)fluoranthene	205-99-2	ND	330
Benzo(k)fluoranthene	207-08-9	ND	330
Benzo(g,h,i)perylene	191-24-2	ND	330
Benzo(a)pyrene	50-32-8	ND	330
Benzyl Alcohol	100-51-6	ND	660
Bis(2-chloroethoxy) methane	111-91-1	ND	330
Bis(2-chloroethyl)ether	111-44-4	ND	330
Bis(2-chloroisopropyl) ether	39638-32-9	ND	330
Bis(2-ethylhexyl) phthalate	117-81-7	ND	330
4-Bromophenyl phenyl ether	101-55-3	ND	330
Butylbenzyl phthalate	85-68-7	ND	330
4-Chloroaniline	106-47-8	ND	660
2-Chloronaphthalene	91-58-7	ND	330
4-Chlorophenyl phenyl ether	7005-72-3	ND	330
Chrysene	218-01-9	ND	330
Dibenzo(a,h)anthracene	53-70-3	ND	330
Dibenzofuran	132-64-9	ND	330
Di-n-butylphthalate	84-74-2	ND	330
1,2-Dichlorobenzene	95-50-1	ND	330

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: B-2 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-10A  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/05/90  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
1,3-Dichlorobenzene	541-73-1	ND	330
1,4-Dichlorobenzene	106-46-7	ND	330
3,3'-Dichlorobenzidine	91-94-1	ND	660
Diethylphthalate	84-66-2	ND	330
Dimethylphthalate	131-11-3	ND	330
2,4-Dinitrotoluene	121-14-2	ND	330
2,6-Dinitrotoluene	606-20-2	ND	330
Di-n-octylphthalate	117-84-0	ND	330
1,2-Diphenylhydrazine	122-66-7	ND	330
Fluoranthene	206-44-0	ND	330
Fluorene	86-73-7	ND	330
Hexachlorobenzene	118-74-1	ND	330
Hexachlorobutadiene	87-68-3	ND	330
Hexachlorocyclopentadiene	77-47-4	ND	330
Hexachloroethane	67-72-1	ND	330
Indeno(1,2,3-cd)pyrene	193-39-5	ND	330
Isophorone	78-59-1	ND	330
2-Methylnaphthalene	91-57-6	ND	330
Naphthalene	91-20-3	ND	330
2-Nitroaniline	88-74-4	ND	1600
3-Nitroaniline	99-09-2	ND	1600
4-Nitroaniline	100-01-6	ND	1600
Nitrobenzene	98-95-3	ND	330
N-nitrosodimethylamine	62-75-9	ND	330
N-nitrosodiphenylamine	86-30-6	ND	330
N-nitroso-di-n-propylamine	621-64-7	ND	330
Phenanthrene	85-01-8	ND	330
Pyrene	129-00-0	ND	330
1,2,4-Trichlorobenzene	120-82-1	ND	330

ND = Not Detected

## HARDING LAWSON ASSOCIATES

CLIENT ID: B-2 5.5  
CLIENT JOB NO: 2421,010.03  
DATE SAMPLED: 12/29/89  
DATE RECEIVED: 12/29/89  
REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-10A  
MED-TOX JOB NO: 8912148  
DATE EXTRACTED: 01/05/90  
DATE ANALYZED: 01/08/90  
INSTRUMENT: 11

## EPA METHOD 8270

## GC/MS EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/kg)	DETECTION LIMIT (ug/kg)
4-Chloro-3-methylphenol	59-50-7	ND	330
2-Chlorophenol	95-57-8	ND	330
2,4-Dichlorophenol	120-83-2	ND	330
2,4-Dimethylphenol	105-67-9	ND	330
4,6-Dinitro-2-methylphenol	534-52-1	ND	1600
2,4-Dinitrophenol	51-28-5	ND	1600
2-Methylphenol	95-48-7	ND	330
4-Methylphenol	106-44-5	ND	330
2-Nitrophenol	88-75-5	ND	330
4-Nitrophenol	100-02-7	ND	1600
Pentachlorophenol	87-86-5	ND	1600
Phenol	108-95-2	ND	330
2,4,5-Trichlorophenol	95-95-4	ND	330
2,4,6-Trichlorophenol	88-06-2	ND	330

ND = Not Detected



HARDING LAWSON ASSOCIATES

CLIENT ID: MW-1  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-06C  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	5
4-Methyl-2-pentanone	108-10-1	52	50
Styrene	100-42-5	ND	5
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	ND	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-2  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-07C  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08-09/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	5
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	ND	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-3  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-08C  
 MED-TOX JOB NO: 8912148  
 DATE ANALYZED: 01/08/90  
 INSTRUMENT: 12

EPA METHOD 8240  
 GC/MS VOLATILE ORGANICS

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acetone	67-64-1	ND	100
Benzene	71-43-2	ND	5
Bromodichloromethane	75-27-4	ND	5
Bromoform	75-25-2	ND	5
Bromomethane	74-83-9	ND	10
2-Butanone	78-93-3	ND	100
Carbon Disulfide	75-15-0	ND	10
Carbon Tetrachloride	56-23-5	ND	5
Chlorobenzene	108-90-7	ND	5
Chloroethane	75-00-3	ND	10
2-Chloroethyl Vinyl Ether	110-75-8	ND	10
Chloroform	67-66-3	ND	5
Chloromethane	74-87-3	ND	10
Dibromochloromethane	124-48-1	ND	5
1,1-Dichloroethane	75-34-3	ND	5
1,2-Dichloroethane	107-06-2	ND	5
1,1-Dichloroethene	75-35-4	ND	5
1,2-Dichloroethene, total	540-59-0	ND	5
1,2-Dichloropropane	78-87-5	ND	5
cis-1,3-Dichloropropene	10061-01-5	ND	5
trans-1,3-Dichloropropene	10061-02-6	ND	5
Ethylbenzene	100-41-4	ND	5
2-Hexanone	591-78-6	ND	50
Methylene Chloride	75-09-2	ND	10
4-Methyl-2-pentanone	108-10-1	ND	50
Styrene	100-42-5	ND	5
1,1,2,2-Tetrachloroethane	79-34-5	ND	5
Tetrachloroethene	127-18-4	ND	5
Toluene	108-88-3	ND	5
1,1,1-Trichloroethane	71-55-6	ND	5
1,1,2-Trichloroethane	79-00-5	ND	5
Trichloroethene	79-01-6	ND	5
Vinyl Acetate	108-05-4	ND	50
Vinyl Chloride	75-01-4	ND	10
Xylenes, total	1330-20-7	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-1	MED-TOX LAB NO: 8912148-06G
CLIENT JOB NO: 2421,010.03	MED-TOX JOB NO: 8912148
DATE SAMPLED: 12/29/89	DATE EXTRACTED: 01/04/90
DATE RECEIVED: 12/29/89	DATE ANALYZED: 01/09/90
REPORT DATE: 01/24/90	INSTRUMENT: 11

EPA METHOD 8270  
BASE/NEUTRAL EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acenaphthene	83-32-9	ND	10
Acenaphthylene	208-96-8	ND	10
Anthracene	120-12-7	ND	10
Benzidine	92-87-5	ND	50
Benzoic Acid	65-85-0	ND	50
Benzo(a)anthracene	56-55-3	ND	10
Benzo(b)fluoranthene	205-99-2	ND	10
Benzo(k)fluoranthene	207-08-9	ND	10
Benzo(g,h,i)perylene	191-24-2	ND	10
Benzo(a)pyrene	50-32-8	ND	10
Benzyl Alcohol	100-51-6	ND	20
Bis(2-chloroethoxy) methane	111-91-1	ND	10
Bis(2-chloroethyl)ether	111-44-4	ND	10
Bis(2-chloroisopropyl) ether	39638-32-9	ND	10
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10
4-Bromophenyl phenyl ether	101-55-3	ND	10
Butylbenzyl phthalate	85-68-7	ND	10
4-Chloroaniline	106-47-8	ND	20
2-Chloronaphthalene	91-58-7	ND	10
4-Chlorophenyl phenyl ether	7005-72-3	ND	10
Chrysene	218-01-9	ND	10
Dibenzo(a,h)anthracene	53-70-3	ND	10
Dibenzofuran	132-64-9	ND	10
Di-n-butylphthalate	84-74-2	ND	10
1,2-Dichlorobenzene	95-50-1	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-1  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-06G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04/90  
 DATE ANALYZED: 01/09/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 BASE/NEUTRAL EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
1,3-Dichlorobenzene	541-73-1	ND	10
1,4-Dichlorobenzene	106-46-7	ND	10
3,3'-Dichlorobenzidine	91-94-1	ND	20
Diethylphthalate	84-66-2	ND	10
Dimethylphthalate	131-11-3	ND	10
2,4-Dinitrotoluene	121-14-2	ND	10
2,6-Dinitrotoluene	606-20-2	ND	10
Di-n-octylphthalate	117-84-0	ND	10
1,2-Diphenylhydrazine	122-66-7	ND	10
Fluoranthene	206-44-0	ND	10
Fluorene	86-73-7	ND	10
Hexachlorobenzene	118-74-1	ND	10
Hexachlorobutadiene	87-68-3	ND	10
Hexachlorocyclopentadiene	77-47-4	ND	10
Hexachloroethane	67-72-1	ND	10
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10
Isophorone	78-59-1	ND	10
2-Methylnaphthalene	91-57-6	ND	10
Naphthalene	91-20-3	ND	10
2-Nitroaniline	88-74-4	ND	50
3-Nitroaniline	99-09-2	ND	50
4-Nitroaniline	100-01-6	ND	50
Nitrobenzene	98-95-3	ND	10
N-nitrosodimethylamine	62-75-9	ND	10
N-nitrosodiphenylamine	86-30-6	ND	10
N-nitroso-di-n-propylamine	621-64-7	ND	10
Phenanthrene	85-01-8	ND	10
Pyrene	129-00-0	ND	10
1,2,4-Trichlorobenzene	120-82-1	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-1  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-06G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04/90  
 DATE ANALYZED: 01/09/90  
 INSTRUMENT: 11

EPA METHOD 8270

ACID EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
4-Chloro-3-methylphenol	59-50-7	ND	10
2-Chlorophenol	95-57-8	ND	10
2,4-Dichlorophenol	120-83-2	ND	10
2,4-Dimethylphenol	105-67-9	ND	10
4,6-Dinitro-2-methylphenol	534-52-1	ND	50
2,4-Dinitrophenol	51-28-5	ND	50
2-Methylphenol	95-48-7	ND	10
4-Methylphenol	106-44-5	ND	10
2-Nitrophenol	88-75-5	ND	10
4-Nitrophenol	100-02-7	ND	50
Pentachlorophenol	87-86-5	ND	50
Phenol	108-95-2	ND	10
2,4,5-Trichlorophenol	95-95-4	ND	10
2,4,6-Trichlorophenol	88-06-2	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-2  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-07G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04,11/90  
 DATE ANALYZED: 01/09-12/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 BASE/NEUTRAL EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acenaphthene	83-32-9	ND	10
Acenaphthylene	208-96-8	ND	10
Anthracene	120-12-7	ND	10
Benzidine	92-87-5	ND	50
Benzoic Acid	65-85-0	ND	50
Benzo(a)anthracene	56-55-3	ND	10
Benzo(b)fluoranthene	205-99-2	ND	10
Benzo(k)fluoranthene	207-08-9	ND	10
Benzo(g,h,i)perylene	191-24-2	ND	10
Benzo(a)pyrene	50-32-8	ND	10
Benzyl Alcohol	100-51-6	ND	20
Bis(2-chloroethoxy) methane	111-91-1	ND	10
Bis(2-chloroethyl)ether	111-44-4	ND	10
Bis(2-chloroisopropyl) ether	39638-32-9	ND	10
Bis(2-ethylhexyl) phthalate	117-81-7	ND	10
4-Bromophenyl phenyl ether	101-55-3	ND	10
Butylbenzyl phthalate	85-68-7	ND	10
4-Chloroaniline	106-47-8	ND	20
2-Chloronaphthalene	91-58-7	ND	10
4-Chlorophenyl phenyl ether	7005-72-3	ND	10
Chrysene	218-01-9	ND	10
Dibenzo(a,h)anthracene	53-70-3	ND	10
Dibenzofuran	132-64-9	ND	10
Di-n-butylphthalate	84-74-2	ND	10
1,2-Dichlorobenzene	95-50-1	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-2  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-07G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04,11/90  
 DATE ANALYZED: 01/09-12/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 BASE/NEUTRAL EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
1,3-Dichlorobenzene	541-73-1	ND	10
1,4-Dichlorobenzene	106-46-7	ND	10
3,3'-Dichlorobenzidine	91-94-1	ND	20
Diethylphthalate	84-66-2	ND	10
Dimethylphthalate	131-11-3	ND	10
2,4-Dinitrotoluene	121-14-2	ND	10
2,6-Dinitrotoluene	606-20-2	ND	10
Di-n-octylphthalate	117-84-0	ND	10
1,2-Diphenylhydrazine	122-66-7	ND	10
Fluoranthene	206-44-0	ND	10
Fluorene	86-73-7	ND	10
Hexachlorobenzene	118-74-1	ND	10
Hexachlorobutadiene	87-68-3	ND	10
Hexachlorocyclopentadiene	77-47-4	ND	10
Hexachloroethane	67-72-1	ND	10
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10
Isophorone	78-59-1	ND	10
2-Methylnaphthalene	91-57-6	ND	10
Naphthalene	91-20-3	ND	10
2-Nitroaniline	88-74-4	ND	50
3-Nitroaniline	99-09-2	ND	50
4-Nitroaniline	100-01-6	ND	50
Nitrobenzene	98-95-3	ND	10
N-nitrosodimethylamine	62-75-9	ND	10
N-nitrosodiphenylamine	86-30-6	ND	10
N-nitroso-di-n-propylamine	621-64-7	ND	10
Phenanthrene	85-01-8	ND	10
Pyrene	129-00-0	ND	10
1,2,4-Trichlorobenzene	120-82-1	ND	10

ND = Not Detected



HARDING LAWSON ASSOCIATES

CLIENT ID: MW-2  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-07G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04,11/90  
 DATE ANALYZED: 01/09-12/90  
 INSTRUMENT: 11

EPA METHOD 8270

ACID EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
4-Chloro-3-methylphenol	59-50-7	ND	10
2-Chlorophenol	95-57-8	ND	10
2,4-Dichlorophenol	120-83-2	ND	10
2,4-Dimethylphenol	105-67-9	ND	10
4,6-Dinitro-2-methylphenol	534-52-1	ND	50
2,4-Dinitrophenol	51-28-5	ND	50
2-Methylphenol	95-48-7	ND	10
4-Methylphenol	106-44-5	ND	10
2-Nitrophenol	88-75-5	ND	10
4-Nitrophenol	100-02-7	ND	50
Pentachlorophenol	87-86-5	ND	50
Phenol	108-95-2	ND	10
2,4,5-Trichlorophenol	95-95-4	ND	10
2,4,6-Trichlorophenol	88-06-2	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-3  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-08G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04/90  
 DATE ANALYZED: 01/09/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 BASE/NEUTRAL EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
Acenaphthene	83-32-9	ND	10
Acenaphthylene	208-96-8	ND	10
Anthracene	120-12-7	ND	10
Benzidine	92-87-5	ND	50
Benzoic Acid	65-85-0	ND	50
Benzo(a)anthracene	56-55-3	ND	10
Benzo(b)fluoranthene	205-99-2	ND	10
Benzo(k)fluoranthene	207-08-9	ND	10
Benzo(g,h,i)perylene	191-24-2	ND	10
Benzo(a)pyrene	50-32-8	ND	10
Benzyl Alcohol	100-51-6	ND	20
Bis(2-chloroethoxy) methane	111-91-1	ND	10
Bis(2-chloroethyl)ether	111-44-4	ND	10
Bis(2-chloroisopropyl) ether	39638-32-9	ND	10
Bis(2-ethylhexyl) phthalate	117-81-7	ND	20
4-Bromophenyl phenyl ether	101-55-3	ND	10
Butylbenzyl phthalate	85-68-7	ND	10
4-Chloroaniline	106-47-8	ND	20
2-Chloronaphthalene	91-58-7	ND	10
4-Chlorophenyl phenyl ether	7005-72-3	ND	10
Chrysene	218-01-9	ND	10
Dibenzo(a,h)anthracene	53-70-3	ND	10
Dibenzofuran	132-64-9	ND	10
Di-n-butylphthalate	84-74-2	ND	10
1,2-Dichlorobenzene	95-50-1	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-3  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-08G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04/90  
 DATE ANALYZED: 01/09/90  
 INSTRUMENT: 11

EPA METHOD 8270  
 BASE/NEUTRAL EXTRACTABLES (cont.)

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
1,3-Dichlorobenzene	541-73-1	ND	10
1,4-Dichlorobenzene	106-46-7	ND	10
3,3'-Dichlorobenzidine	91-94-1	ND	20
Diethylphthalate	84-66-2	ND	10
Dimethylphthalate	131-11-3	ND	10
2,4-Dinitrotoluene	121-14-2	ND	10
2,6-Dinitrotoluene	606-20-2	ND	10
Di-n-octylphthalate	117-84-0	ND	10
1,2-Diphenylhydrazine	122-66-7	ND	10
Fluoranthene	206-44-0	ND	10
Fluorene	86-73-7	ND	10
Hexachlorobenzene	118-74-1	ND	10
Hexachlorobutadiene	87-68-3	ND	10
Hexachlorocyclopentadiene	77-47-4	ND	10
Hexachloroethane	67-72-1	ND	10
Indeno(1,2,3-cd)pyrene	193-39-5	ND	10
Isophorone	78-59-1	ND	10
2-Methylnaphthalene	91-57-6	ND	10
Naphthalene	91-20-3	ND	10
2-Nitroaniline	88-74-4	ND	50
3-Nitroaniline	99-09-2	ND	50
4-Nitroaniline	100-01-6	ND	50
Nitrobenzene	98-95-3	ND	10
N-nitrosodimethylamine	62-75-9	ND	10
N-nitrosodiphenylamine	86-30-6	ND	10
N-nitroso-di-n-propylamine	621-64-7	ND	10
Phenanthrene	85-01-8	ND	10
Pyrene	129-00-0	ND	10
1,2,4-Trichlorobenzene	120-82-1	ND	10

ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-3  
 CLIENT JOB NO: 2421,010.03  
 DATE SAMPLED: 12/29/89  
 DATE RECEIVED: 12/29/89  
 REPORT DATE: 01/24/90

MED-TOX LAB NO: 8912148-08G  
 MED-TOX JOB NO: 8912148  
 DATE EXTRACTED: 01/04/90  
 DATE ANALYZED: 01/09/90  
 INSTRUMENT: 11

EPA METHOD 8270

ACID EXTRACTABLES

COMPOUND	CAS #	CONCENTRATION (ug/L)	DETECTION LIMIT (ug/L)
4-Chloro-3-methylphenol	59-50-7	ND	10
2-Chlorophenol	95-57-8	ND	10
2,4-Dichlorophenol	120-83-2	ND	10
2,4-Dimethylphenol	105-67-9	ND	10
4,6-Dinitro-2-methylphenol	534-52-1	ND	50
2,4-Dinitrophenol	51-28-5	ND	50
2-Methylphenol	95-48-7	ND	10
4-Methylphenol	106-44-5	ND	10
2-Nitrophenol	88-75-5	ND	10
4-Nitrophenol	100-02-7	ND	50
Pentachlorophenol	87-86-5	ND	50
Phenol	108-95-2	ND	10
2,4,5-Trichlorophenol	95-95-4	ND	10
2,4,6-Trichlorophenol	88-06-2	ND	10

ND = Not Detected

DATE ANALYZED: 01/09/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 9

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8020/8015 (PURGE & TRAP)**

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	26.9	ND	29.3	25.0	100.9	15.8
Toluene	92.1	1	97.8	89.9	100.8	8.5
TPH as Gasoline	1095	109	1072	1098	89.1	2.6

**CURRENT QC LIMITS**

Analyte	Percent Recovery	RPD
Benzene	(62-134)	23
Toluene	(74-125)	22
TPH as Gasoline	(64-138)	20

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

DATE ANALYZED: 01/10/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 9

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8020/8015 (PURGE & TRAP)**

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
Benzene	25.8	ND	24.7	25.1	96.5	1.6
Toluene	88.8	ND	86.6	86.8	97.6	0.2
TPH as Gasoline	1095	ND	962	965	87.9	0.3

**CURRENT QC LIMITS**

Analyte	Percent Recovery	RPD
Benzene	(62-134)	23
Toluene	(74-125)	22
TPH as Gasoline	(64-138)	21

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

DATE ANALYZED: 01/11/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 9

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8020/8015 (PURGE & TRAP)**

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	27.2	ND	26.4	26.5	97.2	0.4
Toluene	89.5	ND	89.5	88.9	99.7	0.7
TPH as Gasoline	1095	ND	996	1038	92.8	4.2

**CURRENT QC LIMITS**

Analyte	Percent Recovery	RPD
Benzene	(70-136)	17
Toluene	(78-122)	18
TPH as Gasoline	(54-129)	21

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

DATE ANALYZED: 01/05/90  
DATE EXTRACTED: 01/03/90  
INSTRUMENT: 1

MED-TOX JOB NO: 8912148  
CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8015**  
**(WATER MATRIX; EXTRACTION METHOD)**

ANALYTE	Spike Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
TPH as Diesel	6.1	ND	5.4	5.0	85.2	7.7
TPH as Waste Oil	6.2	ND	6.9	6.6	108.9	4.4

**CURRENT QC LIMITS (Revised 11/10/89)**

Analyte	Percent Recovery	RPD
TPH as Diesel	(52-116)	26
TPH as Waste Oil	(56-117)	41

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected



DATE ANALYZED: 01/15/90  
DATE EXTRACTED: 01/15/90  
INSTRUMENT: 1

MED-TOX JOB NO: 8912148  
CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8015**  
**(SOIL MATRIX; EXTRACTION METHOD)**

ANALYTE	Spike Conc. (mg/kg)	Sample Result (mg/kg)	MS Result (mg/kg)	MSD Result (mg/kg)	Average Percent Recovery	RPD
TPH as Diesel	83	ND	69.5	61	78.6	13
TPH as Waste Oil	88	ND	63.4	52.8	65.6	18.2

**CURRENT QC LIMITS (Revised 11/10/89)**

Analyte	Percent Recovery	RPD
TPH as Diesel	(47-126)	18
TPH as Waste Oil	(50-127)	25

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

DATE ANALYZED: 01/05/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 11

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY  
METHOD 8270**

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Phenol	3170	ND	2170	2220	69.2	2.3
2-Chlorophenol	3250	NO	2050	2270	66.5	10.2
1,4-Dichlorobenzene	3150	NO	910	1030	30.8	12.4
N-Nitroso-di-n-propylamine	3290	NO	2140	2310	67.6	7.6
1,2,4-Trichlorobenzene	3520	NO	2050	2240	60.9	8.9
4-Chloro-3-methylphenol	3300	NO	2360	2530	74.1	7.0
Acenaphthene	3240	ND	2010	2150	64.2	6.7
4-Nitrophenol	3820	NO	1740	2140	50.8	20.6
2,4-Dinitrotoluene	3020	ND	1900	2100	66.2	10.0
Pentachlorophenol	3220	ND	1770	1890	56.8	6.6
Pyrene	3370	ND	2320	2170	66.6	6.7

**CURRENT QC LIMITS**

Analyte	Percent Recovery	RPD
Phenol	(26- 90)	35
2-Chlorophenol	(25-102)	50
1,4-Dichlorobenzene	(28-104)	27
N-Nitroso-di-n-propylamine	(41-126)	38
1,2,4-Trichlorobenzene	(38-107)	23
4-Chloro-3-methylphenol	(26-103)	33
Acenaphthene	(31-137)	19
4-Nitrophenol	(11-114)	50
2,4-Dinitrotoluene	(28- 89)	47
Pentachlorophenol	(17-109)	47
Pyrene	(35-142)	36

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

INSTRUMENT: 11

MED-TOX JOB NO: 8912148

CLIENT REF: 2421,010.03

**SURROGATE STANDARD RECOVERY SUMMARY**

**METHOD 8270  
(WATER MATRIX)**

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Client Id.	Lab No.	Nitro-benzene-d <sub>5</sub>	2-Fluoro-biphenyl	Terphenyl-d <sub>14</sub>	Phenol-d <sub>5</sub>	2-Fluoro-phenol	2,4,6-Tribromo-phenol
01/09/90	MW-1	06G	53.3	51.7	58.7	34.4	32.0	32.1
01/09/90	MW-2	07G	2.7	41.0	59.4	87.2	72.8	52.3
01/09/90	MW-3	08G	59.2	52.5	56.5	68.3	65.6	88.7

**CURRENT QC LIMITS**

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
Nitrobenzene-d <sub>5</sub>	(35-114)
2-Fluorobiphenyl	(43-116)
Terphenyl-d <sub>14</sub>	(33-141)
Phenol-d <sub>5</sub>	(10- 94)
2-Fluorophenol	(21-100)
2,4,6-Tribromophenol	(10-123)

INSTRUMENT: 11

MED-TOX JOB NO: 8912148

CLIENT REF: 2421,010.03

**SURROGATE STANDARD RECOVERY SUMMARY**

**METHOD 8270  
(SOIL MATRIX)**

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)					
Date Analyzed	Client Id.	Lab No.	Nitro-benzene-d <sub>5</sub>	2-Fluoro-biphenyl	Terphenyl-d <sub>14</sub>	Phenol-d <sub>5</sub>	2-Fluoro-phenol	2,4,6-Tribromo-phenol
01/08/90	MW-1 5.5	01A	42.3	75.8	17.7	52.1	51.2	45.4
01/08/90	MW-2 5.5	03A	57.2	82.5	88.2	68.8	66.2	74.3
01/08/90	MW-3 5.0	04A	63.5	84.5	84.2	71.1	70.3	75.5
01/08/90	MW-3 10.5	05A	42.4	81.5	81.7	38.7	45.0	44.7
01/08/89	B-1 55	09A	51.1	93.9	92.0	81.4	77.2	46.3
01/08/89	B-2 55	10A	42.2	61.9	70.4	68.2	50.4	58.0

**CURRENT QC LIMITS**

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
Nitrobenzene-d <sub>8</sub>	(22-120)
2-Fluorobiphenyl	(30-115)
Terphenyl-d <sub>14</sub>	(18-137)
Phenol-d <sub>5</sub>	(24-113)
2-Fluorophenol	(25-121)
2,4,6-Tribromophenol	(19-122)

INSTRUMENT: 12

MED-TOX JOB NO: 8912148

CLIENT REF: 2421,101.03

**SURROGATE STANDARD RECOVERY SUMMARY**

**METHOD 8240  
(SOIL MATRIX)**

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab No.	1,2-Dichloroethane-d <sub>4</sub>	Toluene-d <sub>8</sub>	p-Bromofluorobenzene
01/08/90	MW-1 5.5	01A	88.4	111.2	74.3
01/08/90	MW-2 5.5	03A	89.5	115.6	77.9
01/08/90	MW-3 5.0	04A	87.9	110.1	83.3
01/08/90	MW-3 10.5	05A	90.2	113.8	78.5
01/08/90	B-1 55	09A	87.0	107.6	80.8
01/08/90	B-2 55	10A	86.7	98.9	97.2

**CURRENT QC LIMITS**

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
1,2-Dichloroethane-d <sub>4</sub>	(70-122)
Toluene-d <sub>8</sub>	(69-138)
p-Bromofluorobenzene	(55-139)

DATE ANALYZED: 01/08/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 12

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8240**

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
1,1-Dichloroethene	80.0	ND	74.0	75.8	93.6	2.4
Trichloroethene	50.0	ND	46.7	46.8	93.5	0.2
Benzene	50.0	ND	48.6	48.1	96.7	1.0
Toluene	50.0	17.9	61.8	56.4	82.4	9.1
Chlorobenzene	50.0	ND	44.8	44.8	89.6	0.0

**CURRENT QC LIMITS (Revised 11/10/89)**

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(55-128)	15
Trichloroethene	(65-110)	11
Benzene	(77-115)	10
Toluene	(64-122)	14
Chlorobenzene	(74-106)	9

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

INSTRUMENT: 12

MED-TOX JOB NO: 8912148

CLIENT REF: 2421,101.03

**SURROGATE STANDARD RECOVERY SUMMARY**

**METHOD 8240  
(WATER MATRIX)**

SAMPLE IDENTIFICATION			SURROGATE RECOVERY (PERCENT)		
Date Analyzed	Client Id.	Lab No.	1,2-Dichloroethane-d <sub>4</sub>	Toluene-d <sub>8</sub>	p-Bromofluorobenzene
01/09/90	MW-1	06C	86.5	97.9	94.8
01/09/90	MW-2	07C	88.2	97.1	97.1
01/09/90	MW-2	07C	89.2	98.2	99.3
01/09/90	MW-3	08C	86.7	97.1	95.9

**CURRENT QC LIMITS**

<u>ANALYTE</u>	<u>PERCENT RECOVERY</u>
1,2-Dichloroethane-d <sub>4</sub>	(79-119)
Toluene-d <sub>8</sub>	(83-119)
p-Bromofluorobenzene	(85-116)

DATE ANALYZED: 01/09/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 12

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**

**METHOD 8240**

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	80.0	ND	73.7	74.6	92.7	1.2
Trichloroethene	50.0	ND	43.8	45.8	89.6	4.5
Benzene	50.0	ND	47.1	48.0	95.1	1.9
Toluene	50.0	ND	44.6	45.4	90.0	1.8
Chlorobenzene	50.0	ND	42.1	42.1	84.2	0

**CURRENT QC LIMITS (Revised 11/10/89)**

Analyte	Percent Recovery	RPD
1,1-Dichloroethene	(32-148)	10
Trichloroethene	(62-101)	11
Benzene	(79-116)	7
Toluene	(77-114)	9
Chlorobenzene	(69-109)	10

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected



DATE ANALYZED: 01/09/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 12

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**

**METHOD 8240**

ANALYTE	Spike Conc. (ug/L)	Sample Result (ug/L)	MS Result (ug/L)	MSD Result (ug/L)	Average Percent Recovery	RPD
1,1-Dichloroethene	80.0	ND	78.1	75.5	96.0	3.4
Trichloroethene	50.0	ND	45.1	45.3	90.4	0.4
Benzene	50.0	ND	48.2	47.7	95.9	1.0
Toluene	50.0	ND	45.2	45.3	90.5	0.2
Chlorobenzene	50.0	ND	41.9	43.1	85.0	2.8

**CURRENT QC LIMITS (Revised 11/10/89)**

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
1,1-Dichloroethene	(32-148)	10
Trichloroethene	(62-101)	11
Benzene	(79-116)	7
Toluene	(77-114)	9
Chlorobenzene	(69-109)	10

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

DATE ANALYZED: 01/17/90

MED-TOX JOB NO: 8912148

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 9070**

ANALYTE	MS Conc. (mg/L)	MSD Conc. (mg/L)	Sample Result (mg/L)	MS Result (mg/L)	MSD Result (mg/L)	Average Percent Recovery	RPD
Oil & Grease	5.04	5.04	ND	5.11	4.96	99.9	2.9

**CURRENT QC LIMITS**

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Oil & Grease	(78-111)	13

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

DATE ANALYZED: 01/11-12/90

MED-TOX JOB NO: 8912148

INSTRUMENT: 3

CLIENT REF: 2421,010.03

**ETHANOL DIRECT INJECTION  
METHOD**

ETHANOL	Spike Conc. (ug/kg)	Sample Conc. (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
High	392.5	ND	322.4	343.3	84.8	6.3
Low	78.5	ND	69.9	66.6	86.9	4.8

**CURRENT QC LIMITS**

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Ethanol	(80-120)	10

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected

HARDING LAWSON ASSOCIATES

CLIENT ID: MW1-5.5  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-01A  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	9.4	500	0.5	7060	V12
Ba	Barium	160	10,000	5	7080	V22
Be	Beryllium	0.2	75	0.2	7090	V22
Cd	Cadmium	0.2	100	0.2	7130	V22
Cr	Chromium	29	2,500	1	7190	V22
Co	Cobalt	12	8,000	1	7200	V22
Cu	Copper	13	2,500	1	7210	V22
Pb	Lead	19	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	24	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	32	2,400	5	7910	V22
Zn	Zinc	26	5,000	2	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW2-5.5  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-03A  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	31	500	0.5	7060	V12
Ba	Barium	89	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	0.2	100	0.2	7130	V22
Cr	Chromium	22	2,500	1	7190	V22
Co	Cobalt	8	8,000	1	7200	V22
Cu	Copper	44	2,500	1	7210	V22
Pb	Lead	120	1,000	1	7420	V22
Hg	Mercury	0.3	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	16	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	0.9	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	30	2,400	5	7910	V22
Zn	Zinc	90	5,000	2	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-5.0  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-04A  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	7.7	500	0.5	7060	V12
Ba	Barium	210	10,000	5	7080	V22
Be	Beryllium	0.3	75	0.2	7090	V22
Cd	Cadmium	0.8	100	0.2	7130	V22
Cr	Chromium	47	2,500	1	7190	V22
Co	Cobalt	9	8,000	1	7200	V22
Cu	Copper	68	2,500	1	7210	V22
Pb	Lead	220	1,000	1	7420	V22
Hg	Mercury	0.2	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	76	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	39	2,400	5	7910	V22
Zn	Zinc	440	5,000	2	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW3-10.5  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-05A  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	3.0	500	0.5	7060	V12
Ba	Barium	150	10,000	5	7080	V22
Be	Beryllium	ND	75	0.2	7090	V22
Cd	Cadmium	0.7	100	0.2	7130	V22
Cr	Chromium	26	2,500	1	7190	V22
Co	Cobalt	5	8,000	1	7200	V22
Cu	Copper	55	2,500	1	7210	V22
Pb	Lead	83	1,000	1	7420	V22
Hg	Mercury	0.4	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	17	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	39	2,400	5	7910	V22
Zn	Zinc	180	5,000	2	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: B-1 5.5  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-09A  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	3.1	500	0.5	7060	V12
Ba	Barium	200	10,000	5	7080	V22
Be	Beryllium	0.4	75	0.2	7090	V22
Cd	Cadmium	1.5	100	0.2	7130	V22
Cr	Chromium	57	2,500	1	7190	V22
Co	Cobalt	10	8,000	1	7200	V22
Cu	Copper	170	2,500	1	7210	V22
Pb	Lead	210	1,000	1	7420	V22
Hg	Mercury	0.3	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	42	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	51	2,400	5	7910	V22
Zn	Zinc	820	5,000	2	7950	V22

ND = Not Detected

\* INST. = Instrument Number



HARDING LAWSON ASSOCIATES

CLIENT ID: B-2 5.5  
 CLIENT JOB NO: 2421,010.03  
 DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-10A  
 MED-TOX JOB NO: 8912148  
 REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/kg)	TTLIC (mg/kg)	DETECTION LIMIT (mg/kg)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	500	5	7040	V22
As	Arsenic	1.9	500	0.5	7060	V12
Ba	Barium	120	10,000	5	7080	V22
Be	Beryllium	0.4	75	0.2	7090	V22
Cd	Cadmium	0.4	100	0.2	7130	V22
Cr	Chromium	37	2,500	1	7190	V22
Co	Cobalt	16	8,000	1	7200	V22
Cu	Copper	14	2,500	1	7210	V22
Pb	Lead	5	1,000	1	7420	V22
Hg	Mercury	ND	20	0.2	7471	Hg
Mo	Molybdenum	ND	3,500	3	7480	V22
Ni	Nickel	61	2,000	1	7520	V22
Se	Selenium	ND	100	1	7740	V12
Ag	Silver	ND	500	0.3	7760	V22
Tl	Thallium	ND	700	1	7840	V22
V	Vanadium	35	2,400	5	7910	V22
Zn	Zinc	27	5,000	2	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-1  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-06K  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/L)	DETECTION LIMIT (mg/L)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	0.5	7040	V22
As	Arsenic	0.006	0.001	7060	V12
Ba	Barium	0.09	0.05	7080	V22
Be	Beryllium	ND	0.003	7090	V22
Cd	Cadmium	ND	0.003	7130	V22
Cr	Chromium	ND	0.02	7190	V22
Co	Cobalt	ND	0.01	7200	V22
Cu	Copper	ND	0.005	7210	V22
Pb	Lead	ND	0.01	7420	V22
Hg	Mercury	ND	0.0003	7470	Hg
Mo	Molybdenum	ND	0.05	7480	V22
Ni	Nickel	ND	0.01	7520	V22
Se	Selenium	ND	0.03	7740	V12
Ag	Silver	ND	0.01	7760	V22
Tl	Thallium	ND	0.02	7840	V22
V	Vanadium	ND	0.05	7910	V22
Zn	Zinc	0.028	0.003	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-2  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-07K  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/L)	DETECTION LIMIT (mg/L)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	0.5	7040	V22
As	Arsenic	0.008	0.001	7060	V12
Ba	Barium	0.42	0.05	7080	V22
Be	Beryllium	ND	0.003	7090	V22
Cd	Cadmium	ND	0.003	7130	V22
Cr	Chromium	ND	0.02	7190	V22
Co	Cobalt	ND	0.01	7200	V22
Cu	Copper	ND	0.005	7210	V22
Pb	Lead	ND	0.01	7420	V22
Hg	Mercury	ND	0.0003	7470	Hg
Mo	Molybdenum	ND	0.05	7480	V22
Ni	Nickel	ND	0.01	7520	V22
Se	Selenium	0.03	0.03	7740	V12
Ag	Silver	ND	0.01	7760	V22
Tl	Thallium	ND	0.02	7840	V22
V	Vanadium	ND	0.05	7910	V22
Zn	Zinc	0.015	0.003	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-3  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-08K  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

CAM-17 METALS

CODE	METAL	CONCENTRATION (mg/L)	DETECTION LIMIT (mg/L)	METHOD REFERENCE	INST.*
Sb	Antimony	ND	0.5	7040	V22
As	Arsenic	0.004	0.001	7060	V12
Ba	Barium	0.44	0.05	7080	V22
Be	Beryllium	ND	0.003	7090	V22
Cd	Cadmium	ND	0.003	7130	V22
Cr	Chromium	ND	0.02	7190	V22
Co	Cobalt	ND	0.01	7200	V22
Cu	Copper	ND	0.005	7210	V22
Pb	Lead	ND	0.01	7420	V22
Hg	Mercury	ND	0.0003	7470	Hg
Mo	Molybdenum	ND	0.05	7480	V22
Ni	Nickel	0.02	0.01	7520	V22
Se	Selenium	0.04	0.03	7740	V12
Ag	Silver	ND	0.01	7760	V22
Tl	Thallium	ND	0.02	7840	V22
V	Vanadium	ND	0.05	7910	V22
Zn	Zinc	0.078	0.003	7950	V22

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-1  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-06B  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

GENERAL MINERALS

CODE	PARAMETER	CONCENTRATION (mg/L)	DETECTION LIMIT (mg/L)	METHOD REFERENCE	INST.*
	Bicarbonate Alkalinity	570 *	2	403	ISE
	Carbonate Alkalinity	ND *	2	403	ISE
	Hydroxide Alkalinity	ND *	2	403	ISE
Ca	Calcium	86	0.5	7140	V22
Cl	Chloride	71	0.1	300	DIONEX
Cu	Copper	ND	0.005	7210	V22
Fe	Iron	ND	0.1	7380	V22
Mg	Magnesium	48	0.05	7450	V22
Mn	Manganese	0.76	0.005	7460	V22
	pH	7.0 **	NA	9040	ISE
Na	Sodium	180	0.05	7770	V22
	Sulfate	23	0.5	300	DIONEX
	Conductivity	1,200 ***	20	120.1	YSI
	Total Dissolved Solids	730	10	160.1	ME-1
	Hardness	2,800 *	1	314-A	V22
Zn	Zinc	0.028	0.003	7950	V22

\* mg CaCO<sub>3</sub>/L  
\*\* standard units  
\*\*\* umhos/cm

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-2  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-07B  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

GENERAL MINERALS

CODE	PARAMETER	CONCENTRATION (mg/L)	DETECTION LIMIT (mg/L)	METHOD REFERENCE	INST.*
	Bicarbonate Alkalinity	1,100 *	2	403	ISE
	Carbonate Alkalinity	ND *	2	403	ISE
	Hydroxide Alkalinity	ND *	2	403	ISE
Ca	Calcium	170	0.5	7140	V22
Cl	Chloride	340	0.1	300	DIONEX
Cu	Copper	ND	0.005	7210	V22
Fe	Iron	6.5	0.1	7380	V22
Mg	Magnesium	62	0.05	7450	V22
Mn	Manganese	1.6	0.005	7460	V22
	pH	7.6 **	NA	9040	ISE
Na	Sodium	360	0.05	7770	V22
	Sulfate	170	0.5	300	DIONEX
	Conductivity	2,700 ***	20	120.1	YSI
	Total Dissolved Solids	1,700	10	160.1	ME-1
	Hardness	1,100 *	1	314-A	V22
Zn	Zinc	0.015	0.003	7950	V22

\* mg CaCO<sub>3</sub>/L  
\*\* standard units  
\*\*\* umhos/cm

ND = Not Detected

\* INST. = Instrument Number

HARDING LAWSON ASSOCIATES

CLIENT ID: MW-3  
CLIENT JOB NO: 2421,010.03  
DATE RECEIVED: 12/29/89

MED-TOX LAB NO: 8912148-08B  
MED-TOX JOB NO: 8912148  
REPORT DATE: 01/24/90

GENERAL MINERALS

CODE	PARAMETER	CONCENTRATION (mg/L)	DETECTION LIMIT (mg/L)	METHOD REFERENCE	INST.*
	Bicarbonate Alkalinity	1,400 *	2	403	ISE
	Carbonate Alkalinity	ND *	2	403	ISE
	Hydroxide Alkalinity	ND *	2	403	ISE
Ca	Calcium	98	0.5	7140	V22
Cl	Chloride	260	0.1	300	DIONEX
Cu	Copper	ND	0.005	7210	V22
Fe	Iron	0.7	0.1	7380	V22
Mg	Magnesium	79	0.05	7450	V22
Mn	Manganese	2.9	0.005	7460	V22
	pH	6.8 **	NA	9040	ISE
Na	Sodium	460	0.05	7770	V22
	Sulfate	16	0.5	300	DIONEX
	Conductivity	2,800 ***	20	120.1	YSI
	Total Dissolved Solids	1,700	10	160.1	ME-1
	Hardness	620 *	1	314-A	V22
Zn	Zinc	0.078	0.003	7950	V22

\* mg CaCO<sub>3</sub>/L  
\*\* standard units  
\*\*\* umhos/cm

ND = Not Detected

\* INST. = Instrument Number









8912140

**CHAIN OF CUSTODY FORM**

Lab: Med-Tox

Job Number: 2421, 010.03  
 Name/Location: Bay St. Extension  
 Project Manager: TJM

Samplers: DPM, MVB  
 Recorder: D. Meier  
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.					SAMPLE NUMBER OR LAB NUMBER			DATE				
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub> /Li	HCL/NO <sub>2</sub>	HCL/L	Unpres.	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2						m	w	-3	8	9	12	29
23	X						2				m	w	-3				
23	X							2			m	w	-3				
23	X							2			m	w	-3				
23	X				1						m	w	-3				

STATION DESCRIPTION/NOTES
8CD
8E, F
8G, H
8I, J
8K

ANALYSIS REQUESTED										
EPA 601/8010										
EPA 602/8020	X									
EPA 624/8240										
EPA 625/8270		X								
Priority Pflnt. Metals										
Benzene/Toluene/Xylene										
Total Petrol. Hydrocarb. <u>PHS</u>										
<u>+ethanol</u>										
<u>TPH Diesel+Wasteoil</u>										
<u>EPA 3550/8015</u>										
<u>17 Heavy Metals</u>										

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>D. Meier</u>	RECEIVED BY: (Signature) <u>R. St. John</u>	DATE/TIME <u>12/29/23</u>
RELINQUISHED BY: (Signature) <u>R. St. John</u>	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) <u>TJM</u>
METHOD OF SHIPMENT		



**Harding Lawson Associates**  
 1355 Willow Way, Suite 109  
 Costa Mesa, California 94520  
 415/660-6660  
 Telecopy: 415/687-9673

8912148

# CHAIN OF CUSTODY FORM

Lab: MEO TO

Samplers: MIKE BRINK

Job Number: 2421010.03

Name/Location: BAY STREET EXTENSION

Project Manager: TERRY McMANUS Recorder: [Signature]  
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/ NOTES
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Yr	Wk	Seq	Yr	Mo	Dy	Time	
50			X		1			8	1	55	89	12	29	9A	
50			X		1			8	2	55	89	12	29	10A	

ANALYSIS REQUESTED										
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	Priority Pllmt. Metals	Benzene/Toluene/Xylene	Total Petrol. Hydrocarb.	7X 7 HEAVY METALS (EPA 7000 SERIES)	7X TPH-GAS	7X TPH-DIESEL	7X TPH-WASTE OIL (MOD EPA 8015)

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD			
Yr	Wk	Seq					RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	
							[Signature]	[Signature]	12/29 2:30	
							[Signature]	[Signature]		
							[Signature]	[Signature]		
							[Signature]	[Signature]		
							DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
									[Signature]	12-24 16:30
METHOD OF SHIPMENT										

Laboratory Copy White    Project Office Copy Yellow    Field or Office Copy Pink

LABORATORY REPORTS  
MARCH 1990  
SOIL AND GROUNDWATER SAMPLES



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

HARDING ASSOC.

APR 16 1990

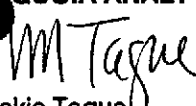
Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville Matrix Descript: Soil Analysis Method: EPA 5030/8015/8020 First Sample #: 003-3015	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
003-3015	B-3 @ 3'	N.D.	N.D.	0.0053	0.012	0.017
003-3016	B-3 @ 6'	N.D.	N.D.	0.042	0.0050	0.016
003-3017	B-3 @ 15'	9.0	0.050	0.39	0.060	0.80
003-3018	B-4 @ 2.5'	N.D.	0.0053	0.040	0.0069	0.052
003-3019	B-4 @ 6'	N.D.	0.0055	0.16	0.012	0.028
003-3020	B-4 @ 11'	1.0	0.0056	0.011	0.0050	0.010
003-3021	MW-4 @ 5.5'	240	N.D.	0.13	0.12	0.093

<b>Detection Limits:</b>	<b>1.0</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>	<b>0.0050</b>
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Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL  
  
 Vickie Tague  
 Project Manager



# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Matrix Descript: Soil  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons mg/kg (ppm)	Benzene mg/kg (ppm)	Toluene mg/kg (ppm)	Ethyl Benzene mg/kg (ppm)	Xylenes mg/kg (ppm)
003-3022	MW-4 @ 10.5'	77	0.011	0.29	0.11	0.13
003-3023	MW-4 @ 15.5'	1.0	0.0058	0.11	0.0094	0.019
003-3024	MW-5 @ 3'	1.0	0.019	0.016	0.0050	N.D.
003-3025	MW-5 @ 5.5'	1.0	0.0081	0.018	N.D.	N.D.
003-3026	MW-5 @ 13'	N.D.	N.D.	0.017	N.D.	N.D.
003-3027	MW-6 @ 3'	N.D.	0.0077	0.013	0.0060	N.D.
003-3028	MW-6 @ 6'	N.D.	N.D.	0.20	N.D.	0.0074
003-3029	MW-6 @ 12'	3.0	N.D.	0.035	N.D.	0.0063

### Detection Limits:

1.0      0.0050      0.0050      0.0050      0.0050

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Matrix Descript: Soil  
Analysis Method: EPA 3550/8015  
First Sample #: 003-3015

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
003-3015	B-3 @ 3'	N.D.
003-3016	B-3 @ 6'	1.8
003-3017	B-3 @ 15'	1,600
003-3018	B-4 @ 2.5'	2.6
003-3019	B-4 @ 6'	7.8
003-3020	B-4 @ 11'	31
003-3021	MW-4 @ 5.5'	140

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

33015.HAO <3>





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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Matrix Descript: Soil  
Analysis Method: EPA 3550/8015  
First Sample #: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
003-3022	MW-4 @ 10.5'	43
003-3023	MW-4 @ 15.5'	1.8
003-3024	MW-5 @ 3'	N.D.
003-3025	MW-5 @ 5.5'	2.6
003-3026	MW-5 @ 13'	N.D.
003-3027	MW-6 @ 3'	N.D.
003-3028	MW-6 @ 6'	35
003-3029	MW-6 @ 12'	30

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tagua  
Project Manager

33015.HAO <4>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Tronso, La Costa, Emeryville  
Sample Descript: Soil  
Analysis for: Lead  
First Sample #: 003-3015

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Apr 2, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
003-3015	B-3 @ 3'	5.0	17
003-3016	B-3 @ 6'	5.0	2,600
003-3017	B-3 @ 15'	5.0	5,700
003-3018	B-4 @ 2.5'	5.0	650
003-3019	B-4 @ 6'	5.0	24
003-3020	B-4 @ 11'	5.0	25
003-3021	MW-4 @ 5.5'	5.0	500

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

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil  
Analysis for: Lead  
First Sample #: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Apr 2, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
003-3022	MW-4 @ 10.5'	5.0	17
003-3023	MW-4 @ 15.5'	5.0	17
003-3024	MW-5 @ 3'	5.0	8.2
003-3025	MW-5 @ 5.5'	5.0	100
003-3026	MW-5 @ 13'	5.0	7.2
003-3027	MW-6 @ 3'	0.25	4.0
003-3028	MW-6 @ 6'	5.0	72
003-3029	MW-6 @ 12'	5.0	260

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus


Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil  
Analysis for: Zinc  
First Sample #: 003-3015

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Apr 2, 1990  
Analyzed: Apr 3, 1990  
Reported: Apr 5, 1990

## LABORATORY ANALYSIS FOR: Zinc

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
003-3015	B-3 @ 3'	0.50	31
003-3016	B-3 @ 6'	0.50	370
003-3017	B-3 @ 15'	0.50	1,900
003-3018	B-4 @ 2.5'	0.50	2,800
003-3019	B-4 @ 6'	0.50	73
003-3020	B-4 @ 11'	0.50	140
003-3021	MW-4 @ 5.5'	0.50	530

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

SEQUOIA ANALYTICAL  
  
Vickie Tague  
Project Manager



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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil  
Analysis for: Zinc  
First Sample #: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Apr 2, 1990  
Analyzed: Apr 3, 1990  
Reported: Apr 5, 1990

## LABORATORY ANALYSIS FOR: Zinc

Sample Number	Sample Description	Detection Limit mg/kg	Sample Result mg/kg
003-3022	MW-4 @ 10.5'	0.50	100
003-3023	MW-4 @ 15.5'	0.50	38
003-3024	MW-5 @ 3'	0.50	35
003-3025	MW-5 @ 5.5'	0.50	190
003-3026	MW-5 @ 13'	0.50	65
003-3027	MW-6 @ 3'	0.50	25
003-3028	MW-6 @ 6'	0.50	92
003-3029	MW-6 @ 12'	0.50	1,000

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Matrix Descript: Soil  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-3015

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Apr 4, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-3015	B-3 @ 3'	8.0
003-3016	B-3 @ 6'	250
003-3017	B-3 @ 15'	120,000
003-3018	B-4 @ 2.5'	1,200
003-3019	B-4 @ 6'	5,000
003-3020	B-4 @ 11'	31
003-3021	MW-4 @ 5.5'	460

Detection Limits:

4.0

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

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

33015.HAO <9>



# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Matrix Descript: Soil  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Apr 4, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-3022	MW-4 @ 10.5'	3,000
003-3023	MW-4 @ 15.5'	200
003-3024	MW-5 @ 3'	22
003-3025	MW-5 @ 5.5'	230
003-3026	MW-5 @ 13'	N.D.
003-3027	MW-6 @ 3'	19
003-3028	MW-6 @ 6'	1,000
003-3029	MW-6 @ 12'	250

Detection Limits:

4.0

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

33015.HAO <10>



# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-3 @ 3'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3015

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager





# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Costa, Emeryville  
Sample Descript: Soil, B-3 @ 6'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3016

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville	Sampled: Mar 21, 1990
1355 Willow Way, Suite 109	Sample Descript: Soil, B-3 @ 15'	Received: Mar 21, 1990
Concord, CA 94520	Analysis Method: EPA 5030/8010	Analyzed: Apr 4, 1990
Attention: Terry McManus	Lab Number: 003-3017	Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	50	N.D.
Bromoform.....	50	N.D.
Bromomethane.....	50	N.D.
Carbon tetrachloride.....	50	N.D.
Chlorobenzene.....	50	N.D.
Chloroethane.....	250	N.D.
2-Chloroethylvinyl ether.....	50	N.D.
Chloroform.....	50	N.D.
Chloromethane.....	50	N.D.
Dibromochloromethane.....	50	N.D.
1,2-Dichlorobenzene.....	100	N.D.
1,3-Dichlorobenzene.....	100	N.D.
1,4-Dichlorobenzene.....	100	N.D.
1,1-Dichloroethane.....	50	N.D.
1,2-Dichloroethane.....	50	N.D.
1,1-Dichloroethene.....	50	N.D.
Total 1,2-Dichloroethene.....	50	N.D.
1,2-Dichloropropane.....	50	N.D.
cis-1,3-Dichloropropene.....	50	N.D.
trans-1,3-Dichloropropene.....	50	N.D.
Methylene chloride.....	100	N.D.
1,1,2,2-Tetrachloroethane.....	50	N.D.
Tetrachloroethene.....	50	N.D.
1,1,1-Trichloroethane.....	50	N.D.
1,1,2-Trichloroethane.....	50	N.D.
Trichloroethene.....	50	N.D.
Trichlorofluoromethane.....	50	N.D.
Vinyl chloride.....	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-4 @ 2.5'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3018

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-4 @ 6'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3019

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville Sample Descript: Soil, B-4 @ 11' Analysis Method: EPA 5030/8010 Lab Number: 003-3020	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Client Project ID: #2421,014.03, Transo, La Costa, Emeryville  
Sample Descript: Soil, MW-4 @ 5.5'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3021

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Attention: Terry McManus

Client Project ID: #2421,014.03, Tranco, La Coste, Emeryville  
Sample Descript: Soil, MW-4 @ 10.5'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethane.....	5.0	N.D.
Total 1,2-Dichloroethane.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-4 @ 15.5'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3023

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 3'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3024

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 5.5'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3025

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 13'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3026

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,1,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Client Project ID: #2421,014.03, Transo, La Costa, Emeryville  
Sample Descript: Soil, MW-6 @ 3'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3027

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Vickie Tague  
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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-6 @ 6'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3028

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,2,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-6 @ 12'  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3029

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Bromodichloromethane.....	5.0	N.D.
Bromoform.....	5.0	N.D.
Bromomethane.....	5.0	N.D.
Carbon tetrachloride.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
Chloroethane.....	25	N.D.
2-Chloroethylvinyl ether.....	5.0	N.D.
Chloroform.....	5.0	N.D.
Chloromethane.....	5.0	N.D.
Dibromochloromethane.....	5.0	N.D.
1,2-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,1-Dichloroethane.....	5.0	N.D.
1,2-Dichloroethane.....	5.0	N.D.
1,1-Dichloroethene.....	5.0	N.D.
Total 1,2-Dichloroethene.....	5.0	N.D.
1,2-Dichloropropane.....	5.0	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	10	N.D.
1,1,1,2-Tetrachloroethane.....	5.0	N.D.
Tetrachloroethene.....	5.0	N.D.
1,1,1-Trichloroethane.....	5.0	N.D.
1,1,2-Trichloroethane.....	5.0	N.D.
Trichloroethene.....	5.0	N.D.
Trichlorofluoromethane.....	5.0	N.D.
Vinyl chloride.....	10	N.D.

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

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APR 16 1990



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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville Sample Descript: Soil, B-3 @ 3' Analysis Method: EPA 5030/8020 Lab Number: A0033015	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
Toluene.....	5.0	N.D.
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville	Sampled: Mar 21, 1990
1355 Willow Way, Suite 109	Sample Descript: Soil, B-3 @ 6'	Received: Mar 21, 1990
Concord, CA 94520	Analysis Method: EPA 5030/8020	Analyzed: Apr 4, 1990
Attention: Terry McManus	Lab Number: 003-3016	Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>39</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates	Client Project ID: #2421,014.03, Tranco, La Coste, Emeryville	Sampled: Mar 21, 1990
1355 Willow Way, Suite 109	Sample Descript: Soil, B-3 @ 15'	Received: Mar 21, 1990
Concord, CA 94520	Analysis Method: EPA 5030/8020	Analyzed: Apr 4, 1990
Attention: Terry McManus	Lab Number: 003-3017	Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	50	N.D.
Chlorobenzene.....	50	N.D.
1,4-Dichlorobenzene.....	100	N.D.
1,3-Dichlorobenzene.....	100	N.D.
1,2-Dichlorobenzene.....	100	N.D.
Ethyl Benzene.....	50	N.D.
<b>Toluene.....</b>	<b>50</b>	<b>290</b>
<b>Xylene.....</b>	<b>50</b>	<b>600</b>

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville Sample Descript: Soil, B-4 @ 2.5' Analysis Method: EPA 5030/8020 Lab Number: 003-3018	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>27</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville	Sampled: Mar 21, 1990
1355 Willow Way, Suite 109	Sample Descript: Soil, B-4 @ 6"	Received: Mar 21, 1990
Concord, CA 94520	Analysis Method: EPA 5030/8020	Analyzed: Apr 4, 1990
Attention: Terry McManus	Lab Number: 003-3019	Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>140</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-4 @ 11'  
Analysis Method: EPA 5030/8020  
Lab Number: 003-3020

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>7.3</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville Sample Descript: Soil, MW-4 @ 5.5' Analysis Method: EPA 5030/8020 Lab Number: 003-3021	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
<b>Ethyl Benzene.....</b>	<b>5.0</b>	<b>65</b>
<b>Toluene.....</b>	<b>5.0</b>	<b>88</b>
<b>Xylene.....</b>	<b>5.0</b>	<b>330</b>

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

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Harding Lawson Associates	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville	Sampled: Mar 21, 1990
1355 Willow Way, Suite 109	Sample Descript: Soil, MW-4 @ 10.5'	Received: Mar 21, 1990
Concord, CA 94520	Analysis Method: EPA 5030/8020	Analyzed: Apr 4, 1990
Attention: Terry McManus	Lab Number: 003-3022	Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
<b>Ethyl Benzene.....</b>	<b>5.0</b>	<b>63</b>
<b>Toluene.....</b>	<b>5.0</b>	<b>210</b>
<b>Xylene.....</b>	<b>5.0</b>	<b>420</b>

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

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-4 @ 15.5'  
Analysis Method: EPA 5030/8020  
Lab Number: 003-3023

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
<b>Benzene</b> .....	<b>5.0</b>	<b>11</b>
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene</b> .....	<b>5.0</b>	<b>77</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Coste, Emeryville Sample Descript: Soil, MW-5 @ 3' Analysis Method: EPA 5030/8020 Lab Number: 003-3024	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	10
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
Toluene.....	5.0	11
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 5.5'  
Analysis Method: EPA 5030/8020  
Lab Number: 003-3025

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit $\mu\text{g}/\text{kg}$	Sample Results $\mu\text{g}/\text{kg}$
Benzene.....	5.0	5.2
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
Toluene.....	5.0	16
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 13'  
Analysis Method: EPA 5030/8020  
Lab Number: 003-3026

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>15</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Tranco, La Coste, Emeryville  
Sample Descript: Soil, MW-6 @ 3'  
Analysis Method: EPA 5030/8020  
Lab Number: 003-3027

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>10</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Costa, Emeryville  
Sample Descript: Soil, MW-6 @ 6'  
Analysis Method: EPA 5030/8020  
Lab Number: 003-3028

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 5, 1990

## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
Ethyl Benzene.....	5.0	N.D.
<b>Toluene.....</b>	<b>5.0</b>	<b>160</b>
Xylene.....	5.0	N.D.

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

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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,014.03, Transo, La Costa, Emeryville Sample Descript: Soil, MW-6 @ 12' Analysis Method: EPA 5030/8020 Lab Number: 003-3029	Sampled: Mar 21, 1990 Received: Mar 21, 1990 Analyzed: Apr 4, 1990 Reported: Apr 5, 1990
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## AROMATIC VOLATILE ORGANICS (EPA 8020)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Benzene.....	5.0	N.D.
Chlorobenzene.....	5.0	N.D.
1,4-Dichlorobenzene.....	10	N.D.
1,3-Dichlorobenzene.....	10	N.D.
1,2-Dichlorobenzene.....	10	N.D.
<b>Ethyl Benzene.....</b>	<b>5.0</b>	<b>6.5</b>
<b>Toluene.....</b>	<b>5.0</b>	<b>25</b>
<b>Xylene.....</b>	<b>5.0</b>	<b>9.1</b>

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

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1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-3 @ 3'  
Analysis Method: EPA 8100  
Lab Number: 003-3015

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Benanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL

*Vickie Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-3 @ 6'  
Analysis Method: EPA 8100  
Lab Number: 003-3016

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Benanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Tronso, La Coste, Emeryville  
Sample Descript: Soil, B-3 @ 15'  
Analysis Method: EPA 8100  
Lab Number: 003-3017

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	500	N.D.
Acenaphthylene.....	500	N.D.
Anthracene.....	1,000	N.D.
Benzo (a) anthracene.....	500	N.D.
Benzo (a) pyrene.....	500	N.D.
Benzo (b) fluoranthene.....	1,000	N.D.
Benzo (ghi) perylene.....	1,000	N.D.
Benzo (k) fluoranthene.....	1,000	N.D.
Chrysene.....	500	N.D.
Dibenzo (a,h) anthracene.....	1,000	N.D.
Fluoranthene.....	500	N.D.
Fluorene.....	500	N.D.
Indeno (1,2,3-cd) pyrene.....	1,000	N.D.
Phthalene.....	500	N.D.
Fluorene.....	500	N.D.
Pyrene.....	500	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Vickie Tague  
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1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, B-4 @ 2.5'  
Analysis Method: EPA 8100  
Lab Number: 003-3018

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	5.0	N.D.
Acenaphthylene.....	5.0	N.D.
Anthracene.....	10	N.D.
Benzo (a) anthracene.....	5.0	N.D.
Benzo (a) pyrene.....	5.0	N.D.
Benzo (b) fluoranthene.....	10	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	10	N.D.
Chrysene.....	5.0	N.D.
Dibenzo (a,h) anthracene.....	10	N.D.
Fluoranthene.....	5.0	N.D.
Fluorene.....	5.0	N.D.
Indeno (1,2,3-cd) pyrene.....	10	N.D.
Naphthalene.....	5.0	N.D.
Benanthrene.....	5.0	N.D.
Pyrene.....	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



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MEMBER ASSOC.

APR 25 1990

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Costa, Emeryville  
Sample Descript: Soil, B-4 @ 6'  
Analysis Method: EPA 8100  
Lab Number: 003-3019

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

Please Note:

Amended Report dated: 4/24/90



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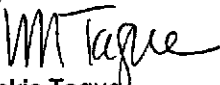
Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, , B-4 @ 11'  
Analysis Method: EPA 8100  
Lab Number: 003-3020

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Triphenylene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL  
  
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Project Manager

Please Note:  
Amended Report dated: 4/24/90



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Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-4 @ 5.5'  
Analysis Method: EPA 8100  
Lab Number: 003-3021

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Naphthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL  
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Vickie Tague  
Project Manager



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Client Project ID: #2421,014.03, Tranzo, La Coste, Emeryville  
Sample Descript: Soil, MW-4 @ 10.5'  
Analysis Method: EPA 8100  
Lab Number: 003-3022

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL  
  
Vickie Tague  
Project Manager

Please Note:  
Amended Report dated: 4/24/90



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Concord, CA 94520  
Attention: Terry McManus

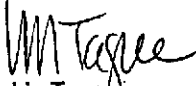
Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-4 @ 15.5'  
Analysis Method: EPA 8100  
Lab Number: 003-3023

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL  
  
Vickie Tague  
Project Manager

Please Note:  
Amended Report dated: 4/24/90



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Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 3'  
Analysis Method: EPA 8100  
Lab Number: 003-3024

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL  
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Vickie Tague  
Project Manager



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Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 5.5'  
Analysis Method: EPA 8100  
Lab Number: 003-3025

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	5.0	N.D.
Acenaphthylene.....	5.0	N.D.
Anthracene.....	10	N.D.
Benzo (a) anthracene.....	5.0	N.D.
Benzo (a) pyrene.....	5.0	N.D.
Benzo (b) fluoranthene.....	10	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	10	N.D.
Chrysene.....	5.0	N.D.
Dibenzo (a,h) anthracene.....	10	N.D.
Fluoranthene.....	5.0	N.D.
Fluorene.....	5.0	N.D.
Indeno (1,2,3-cd) pyrene.....	10	N.D.
Phthalene.....	5.0	N.D.
Phenanthrene.....	5.0	N.D.
Pyrene.....	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL  
*V. Tague*  
Vickie Tague  
Project Manager





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Concord, CA 94520  
Attention: Terry McManus


Client Project ID: #2421,014.03, Tranco, La Coste, Emeryville  
Sample Descript: Soil, MW-5 @ 13'  
Analysis Method: EPA 8100  
Lab Number: 003-3026

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Benanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL  
  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-6 @ 3'  
Analysis Method: EPA 8100  
Lab Number: 003-3027

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Naphthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-6 @ 6'  
Analysis Method: EPA 8100  
Lab Number: 003-3028

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	0.50	N.D.
Acenaphthylene.....	0.50	N.D.
Anthracene.....	1.0	N.D.
Benzo (a) anthracene.....	0.50	N.D.
Benzo (a) pyrene.....	0.50	N.D.
Benzo (b) fluoranthene.....	1.0	N.D.
Benzo (ghi) perylene.....	1.0	N.D.
Benzo (k) fluoranthene.....	1.0	N.D.
Chrysene.....	0.50	N.D.
Dibenzo (a,h) anthracene.....	1.0	N.D.
Fluoranthene.....	0.50	N.D.
Fluorene.....	0.50	N.D.
Indeno (1,2,3-cd) pyrene.....	1.0	N.D.
Phthalene.....	0.50	N.D.
Phenanthrene.....	0.50	N.D.
Pyrene.....	0.50	N.D.

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

**SEQUOIA ANALYTICAL**  
*V. Tague*  
Vickie Tague  
Project Manager

Please Note:  
Amended Report dated: 4/24/90



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,014.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, MW-6 @ 12'  
Analysis Method: EPA 8100  
Lab Number: 003-3029

Sampled: Mar 21, 1990  
Received: Mar 21, 1990  
Extracted: Mar 27, 1990  
Analyzed: Apr 4, 1990  
Reported: Apr 6, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Acenaphthene.....	5.0	N.D.
Acenaphthylene.....	5.0	N.D.
Anthracene.....	10	N.D.
Benzo (a) anthracene.....	5.0	N.D.
Benzo (a) pyrene.....	5.0	N.D.
Benzo (b) fluoranthene.....	10	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	10	N.D.
Chrysene.....	5.0	N.D.
Dibenzo (a,h) anthracene.....	10	N.D.
Fluoranthene.....	5.0	N.D.
Fluorene.....	5.0	N.D.
Indeno (1,2,3-cd) pyrene.....	10	N.D.
Phthalene.....	5.0	N.D.
Benanthrene.....	5.0	N.D.
Pyrene.....	5.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.014.03, Transo, La Coste, Emeryville

QC Sample Group: Q0033015

-29

Reported: Apr 10, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
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Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Dinsay	J. Dinsay	J. Dinsay	J. Dinsay
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Apr 4, 1990	Apr 4, 1990	Apr 4, 1990	Apr 4, 1990
QC Sample #:	003-3221	003-3221	003-3221	003-3221
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.	N.D.
<b>Spike Conc. Added:</b>	0.20	0.20	0.20	0.60
<b>Conc. Matrix Spike:</b>	0.17	0.16	0.16	0.49
<b>Matrix Spike % Recovery:</b>	85	80	80	82
<b>Conc. Matrix Spike Dup.:</b>	0.17	0.17	0.16	0.49
<b>Matrix Spike Duplicate % Recovery:</b>	85	85	80	82
<b>Relative % Difference:</b>	0	6.1	0	0

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

Q0033015.HAO <1>



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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421.014.03, Transo, La Coste, Emeryville	QC Sample Group: 0033015-29	Reported: Apr 10, 1990
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## QUALITY CONTROL DATA REPORT

ANALYTE	High Boiling Point Hydrocarbons	Lead	Lead	Zinc	Total Recoverable Petroleum Hydrocarbons
Method:	EPA 8015	EPA 6010	EPA 7421	EPA 6010	EPA 418.1
Analyst:	K. Mitchell	S. Foster	R. Britton	B. Oliver	M. Fazio
Reporting Units:	mg/kg	mg/L	mg/L	mg/kg	mg/kg
Date Analyzed:	Apr 6, 1990	Apr 4, 1990	Apr 4, 1990	Apr 3, 1990	Apr 4, 1990
QC Sample #:	003-3221	003-3027	003-4324	003-3027	003-3026
Sample Conc.:	N.D.	N.D.	0.042	25	N.D.
Spike Conc. Added:	15	1.0	1.0	1.0	160
Conc. Matrix Spike:	12	1.1	1.0	26	150
Matrix Spike % Recovery:	80	110	96	100	94
Conc. Matrix Spike Dup.:	11	0.95	1.1	26	150
Matrix Spike Duplicate % Recovery:	73	95	110	100	94
Relative % Difference:	8.7	15	9.5	0	0

SEQUOIA ANALYTICAL  
*V. Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.014.03, Transo, La Coste, Emeryville

QC Sample Group: 0033015-29

Reported: Apr 10, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	1,1 Dichloroethene	Trichloroethene	Chloro- benzene
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Method:	EPA 8010, 8020	EPA 8010, 8020	PA 8010, 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha
Reporting Units:	ng	ng	ng
Date Analyzed:	Apr 4, 1990	Apr 4, 1990	Apr 4, 1990
QC Sample #:	003-4370	003-4370	003-4370

Sample Conc.:	N.D.	N.D.	N.D.
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Spike Conc. Added:	25	25	25
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Conc. Matrix Spike:	18	23	22
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Matrix Spike % Recovery:	72	92	88
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Conc. Matrix Spike Dup.:	22	24	21
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Matrix Spike Duplicate % Recovery:	88	96	84
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Relative % Difference:	20	4.3	4.7
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SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Attention: Terry McManus

Client Project ID: #2421.014.03, Transo, La Coste, Emeryville

QC Sample Group: 0033015-29

Reported: Apr 10, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Naphthalene	Fluoranthene	Pyrene	Benzo (a) Pyrene
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Method:	EPA 8100	EPA 8100	EPA 8100	EPA 8100
Analyst:	Lari/Mitchell	Lari/Mitchell	Lari/Mitchell	Lari/Mitchell
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Apr 4, 1990	Apr 4, 1990	Apr 4, 1990	Apr 4, 1990
QC Sample #:	Matrix	Matrix	Matrix	Matrix

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
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Spike Conc. Added:	10	10	10	10
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Conc. Matrix Spike:	8.4	10	10	10
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Matrix Spike % Recovery:	84	100	100	100
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Conc. Matrix Spike Dup.:	7.7	9.6	9.6	9.6
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Matrix Spike Duplicate % Recovery:	77	96	96	96
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Relative % Difference:	8.7	4.1	4.1	4.1
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SEQUOIA ANALYTICAL

*Vickie Taglie*  
Vickie Taglie  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

Q0033015.HAO <4>









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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,010.03, Bay St., Emeryville Matrix Descript: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 003-3630 A	Sampled: Mar 23-24, 1990 Received: Mar 26, 1990 Analyzed: Apr 2, 1990 Reported: Apr 11, 1990
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## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons $\mu\text{g/L}$ (ppb)	Benzene $\mu\text{g/L}$ (ppb)	Toluene $\mu\text{g/L}$ (ppb)	Ethyl Benzene $\mu\text{g/L}$ (ppb)	Xylenes $\mu\text{g/L}$ (ppb)
0033630 A	MW-1	85	N.D.	N.D.	N.D.	0.32
0033631 A	MW-2	50	N.D.	N.D.	N.D.	0.42
0033632 A	MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
0033633 A	MW-4	40	4.0	2.0	N.D.	0.52
0033634 A	MS-5	N.D.	N.D.	N.D.	N.D.	N.D.
0033635 A	MW-6	42	0.41	N.D.	N.D.	1.3

**Detection Limits:**

30

0.30

0.30

0.30

0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL**

*V. Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Matrix Descript: Water  
Analysis Method: EPA 3510/8015  
First Sample #: 003-3630 I

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 30, 1990  
Analyzed: Apr 9, 1990  
Reported: Apr 11, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons $\mu\text{g/L}$ (ppb)
0033630 I	MW-1	220
0033631 I	MW-2	600
0033632 I	MW-3	300
0033633 I	MW-4	340
0033634 I	MW-5	100
0033635 I	MW-6	1,200

Detection Limits:

50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Taguel  
Project Manager

33630.HAO <2>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Matrix Descript: Water  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-3630 F

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Apr 9, 1990  
Analyzed: Apr 9, 1990  
Reported: Apr 11, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/L (ppm)
0033630 F	MW-1	N.D.
0033631 F	MW-2	4.2
0033632 F	MW-3	4.8
0033633 F	MW-4	4.2
0033634 F	MW-5	N.D.
0033635 F	MW-6	12

Detection Limits:

1.0

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

33630.HAO <3>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water  
Analysis for: Lead  
First Sample #: 003-3630 J

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Analyzed: Apr 9, 1990  
Reported: Apr 11, 1990

## LABORATORY ANALYSIS FOR: Lead

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
0033630 J	MW-1	0.0050	N.D.
0033631 J	MW-2	0.0050	N.D.
0033632 J	MW-3	0.0050	N.D.
0033633 J	MW-4	0.0050	N.D.
0033634 J	MW-5	0.0050	N.D.
0033635 J	MW-6	0.0050	0.0066

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water  
Analysis for: Zinc  
First Sample #: 003-3630 J

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Analyzed: Mar 28, 1990  
Reported: Apr 11, 1990

## LABORATORY ANALYSIS FOR: Zinc

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
0033630 J	MW-1	0.010	0.069
0033631 J	MW-2	0.010	0.10
0033632 J	MW-3	0.010	0.25
0033633 J	MW-4	0.010	0.16
0033634 J	MW-5	0.010	0.068
0033635 J	MW-6	0.010	0.15

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

33630.HAO <5>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,010.03, Bay St., Emeryville Sample Descript: Water, MW-1 Analysis Method: EPA 5030/8010 Lab Number: 003-3630 C	Sampled: Mar 23-24, 1990 Received: Mar 26, 1990 Analyzed: Apr 6, 1990 Reported: Apr 11, 1990
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## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	1.0	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	1.0	N.D.
Chlorobenzene.....	1.0	N.D.
Chloroethane.....	5.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	0.50	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1-Dichloroethene.....	1.0	N.D.
Total 1,2-Dichloroethene.....	1.0	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	2.0	N.D.

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

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager





# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
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Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-2  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3631 C

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Analyzed: Apr 6, 1990  
Reported: Apr 11, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	1.0	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	1.0	N.D.
Chlorobenzene.....	1.0	N.D.
Chloroethane.....	5.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	0.50	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1,1-Dichloroethene.....	1.0	N.D.
Total 1,2-Dichloroethene.....	1.0	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,1,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	2.0	N.D.

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

SEQUOIA ANALYTICAL

  
Vickie Tagus  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-3  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3632 C

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Analyzed: Apr 6, 1990  
Reported: Apr 11, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	1.0	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	1.0	N.D.
Chlorobenzene.....	1.0	N.D.
Chloroethane.....	5.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	0.50	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1-Dichloroethene.....	1.0	N.D.
Total 1,2-Dichloroethene.....	1.0	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	2.0	N.D.

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-4  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3633 C

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Analyzed: Apr 6, 1990  
Reported: Apr 11, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	1.0	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	1.0	N.D.
Chlorobenzene.....	1.0	N.D.
Chloroethane.....	5.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	0.50	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1,1-Dichloroethene.....	1.0	N.D.
Total 1,2-Dichloroethene.....	1.0	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	2.0	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,010.03, Bay St., Emeryville Sample Descript: Water, MW-5 Analysis Method: EPA 5030/8010 Lab Number: 003-3634 C	Sampled: Mar 23-24, 1990 Received: Mar 26, 1990 Analyzed: Apr 6, 1990 Reported: Apr 11, 1990
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## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	1.0	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	1.0	N.D.
Chlorobenzene.....	1.0	N.D.
Chloroethane.....	5.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	0.50	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1-Dichloroethene.....	1.0	N.D.
Total 1,2-Dichloroethene.....	1.0	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
<b>Trichloroethane.....</b>	<b>0.50</b>	<b>0.99</b>
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	2.0	N.D.

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

SEQUOIA ANALYTICAL  
  
 Vickie Tague  
 Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-6  
Analysis Method: EPA 5030/8010  
Lab Number: 003-3635 C

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Analyzed: Apr 6, 1990  
Reported: Apr 11, 1990

## HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	1.0	N.D.
Bromoform.....	1.0	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	1.0	N.D.
Chlorobenzene.....	1.0	N.D.
Chloroethane.....	5.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	0.50	N.D.
Dibromochloromethane.....	0.50	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
Dichloroethane.....	0.50	N.D.
Dichloroethane.....	0.50	N.D.
1,1-Dichloroethene.....	1.0	N.D.
Total 1,2-Dichloroethene.....	1.0	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	5.0	N.D.
trans-1,3-Dichloropropene.....	5.0	N.D.
Methylene chloride.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	1.0	N.D.
Vinyl chloride.....	2.0	N.D.

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

SEQUOIA ANALYTICAL

*Vickie Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-1  
Analysis Method: EPA 8100  
Lab Number: 003-3630 K

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 29, 1990  
Analyzed: Mar 30, 1990  
Reported: Apr 11, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	10	N.D.
Acenaphthylene.....	10	N.D.
Anthracene.....	20	N.D.
Benzo (a) anthracene.....	10	N.D.
Benzo (a) pyrene.....	10	N.D.
Benzo (b) fluoranthene.....	20	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	20	N.D.
Chrysene.....	10	N.D.
Dibenzo (a,h) anthracene.....	20	N.D.
Fluoranthene.....	10	N.D.
Fluorene.....	10	N.D.
Indeno (1,2,3-cd) pyrene.....	20	N.D.
Naphthalene.....	10	N.D.
Phenanthrene.....	10	N.D.
Pyrene.....	10	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-2  
Analysis Method: EPA 8100  
Lab Number: 003-3631 K

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 29, 1990  
Analyzed: Mar 30, 1990  
Reported: Apr 11, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	10	N.D.
Acenaphthylene.....	10	N.D.
Anthracene.....	20	N.D.
Benzo (a) anthracene.....	10	N.D.
Benzo (a) pyrene.....	10	N.D.
Benzo (b) fluoranthene.....	20	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	20	N.D.
Chrysene.....	10	N.D.
Dibenzo (a,h) anthracene.....	20	N.D.
Fluoranthene.....	10	N.D.
Fluorene.....	10	N.D.
Indeno (1,2,3-cd) pyrene.....	20	N.D.
Phthalene.....	10	N.D.
Benanthrene.....	10	N.D.
Pyrene.....	10	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-3  
Analysis Method: EPA 8100  
Lab Number: k0033632 K

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 29, 1990  
Analyzed: Mar 30, 1990  
Reported: Apr 11, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	10	N.D.
Acenaphthylene.....	10	N.D.
Anthracene.....	20	N.D.
Benzo (a) anthracene.....	10	N.D.
Benzo (a) pyrene.....	10	N.D.
Benzo (b) fluoranthene.....	20	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	20	N.D.
Chrysene.....	10	N.D.
Dibenzo (a,h) anthracene.....	20	N.D.
Fluoranthene.....	10	N.D.
Fluorene.....	10	N.D.
Indeno (1,2,3-cd) pyrene.....	20	N.D.
1-methylphenanthrene.....	10	N.D.
2-methylphenanthrene.....	10	N.D.
Pyrene.....	10	N.D.

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager





# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-4  
Analysis Method: EPA 8100  
Lab Number: 003-3633 K

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 29, 1990  
Analyzed: Apr 12, 1990  
Reported: Apr 13, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	1,000	N.D.
Acenaphthylene.....	1,000	N.D.
Anthracene.....	2,000	N.D.
Benzo (a) anthracene.....	1,000	N.D.
Benzo (a) pyrene.....	1,000	N.D.
Benzo (b) fluoranthene.....	2,000	N.D.
Benzo (ghi) perylene.....	1,000	N.D.
Benzo (k) fluoranthene.....	2,000	N.D.
Chrysene.....	1,000	N.D.
Dibenzo (a,h) anthracene.....	2,000	N.D.
Fluoranthene.....	1,000	N.D.
Fluorene.....	1,000	N.D.
Indeno (1,2,3-cd) pyrene.....	2,000	N.D.
Naphthalene.....	1,000	N.D.
Benanthrene.....	1,000	N.D.
Pyrene.....	1,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-5  
Analysis Method: EPA 8100  
Lab Number: 003-3634 K

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 29, 1990  
Analyzed: Apr 12, 1990  
Reported: Apr 13, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	10	N.D.
Acenaphthylene.....	10	N.D.
Anthracene.....	20	N.D.
Benzo (a) anthracene.....	10	N.D.
Benzo (a) pyrene.....	10	N.D.
Benzo (b) fluoranthene.....	20	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	20	N.D.
Chrysene.....	10	N.D.
Dibenzo (a,h) anthracene.....	20	N.D.
Fluoranthene.....	10	N.D.
Fluorene.....	10	N.D.
Indeno (1,2,3-cd) pyrene.....	20	N.D.
Maphthalene.....	10	N.D.
Benanthrene.....	10	N.D.
Pyrene.....	10	N.D.

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

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville  
Sample Descript: Water, MW-6  
Analysis Method: EPA 8100  
Lab Number: 003-3635 K

Sampled: Mar 23-24, 1990  
Received: Mar 26, 1990  
Extracted: Mar 29, 1990  
Analyzed: Mar 30, 1990  
Reported: Apr 11, 1990

## POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	10	N.D.
Acenaphthylene.....	10	N.D.
Anthracene.....	20	N.D.
Benzo (a) anthracene.....	10	N.D.
Benzo (a) pyrene.....	10	N.D.
Benzo (b) fluoranthene.....	20	N.D.
Benzo (ghi) perylene.....	10	N.D.
Benzo (k) fluoranthene.....	20	N.D.
Chrysene.....	10	N.D.
Dibenzo (a,h) anthracene.....	20	N.D.
Fluoranthene.....	10	N.D.
Fluorene.....	10	N.D.
Indeno (1,2,3-cd) pyrene.....	20	N.D.
Phthalene.....	10	N.D.
Benanthrene.....	10	N.D.
Pyrene.....	10	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville

QC Sample Group: 0033630-5

Reported: Apr 16, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
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Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	E. Gloria	E. Gloria	E. Gloria	E. Gloria
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Apr 2, 1990	Apr 2, 1990	Apr 2, 1990	Apr 2, 1990
QC Sample #:	003-4062	003-4062	003-4062	003-4062

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
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Spike Conc. Added:	2.0	2.0	2.0	6.0
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Conc. Matrix Spike:	1.9	1.6	1.9	5.5
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Matrix Spike % Recovery:	95	80	95	92
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Conc. Matrix Spike Dup.:	1.7	1.8	1.7	5.1
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Matrix Spike Duplicate % Recovery:	85	90	85	85
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Relative % Difference:	11	12	11	7.5
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SEQUOIA ANALYTICAL

*M Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville

QC Sample Group: 0033630-5

Reported: Apr 16, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	High Boiling Point Hydrocarbons	Total Recoverable Petroleum Hydrocarbons	Lead	Zinc	1,1 Dichloro-ethene	Trichloro-ethene	Chlorobenzene
Method:	EPA 8015	EPA 418.1	EPA 7421	EPA 6010	EPA 8010	EPA 8010	EPA 8010
Analyst:	K. Mitchell	M. Fazio	S. Foster	D. Herrera	E. Manuel	E. Manuel	E. Manuel
Reporting Units:	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
Date Analyzed:	Apr 9, 1990	Apr 9, 1990	Apr 9, 1990	Mar 28, 1990	Apr 6, 1990	Apr 6, 1990	Apr 6, 1990
QC Sample #:	Matrix	003-3630	003-3630	003-3767	003-4627	003-4627	003-4627
Sample Conc.:	N.D.	N.D.	N.D.	0.26	N.D.	N.D.	N.D.
Spike Conc. Added:	300	40	0.050	1.0	2.0	2.0	2.0
Conc. Matrix Spike:	230	40	0.039	1.3	2.2	2.2	1.9
Matrix Spike % Recovery:	77	100	78	100	110	110	95
Conc. Matrix Spike Dup.:	250	42	0.038	1.3	2.2	2.0	2.0
Matrix Spike Duplicate % Recovery:	83	110	76	100	110	100	100
Relative % Difference:	8.3	4.9	2.6	0	0	9.5	5.1

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St., Emeryville

QC Sample Group: 0033630-5

Reported: Apr 16, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Napthalene	Fluoranthene	Pyrene	Benzo (a) pyrene
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Method:	EPA 8100	EPA 8100	EPA 8100	EPA 8100
Analyst:	Lari/Mitchell	Lari/Mitchell	Lari/Mitchell	Lari/Mitchell
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Mar 30, 1990	Mar 30, 1990	Mar 30, 1990	Mar 30, 1990
QC Sample #:	Matrix	Matrix	Matrix	Matrix

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
---------------	------	------	------	------

Spike Conc. Added:	20	20	20	20
--------------------	----	----	----	----

Conc. Matrix Spike:	18	20	20	19
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Matrix Spike % Recovery:	90	100	100	95
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Conc. Matrix Spike Dup.:	18	20	20	18
--------------------------	----	----	----	----

Matrix Spike Duplicate % Recovery:	90	100	100	90
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Relative % Difference:	0	0	0	5.4
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SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$









**Harold Lawson Associates**  
 135 W. Wey, Suite 109  
 Corona, California 94520  
 415/687-9660  
 Telecopy: 415/687-9673

# CHAIN OF CUSTODY FORM

Lab: SEQUOIA ANALYTICAL

Job Number: 2421, 018, 03

Samplers: DAW B. EKES  
DAW HEWNINGER

Name/Location: BAY STREET / EMERYVILLE

Project Manager: TERRY J McMAHONS Recorder: [Signature]  
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2				mw-4			900324			
	X					1									
	X					2									
	X				2				mw-5			900323			
	X				1										
	X				2										
	X					1									
	X					2									
	X					3									

STATION DESCRIPTION/NOTES

2-Week Turnaround

METALS FILTERED IN FIELD

ANALYSIS REQUESTED											
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	TPH AS DIESEL	PNA IS (2100)	TPH	METALS (Zn+Pb)	TPH AS GAS	EPA-601
						X	X	X	X	X	X

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				

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			



**Harding Lawson Associates**  
 135 [redacted] Way, Suite 109  
 Concord, California 94520  
 415/687-9660  
 Telecopy: 415/687-9673

# CHAIN OF CUSTODY FORM

Lab: SEQUOIA ANAL.

Job Number: 2421, 010.03  
 Name/Location: DAY STREET JEMERVILLE  
 Project Manager: TERRY J. McMANUS Recorder: [Signature]  
 (Signature Required)

Samplers: DAW B. ERBES  
DAW HENNINGER

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCl	Yr	Wk	Seq	Yr	Mo	Dy	Time
23	X				2				mu-6			9	0	3	23
6	X				1	2									
4	X					1									
	X						2								

STATION DESCRIPTION/NOTES

2-week  
 SEATED  
 TURN AROUND  
 FILTERED IN FIELD

ANALYSIS REQUESTED											
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH	TPH AS DIESEL	PAH'S (8100)	TRPH	METALS (Zn, Pb)	BTEX / TPH AS GAS	EPA - 601
						X	X	X	X	X	X

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq.				

CHAIN OF CUSTODY RECORD			
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	
[Signature]	[Signature]	3/26/90	10:00
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			

LABORATORY REPORTS  
DEMOLITION MONITORING  
SOIL SAMPLES



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Tranzo, La Coste, Emeryville  
Sample Descript: Soil, ES-1A  
Analysis Method: EPA 8240  
Lab Number: 003-1891

Sampled: Mar 13, 1990  
Received: Mar 14, 1990  
Analyzed: Mar 22, 1990  
Reported: Mar 28, 1990

## VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone.....	500	N.D.
Benzene.....	100	N.D.
Bromodichloromethane.....	100	N.D.
Bromoform.....	100	N.D.
Bromomethane.....	100	N.D.
2-Butanone.....	500	N.D.
Carbon disulfide.....	100	N.D.
Carbon tetrachloride.....	100	N.D.
Chlorobenzene.....	100	N.D.
Chlorodibromomethane.....	100	N.D.
Chloroethane.....	100	N.D.
2-Chloroethyl vinyl ether.....	500	N.D.
Chloroform.....	100	N.D.
Chloromethane.....	100	N.D.
1,1-Dichloroethane.....	100	N.D.
1,2-Dichloroethane.....	100	N.D.
1,1-Dichloroethene.....	100	N.D.
Total 1,2-Dichloroethene.....	100	N.D.
1,2-Dichloropropane.....	100	N.D.
cis 1,3-Dichloropropene.....	100	N.D.
trans 1,3-Dichloropropene.....	100	N.D.
Ethylbenzene.....	100	N.D.
2-Hexanone.....	500	N.D.
Methylene chloride.....	100	N.D.
4-Methyl-2-pentanone.....	500	N.D.
Styrene.....	100	N.D.
1,1,2,2-Tetrachloroethane.....	100	N.D.
Tetrachloroethene.....	100	N.D.
<b>Toluene.....</b>	<b>100</b>	<b>160</b>
1,1,1-Trichloroethane.....	100	N.D.
1,1,2-Trichloroethane.....	100	N.D.
Trichloroethene.....	100	N.D.
Trichlorofluoromethane.....	100	N.D.
Vinyl acetate.....	100	N.D.
Vinyl chloride.....	100	N.D.
Total Xylenes.....	100	N.D.

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville  
Method (units): EPA 8240 (µg/L purged)  
Analyst(s): A. Miraftab  
QC Sample #: 003-2587

Q.C. Sample Dates

Analyzed: Mar 19, 1990  
Reported: Mar 28, 1990

## QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike % Recovery	Relative % Difference
1,1-Dichloroethene	N.D.	50	53	110	53	110	0
Trichloroethene	N.D.	50	52	100	48	96	8.0
Benzene	N.D.	50	50	100	46	92	8.3
Toluene	N.D.	50	50	100	47	94	6.2
Chlorobenzene	N.D.	50	54	110	51	100	5.7

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Ordering Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, ES-1A  
Analysis Method: EPA 8270  
Lab Number: 003-1891

Sampled: Mar 13, 1990  
Received: Mar 14, 1990  
Extracted: Mar 19, 1990  
Analyzed: Mar 22, 1990  
Reported: Mar 28, 1990

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene.....	500	N.D.
Acenaphthylene.....	500	N.D.
Aniline.....	500	N.D.
Anthracene.....	500	N.D.
Benzidine.....	12,500	N.D.
Benzoic Acid.....	2,500	N.D.
Benzo(a)anthracene.....	500	N.D.
Benzo(b)fluoranthene.....	500	N.D.
Benzo(k)fluoranthene.....	500	N.D.
Benzo(g,h,i)perylene.....	500	N.D.
Benzo(a)pyrene.....	500	N.D.
Benzyl alcohol.....	500	N.D.
Bis(2-chloroethoxy)methane.....	500	N.D.
Bis(2-chloroethyl)ether.....	500	N.D.
Bis(2-chloroisopropyl)ether.....	500	N.D.
Bis(2-ethylhexyl)phthalate.....	2,500	N.D.
4-Bromophenyl phenyl ether.....	500	N.D.
Butyl benzyl phthalate.....	500	N.D.
4-Chloroaniline.....	500	N.D.
2-Chloronaphthalene.....	500	N.D.
4-Chloro-3-methylphenol.....	500	N.D.
2-Chlorophenol.....	500	N.D.
4-Chlorophenyl phenyl ether.....	500	N.D.
Chrysene.....	500	N.D.
Dibenz(a,h)anthracene.....	500	N.D.
Dibenzofuran.....	500	N.D.
Di-N-butyl phthalate.....	2,500	N.D.
1,3-Dichlorobenzene.....	500	N.D.
1,4-Dichlorobenzene.....	500	N.D.
1,2-Dichlorobenzene.....	500	N.D.
3,3-Dichlorobenzidine.....	2,500	N.D.
2,4-Dichlorophenol.....	500	N.D.
Diethyl phthalate.....	500	N.D.
2,4-Dimethylphenol.....	500	N.D.
Dimethyl phthalate.....	500	N.D.
4,6-Dinitro-2-methylphenol.....	2,500	N.D.
2,4-Dinitrophenol.....	2,500	N.D.



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Binding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, ES-1A  
Analysis Method: EPA 8270  
Lab Number: 003-1891

Sampled: Mar 13, 1990  
Received: Mar 14, 1990  
Extracted: Mar 19, 1990  
Analyzed: Mar 22, 1990  
Reported: Mar 28, 1990

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene.....	500	N.D.
2,6-Dinitrotoluene.....	500	N.D.
Di-N-octyl phthalate.....	500	N.D.
Fluoranthene.....	500	N.D.
Fluorene.....	500	N.D.
Hexachlorobenzene.....	500	N.D.
Hexachlorobutadiene.....	500	N.D.
Hexachlorocyclopentadiene.....	500	N.D.
Hexachloroethane.....	500	N.D.
Indeno(1,2,3-cd)pyrene.....	500	N.D.
Isophorone.....	500	N.D.
2-Methylnaphthalene.....	500	N.D.
2-Methylphenol.....	500	N.D.
4-Methylphenol.....	500	N.D.
Naphthalene.....	500	N.D.
Nitroaniline.....	2,500	N.D.
3-Nitroaniline.....	2,500	N.D.
4-Nitroaniline.....	2,500	N.D.
Nitrobenzene.....	500	N.D.
2-Nitrophenol.....	500	N.D.
4-Nitrophenol.....	2,500	N.D.
N-Nitrosodiphenylamine.....	500	N.D.
N-Nitroso-di-N-propylamine.....	500	N.D.
Pentachlorophenol.....	2,500	N.D.
Phenathrene.....	500	N.D.
Phenol.....	500	N.D.
Pyrene.....	500	N.D.
1,2,4-Trichlorobenzene.....	500	N.D.
2,4,5-Trichlorophenol.....	2,500	N.D.
2,4,6-Trichlorophenol.....	500	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL

  
Vickie Taguel  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville  
Method (units): EPA 8270 (µg)  
Analyst(s): T. Fowler  
QC Sample #: 003-2425

Q.C. Sample Dates  
Extracted: Mar 19, 1990  
Analyzed: Mar 22, 1990  
Reported: Mar 28, 1990

## QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike % Recovery	Relative % Difference
Phenol	N.D.	100	52	52	59	59	13
2-Chlorophenol	N.D.	100	57	57	65	65	13
1,4-Dichloro-benzene	N.D.	50	26	52	30	60	14
N-Nitroso-Di-N-propylamine	N.D.	50	26	52	29	29	11
1,2,4-Trichloro-benzene	N.D.	50	27	54	32	64	17
4-Chloro-3-Methylphenol	N.D.	100	62	62	70	70	12
Acenaphthene	N.D.	50	30	60	33	66	9.5
4-Nitrophenol	N.D.	100	48	48	48	48	0
2,4-Dinitro-toluene	N.D.	50	24	48	28	56	15
Pentachloro-phenol	N.D.	100	50	50	54	54	3.8
Pyrene	N.D.	50	33	66	38	76	14

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$





# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville  
Sample Descript: Soil, ES-1A  
Lab Number: 003-1891

Sampled: Mar 13, 1990  
Received: Mar 14, 1990  
Extracted: Mar 19, 1990  
Reported: Mar 28, 1990

## INORGANIC PERSISTENT AND BIOACCUMULATIVE TOXIC SUBSTANCES

Soluble Threshold Limit Concentration  
Waste Extraction Test

Total Threshold Limit Concentration

Analyte	STLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)	TTL Max. Limit (mg/kg)	Detection Limit (mg/kg)	Analysis Result (mg/kg)
Antimony	15	0.050	-	500	1.0	N.D.
Arsenic	5	0.010	-	500	0.10	26
Barium	100	0.10	-	10,000	0.20	150
Beryllium	0.75	0.010	-	75	0.10	N.D.
Cadmium	1	0.010	-	100	0.10	N.D.
Chromium (VI)	5	0.0050	-	500	0.050	N.D.
Chromium (III)	560	0.0050	-	2,500	0.050	38
Cobalt	80	0.050	-	8,000	0.50	14
Copper	25	0.010	-	2,500	0.10	37
Lead	5	0.0050	-	1,000	0.050	72
Mercury	0.2	0.00020	-	20	0.10	0.20
Molybdenum	350	0.050	-	3,500	0.50	N.D.
Nickel	20	0.050	-	2,000	0.50	21
Selenium	1	0.010	-	100	0.10	N.D.
Silver	5	0.010	-	500	0.10	N.D.
Thallium	7	0.50	-	700	5.0	N.D.
Vanadium	24	0.050	-	2,400	0.50	32
Zinc	250	0.010	-	5,000	0.10	180

TTL results are reported as mg/kg of wet weight. Asbestos results are reported as fibers/g.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Vickie Tagua  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville

QC Sample Group: 003-1891

Reported: Mar 28, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper
Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Analyst:	B. Oliver	B. Oliver	B. Oliver	B. Oliver	B. Oliver	B. Oliver
Reporting Units:	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Date Analyzed:	Mar 21, 1990	Mar 21, 1990	Mar 21, 1990	Mar 21, 1990	Mar 21, 1990	Mar 21, 1990
QC Sample #:	003-2931	003-2931	003-2931	003-2931	003-2931	003-2931
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	1.0	1.0	1.0	1.0	1.0	1.0
Conc. Matrix Spike:	0.97	0.98	1.0	0.95	0.97	0.93
Matrix Spike % Recovery:	97	98	100	95	97	93
Conc. Matrix Spike Dup.:	0.97	0.91	0.94	0.91	0.91	0.89
Matrix Spike Duplicate % Recovery:	97	91	94	91	91	89
Relative % Difference:	0	7.4	6.2	4.3	6.4	4.4

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# SEQUOIA ANALYTICAL

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Harding Lawson Associates	Client Project ID: #2421,013.03, Transo, La Coste, Emeryville	Sampled: Mar 13, 1990
1355 Willow Way, Suite 109	Sample Descript.: Soil, ES-1A	Received: Mar 14, 1990
Concord, CA 94520	Analysis Method: EPA 5030/8015/8020	Analyzed: Mar 20, 1990
Attention: Terry McManus	Lab Number: 003-1891	Reported: Mar 28, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS WITH BTEX DISTINCTION (EPA 8015/8020)

Analyte	Detection Limit mg/kg (ppm)	Sample Results mg/kg (ppm)
Low to Medium Boiling Point Hydrocarbons.....	1.0	N.D.
Benzene.....	0.0050	N.D.
<b>Toluene.....</b>	<b>0.0050</b>	<b>0.16</b>
Ethyl Benzene.....	0.0050	N.D.
Xylenes.....	0.0050	N.D.

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville

QC Sample Group: 003-1891

Reported: Mar 28, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
---------	---------	---------	---------------	---------

Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Dinsay	J. Dinsay	J. Dinsay	J. Dinsay
Reporting Units:	mg/kg	mg/kg	mg/kg	mg/kg
Date Analyzed:	Mar 20, 1990	Mar 20, 1990	Mar 20, 1990	Mar 20, 1990
QC Sample #:	003-0714	003-0714	003-0714	003-0714

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	2.0	2.0	2.0	6.0
Conc. Matrix Spike:	1.5	1.5	1.7	4.7
Matrix Spike % Recovery:	75	75	85	78
Conc. Matrix Spike Dup.:	1.6	1.6	1.8	5.0
Matrix Spike Duplicate % Recovery:	80	80	90	83
Relative % Difference:	6.5	6.5	5.7	6.2

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Guarding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville  
Matrix Descript: Soil  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-1891

Sampled: Mar 13, 1990  
Received: Mar 14, 1990  
Extracted: Mar 21, 1990  
Analyzed: Mar 21, 1990  
Reported: Mar 28, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-1891	ES-1A	2,300

Detection Limits:

2.0

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

31891.HAO <10>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo, La Coste, Emeryville

QC Sample Group: 003-1891

Reported: Mar 28, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Total Recoverable Petroleum Hydrocarbons	Hexavalent Chromium	Mercury
---------	--	------------------------	---------

Method:	EPA 418.1	EPA 7196	EPA 7470
Analyst:	M. Fazio	N. Zahedi	N. Zahedi
Reporting Units:	mg/kg	mg/kg	mg/L
Date Analyzed:	Mar 21, 1990	Mar 14, 1990	Mar 21, 1990
QC Sample #:	003-0706	003-0705	003-0878

Sample Conc.: N.D. N.D. N.D.

Spike Conc. Added: 80 5.0 2.0

Conc. Matrix Spike: 79 5.0 2.2

Matrix Spike % Recovery: 99 100 110

Conc. Matrix Spike Dup.: 77 5.1 2.0

Matrix Spike Duplicate % Recovery: 96 100 100

Relative % Difference: 2.6 2.0 9.5

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

31891.HAO <11>



Harding Lawson Associates  
 Willow Way, Suite 109  
 Concord, California 94520  
 415/687-9660  
 Telecopy: 415/687-9673

# CHAIN OF CUSTODY STUDY FORM

Lab: Sequoia

Job Number: 2421 013 03  
 Name/Location: Travis/La Costa - Emeryville  
 Project Manager: Terry McMAHUS

Samplers: Dan Henninger  
 Recorder: Terence J. McMahus  
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE			
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	SS Tube	Yr	Wk	Seq	Yr	Mo	Dy	Time
49		X					X				ES-1A	90	03	13	

STATION DESCRIPTION/NOTES  
1-week Turnaround  
4-5 feet below grade  
beneath "East Sump"

ANALYSIS REQUESTED												
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP-METALS	EPA 8015M/TPH	17+ CAM METALS	TPH Low/High (P015)	Oil + Grease (418.1)				
		X	X			X	X	X				

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>Terence J. McMahus</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	DATE/TIME <u>3/14/00 12:00</u>
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)
METHOD OF SHIPMENT		



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Carding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Matrix Descript: Soil  
Analysis Method: EPA 3550/8015  
First Sample #: 003-1486

Sampled: Mar 9, 1990  
Received: Mar 9, 1990  
Extracted: Mar 13, 1990  
Analyzed: Mar 14, 1990  
Reported: Mar 19, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
003-1486	S-2	190

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager

31486.HAO <1>





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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste

QC Sample Group: 003-1486

Reported: Mar 19, 1990

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	High Boiling Point Hydrocarbons
----------------	------------------------------------

Method: EPA 8015  
 Analyst: K. Mitchell  
 Reporting Units: mg/kg  
 Date Analyzed: Mar 14, 1990  
 QC Sample #: Matrix

Sample Conc.: N.D.

Spike Conc.  
Added: 15

Conc. Matrix  
Spike: 12

Matrix Spike  
% Recovery: 80

Conc. Matrix  
Spike Dup.: 10

Matrix Spike  
Duplicate  
% Recovery: 67

Relative  
% Difference: 18

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 Vickie Tague  
 Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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ding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Matrix Descript: Soil  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-1486

Sampled: Mar 9, 1990  
Received: Mar 9, 1990  
Extracted: Mar 14, 1990  
Analyzed: Mar 14, 1990  
Reported: Mar 19, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-1486	S-2	1,600

Detection Limits:

2.0

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

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31486.HAO <3>



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Client Project ID: #2421.013.03, Transo/La Coste

QC Sample Group: 003-1486

Reported: Mar 19, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Total Recoverable
	Petroleum Hydrocarbons

Method: EPA 418.1  
 Analyst: M. Fazio  
 Reporting Units: mg/kg  
 Date Analyzed: Mar 14, 1990  
 QC Sample #: 002-3855

Sample Conc.: N.D.

Spike Conc.  
Added: 80

Conc. Matrix  
Spike: 78

Matrix Spike  
% Recovery: 98

Conc. Matrix  
Spike Dup.: 75

Matrix Spike  
Duplicate  
% Recovery: 94

Relative  
% Difference: 3.9

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Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Lab Number: 003-1486

Sampled: Mar 9, 1990  
Received: Mar 9, 1990  
Extracted: Mar 12, 1990  
Reported: Mar 19, 1990

## INORGANIC PERSISTENT AND BIOACCUMULATIVE TOXIC SUBSTANCES

### Soluble Threshold Limit Concentration Waste Extraction Test

### Total Threshold Limit Concentration

Analyte	STLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)	TTL Max. Limit (mg/kg)	Detection Limit (mg/kg)	Analysis Result (mg/kg)
Antimony	15	0.050	-	500	1.0	N.D.
Arsenic	5	0.010	-	500	0.25	9.7
Barium	100	0.10	-	10,000	0.20	300
Beryllium	0.75	0.010	-	75	0.10	N.D.
Cadmium	1	0.010	-	100	0.10	N.D.
Chromium (VI)	5	0.0050	-	500	0.050	N.D.
Chromium (III)	560	0.0050	-	2,500	0.050	13
Cobalt	80	0.050	-	8,000	0.50	N.D.
Copper	25	0.010	-	2,500	0.10	36
Lead	5	0.0050	-	1,000	0.050	110
Mercury	0.2	0.00020	-	20	0.10	0.83
Molybdenum	350	0.050	-	3,500	0.50	N.D.
Nickel	20	0.050	-	2,000	0.50	N.D.
Selenium	1	0.010	-	100	0.25	N.D.
Silver	5	0.010	-	500	0.10	N.D.
Thallium	7	0.50	-	700	5.0	N.D.
Vanadium	24	0.050	-	2,400	0.50	N.D.
Zinc	250	0.010	-	5,000	0.10	160
Asbestos	-	10	-	10,000	100	-
Fluoride	180	0.10	-	18,000	1.0	-

TTL results are reported as mg/kg of wet weight. Asbestos results are reported as fibers/g.  
Analytes reported as N.D. were not present above the stated limit of detection.

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Project Manager



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Client Project ID: #2421.013.03, Transo/La Coste

QC Sample Group: 003-1486

Reported: Mar 19, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Mercury	Lead	Zinc	Beryllium	Cadmium	Chromium	Copper
Method:	EPA 7470	EPA 7421	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Analyst:	N. Zahedi	K. Anderson	B. Oliver	B. Oliver	B. Oliver	B. Oliver	B. Oliver
Reporting Units:	mg/L	mg/kg	mg/L	mg/L	mg/L	mg/L	mg/L
Date Analyzed:	Mar 14, 1990	Mar 15, 1990	Mar 13, 1990	Mar 13, 1990	Mar 13, 1990	Mar 13, 1990	Mar 13, 1990
QC Sample #:	003-1582	003-0604	002-3196	002-3196	002-3196	002-3196	002-3196
Sample Conc.:	N.D.	4.3	0.018	N.D.	N.D.	0.017	0.010
Spike Conc. Added:	0.0019	50	1.0	1.0	1.0	1.0	1.0
Conc. Matrix Spike:	0.0020	60	1.1	1.0	1.0	1.1	1.0
Matrix Spike % Recovery:	110	110	110	100	100	110	99
Conc. Matrix Spike Dup.:	0.0019	58	1.1	1.0	0.96	0.99	0.93
Matrix Spike Duplicate % Recovery:	100	110	110	100	96	99	92
Relative % Difference:	5.1	3.4	0	0	4.1	11	7.3

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Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Method (units): EPA 8240 (µg/L purged)  
Analyst(s): A. MirafTab  
QC Sample #: 003-0736

Q.C. Sample Dates

Analyzed: Mar 14, 1990  
Reported: Mar 19, 1990

## QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
1,1-Dichloroethene	N.D.	50	59	120	55	110	7.0
Trichloroethene	N.D.	50	51	100	50	100	2.0
Benzene	N.D.	50	52	100	49	98	5.9
Toluene	N.D.	50	54	110	52	100	3.8
Chlorobenzene	N.D.	50	56	110	53	110	5.5

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Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Analysis Method: EPA 8240  
Lab Number: 003-1486

Sampled: Mar 9, 1990  
Received: Mar 9, 1990  
Analyzed: Mar 14, 1990  
Reported: Mar 19, 1990

## VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acetone.....	500	N.D.
Benzene.....	100	N.D.
Bromodichloromethane.....	100	N.D.
Bromoform.....	100	N.D.
Bromomethane.....	100	N.D.
2-Butanone.....	500	N.D.
Carbon disulfide.....	100	N.D.
Carbon tetrachloride.....	100	N.D.
Chlorobenzene.....	100	N.D.
Chlorodibromomethane.....	100	N.D.
Chloroethane.....	100	N.D.
2-Chloroethyl vinyl ether.....	500	N.D.
Chloroform.....	100	N.D.
Chloromethane.....	100	N.D.
1,1-Dichloroethane.....	100	N.D.
1,2-Dichloroethane.....	100	N.D.
1,1,1-Dichloroethane.....	100	N.D.
Total 1,2-Dichloroethane.....	100	N.D.
1,2-Dichloropropane.....	100	N.D.
cis 1,3-Dichloropropene.....	100	N.D.
trans 1,3-Dichloropropene.....	100	N.D.
Ethylbenzene.....	100	N.D.
2-Hexanone.....	500	N.D.
Methylene chloride.....	100	N.D.
4-Methyl-2-pentanone.....	500	N.D.
Styrene.....	100	N.D.
1,1,1,2-Tetrachloroethane.....	100	N.D.
Tetrachloroethene.....	100	N.D.
Toluene.....	100	N.D.
1,1,1-Trichloroethane.....	100	N.D.
1,1,2-Trichloroethane.....	100	N.D.
Trichloroethene.....	100	N.D.
Trichlorofluoromethane.....	100	N.D.
Vinyl acetate.....	100	N.D.
Vinyl chloride.....	100	N.D.
Total Xylenes .....	100	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



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King Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Analysis Method: EPA 8270  
Lab Number: 003-1486

Sampled: Mar 9, 1990  
Received: Mar 9, 1990  
Extracted: Mar 13, 1990  
Analyzed: Mar 15, 1990  
Reported: Mar 19, 1990

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
Acenaphthene.....	2,000	N.D.
Acenaphthylene.....	2,000	N.D.
Aniline.....	2,000	N.D.
Anthracene.....	2,000	N.D.
Benzidine.....	50,000	N.D.
Benzoic Acid.....	10,000	N.D.
Benzo(a)anthracene.....	2,000	N.D.
Benzo(b)fluoranthene.....	2,000	N.D.
Benzo(k)fluoranthene.....	2,000	N.D.
Benzo(g,h,i)perylene.....	2,000	N.D.
Benzo(a)pyrene.....	2,000	N.D.
Benzyl alcohol.....	2,000	N.D.
Bis(2-chloroethoxy)methane.....	2,000	N.D.
Bis(2-chloroethyl)ether.....	2,000	N.D.
Bis(2-chloroisopropyl)ether.....	2,000	N.D.
Bis(2-ethylhexyl)phthalate.....	10,000	N.D.
4-Bromophenyl phenyl ether.....	2,000	N.D.
Butyl benzyl phthalate.....	2,000	N.D.
4-Chloroaniline.....	2,000	N.D.
2-Chloronaphthalene.....	2,000	N.D.
4-Chloro-3-methylphenol.....	2,000	N.D.
2-Chlorophenol.....	2,000	N.D.
4-Chlorophenyl phenyl ether.....	2,000	N.D.
Chrysene.....	2,000	N.D.
Dibenz(a,h)anthracene.....	2,000	N.D.
Dibenzofuran.....	2,000	N.D.
Di-N-butyl phthalate.....	10,000	N.D.
1,3-Dichlorobenzene.....	2,000	N.D.
1,4-Dichlorobenzene.....	2,000	N.D.
1,2-Dichlorobenzene.....	2,000	N.D.
3,3-Dichlorobenzidine.....	10,000	N.D.
2,4-Dichlorophenol.....	2,000	N.D.
Diethyl phthalate.....	2,000	N.D.
2,4-Dimethylphenol.....	2,000	N.D.
Dimethyl phthalate.....	2,000	N.D.
4,6-Dinitro-2-methylphenol.....	10,000	N.D.
2,4-Dinitrophenol.....	10,000	N.D.





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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Analysis Method: EPA 8270  
Lab Number: 003-1486

Sampled: Mar 9, 1990  
Received: Mar 9, 1990  
Extracted: Mar 13, 1990  
Analyzed: Mar 15, 1990  
Reported: Mar 19, 1990

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/kg	Sample Results µg/kg
2,4-Dinitrotoluene.....	2,000	N.D.
2,6-Dinitrotoluene.....	2,000	N.D.
Di-N-octyl phthalate.....	2,000	N.D.
Fluoranthene.....	2,000	N.D.
Fluorene.....	2,000	N.D.
Hexachlorobenzene.....	2,000	N.D.
Hexachlorobutadiene.....	2,000	N.D.
Hexachlorocyclopentadiene.....	2,000	N.D.
Hexachloroethane.....	2,000	N.D.
Indeno(1,2,3-cd)pyrene.....	2,000	N.D.
Isophorone.....	2,000	N.D.
2-Methylnaphthalene.....	2,000	N.D.
2-Methylphenol.....	2,000	N.D.
4-Methylphenol.....	2,000	N.D.
Phthalene.....	2,000	N.D.
Nitroaniline.....	10,000	N.D.
3-Nitroaniline.....	10,000	N.D.
4-Nitroaniline.....	10,000	N.D.
Nitrobenzene.....	2,000	N.D.
2-Nitrophenol.....	2,000	N.D.
4-Nitrophenol.....	10,000	N.D.
N-Nitrosodiphenylamine.....	2,000	N.D.
N-Nitroso-di-N-propylamine.....	2,000	N.D.
Pentachlorophenol.....	10,000	N.D.
Phenathrene.....	2,000	N.D.
Phenol.....	2,000	N.D.
Pyrene.....	2,000	N.D.
1,2,4-Trichlorobenzene.....	2,000	N.D.
2,4,5-Trichlorophenol.....	10,000	N.D.
2,4,6-Trichlorophenol.....	2,000	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

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Vickie Tague  
Project Manager



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Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Method (units): EPA 8270 (µg)  
Analyst(s): J. Schwarz  
QC Sample #: 003-0690

Q.C. Sample Dates  
Extracted: Mar 13, 1990  
Analyzed: Mar 15, 1990  
Reported: Mar 19, 1990

## QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
Phenol	N.D.	100	27	27	30	30	11
2-Chlorophenol	N.D.	100	66	66	71	71	7.3
1,4-Dichloro-benzene	N.D.	50	24	48	30	60	15
4-Nitroso-Di-N-propylamine	N.D.	50	26	52	38	76	37
1,2,4-Trichloro-benzene	N.D.	50	24	48	31	62	25
4-Chloro-3-Methylphenol	N.D.	100	59	59	66	66	11
Acenaphthene	N.D.	50	28	56	35	70	22
4-Nitrophenol	N.D.	100	10	10	9.0	9.0	11
2,4-Dinitro-toluene	N.D.	50	20	40	21	42	4.8
Pentachloro-phenol	N.D.	100	27	27	26	26	3.8
Pyrene	N.D.	50	30	60	36	72	18

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Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Lab Number: 003-1486

Sampled: Mar 7, 1990  
Received: relog 4/11  
Reported: Apr 17, 1990

## LABORATORY ANALYSIS

Analyte	Detection Limit mg/kg	Sample Results mg/kg
Reactivity:		
Cyanide	1.0	8.0
Sulfide	20	740

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

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Vickie Tague  
Project Manager



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Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Lab Number: 003-1486

Sampled: Mar 7, 1990  
Received: relog 4/11  
Analyzed: Apr 13, 1990  
Reported: Apr 17, 1990

## LABORATORY ANALYSIS OF STLC EXTRACT

Analyte	Detection Limit mg/L	Sample Results mg/L
Lead	0.0050	6.1

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

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Vickie Tague  
Project Manager



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Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste

QC Sample Group: 003-1486

Reported: Apr 17, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Lead	Cyanide	Reactive Sulfide
---------	------	---------	------------------

Method:	EPA 7421	EPA 333.2	EPA 9030
Analyst:	R. Britton	A. Chu	K. Anderson
Reporting Units:	mg/L	mg/kg	mg/kg
Date Analyzed:	Apr 13, 1990	Apr 16, 1990	Apr 17, 1990
QC Sample #:	004-1088	003-1145	003-1486

Sample Conc.: N.D. N.D. 740

Spike Conc. Added: 1.0 1.0 1,900

Conc. Matrix Spike: 1.2 0.90 2,000

Matrix Spike % Recovery: 120 90 66

Conc. Matrix Spike Dup.: 1.1 0.90 2,600

Matrix Spike Duplicate % Recovery: 110 90 98

Relative % Difference: 8.7 0 26

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Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421.013.03, Transo/La Coste  
Sample Descript: Soil, S-2  
Lab Number: 003-1486

Sampled: Mar 7, 1990  
Received: relog 4/19  
Analyzed: Apr 20, 1990  
Reported: Apr 20, 1990

## LABORATORY ANALYSIS

Analyte	Detection Limit	Sample Results mg/kg
Corrosivity:		
pH, pH units.....	N.A. ....	8.9
Reaction with water.....	N.A. ....	Negative

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

SEQUOIA ANALYTICAL

*Maria Lee*  
Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03  
Matrix Descript: Soil  
Analysis Method: EPA 3550/8015  
First Sample #: 003-1502

Sampled: Mar 8, 1990  
Received: Mar 9, 1990  
Extracted: Mar 12, 1990  
Analyzed: Mar 13, 1990  
Reported: Mar 15, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
003-1502	S-11	16

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

31502.HAO <1>



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03

QC Sample Group: 003-1502

Reported: Mar 15, 1990

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	High Boiling Point Hydrocarbons
----------------	------------------------------------

Method: EPA 8015  
 Analyst: K. Mitchell  
 Reporting Units: mg/kg  
 Date Analyzed: Mar 13, 1990  
 QC Sample #: Matrix

Sample Conc.: N.D.

Spike Conc. Added: 15

Conc. Matrix Spike: 12

Matrix Spike % Recovery: 80

Conc. Matrix Spike Dup.: 10

Matrix Spike Duplicate % Recovery: 67

Relative % Difference: 18

SEQUOIA ANALYTICAL

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

*Vickie Tague*  
 For Vickie Tague  
 Project Manager





# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03  
Matrix Descript: Soil  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-1502

Sampled: Mar 8, 1990  
Received: Mar 9, 1990  
Extracted: Mar 14, 1990  
Analyzed: Mar 14, 1990  
Reported: Mar 15, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-1502	S-11	720

Detection Limits:

2.0

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

SEQUOIA ANALYTICAL

  
Vickie Tagde  
Project Manager

31502.HAO <3>



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03

QC Sample Group: 003-1502

Reported: Mar 15, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Total Recoverable
	Petroleum Hydrocarbons

Method: EPA 418.1  
 Analyst: M. Fazio  
 Reporting Units: mg/kg  
 Date Analyzed: Mar 14, 1990  
 QC Sample #: 002-3855

Sample Conc.: N.D.

Spike Conc.  
Added: 80

Conc. Matrix  
Spike: 78

Matrix Spike  
% Recovery: 98

Conc. Matrix  
Spike Dup.: 75

Matrix Spike  
Duplicate  
% Recovery: 94

Relative  
% Difference: 3.9

SEQUOIA ANALYTICAL

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

*Vickie Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo/LaCoste  
Matrix Descript: Soil  
Analysis Method: EPA 3550/8015  
First Sample #: 003-1499

Sampled: Mar 7-8, 1990  
Received: Mar 9, 1990  
Extracted: Mar 13, 1990  
Analyzed: Mar 22, 1990  
Reported: Mar 26, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons mg/kg (ppm)
003-1499	S-1	N.D.
003-1500	S-7	N.D.
003-1501	S-9	1.3
003-1503	S-13	36

Detection Limits:

1.0

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

  
Vickie Tagge  
Project Manager

31499.HAO <1>



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo/LaCoste

QC Sample Group: 0031499-1503

Reported: Mar 26, 1990

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	High Boiling Point Hydrocarbons
----------------	------------------------------------

Method: EPA 8015  
 Analyst: K. Mitchell  
 Reporting Units: mg/kg  
 Date Analyzed: Mar 22, 1990  
 QC Sample #: 003-1529

Sample Conc.: N.D.

Spike Conc.  
Added: 15

Conc. Matrix  
Spike: 11

Matrix Spike  
% Recovery: 73

Conc. Matrix  
Spike Dup.: 10

Matrix Spike  
Duplicate  
% Recovery: 67

Relative  
% Difference: 9.5

SEQUOIA ANALYTICAL

Vickie Tagle  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo/LaCoste  
Matrix Descript: Soil  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-1499

Sampled: Mar 7-8, 1990  
Received: Mar 9, 1990  
Extracted: Mar 23, 1990  
Analyzed: Mar 23, 1990  
Reported: Mar 26, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/kg (ppm)
003-1499	S-1	13
003-1500	S-7	120
003-1501	S-9	310
003-1503	S-13	770

Detection Limits:

2.0

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

31499.HAO <3>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,013.03, Transo/LaCoste

QC Sample Group: 0031499-1503

Reported: Mar 26, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Total Recoverable
	Petroleum Hydrocarbons

Method: EPA 418.1  
 Analyst: M. Fazio  
 Reporting Units: mg/kg  
 Date Analyzed: Mar 23, 1990  
 QC Sample #: 003-1499

Sample Conc.: 13

Spike Conc.  
Added: 80

Conc. Matrix  
Spike: 100

Matrix Spike  
% Recovery: 110

Conc. Matrix  
Spike Dup.: 82

Matrix Spike  
Duplicate  
% Recovery: 86

Relative  
% Difference: 20

SEQUOIA ANALYTICAL

  
 Vickie Tague  
 Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



Hilling Lawson Associates  
 1000 Wilshire Way, Suite 109  
 Los Angeles, California 94520  
 415/687-9660  
 Telecopy: 415/687-9673

# CHAIN OF STUDY FORM

Lab: Seq 001

Samplers: Mike Bink

Job Number: 2421, 013, 03

Name/Location: Tringo/La Costa

Project Manager: Terry McManus

Recorder: Terrance J. McManus  
 (Signature Required)

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE				
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	6/AS5	Seal Tag	Yr	Wk	Seq	Yr	Mo	Dy	Time
48		X					X					S-17	00	3	07	
							X					S-29	00	3	07	→
							X					S-79	00	3	07	
							X					S-99	00	3	07	
							X					S-119	00	3	08	
							X					S-139	00	3	08	→

STATION DESCRIPTION/NOTES  
 All samples 2-week Turnover except 5-2.  
 (2-week Turnover)  
 please try to identify type of petroleum product present in S-13

ANALYSIS REQUESTED									
EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH/medium/High	17 CMI Heavy Metals	Oil + Grease (HPR.1)		
					X	X	X		
	X	X		X	X	X	X		
				X	X	X	X		
				X	X	X	X		

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>Terrance J. McManus</u>	RECEIVED BY: (Signature) <u>T. Balan</u>	DATE/TIME <u>3/9/03 9:20</u>
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)
METHOD OF SHIPMENT		



# SEQUOIA ANALYTICAL

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(415) 364-9600 • FAX (415) 364-9233

Guarding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Mike Brink

Client Project ID: #2421,013.03, Transo/La Coste  
Sample Descript: Soil  
Analysis for: Lead (STLC)  
First Sample #: 005-0132

Sampled: May 1, 1990  
Received: May 1, 1990  
Analyzed: May 16, 1990  
Reported: May 18, 1990

## LABORATORY ANALYSIS FOR: Lead (STLC)

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
005-0132	P-1	0.0050	2.5
005-0133	P-2	0.0050	2.1
005-0134	P-3	0.0050	4.5
005-0135	P-4	0.0050	35
005-0136	P-5	0.0050	5.7

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

SEQUOIA ANALYTICAL

  
Vickie Tague  
Project Manager





# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Mike Brink

Client Project ID: #2421,013.03, Transo/La Coste

QC Sample Group: 0050132-6

Reported: May 18, 1990

## QUALITY CONTROL DATA REPORT

<b>ANALYTE</b>	Lead
----------------	------

Method: EPA 7421  
 Analyst: K. Anderson  
 Reporting Units: mg/L  
 Date Analyzed: May 16, 1990  
 QC Sample #: 006-0132

Sample Conc.: 2.5

Spike Conc. Added: 10

Conc. Matrix Spike: 11

Matrix Spike % Recovery: 85

Conc. Matrix Spike Dup.: 11

Matrix Spike Duplicate % Recovery: 85

Relative % Difference: 0

SEQUOIA ANALYTICAL

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$

*Vickie Tague*  
Vickie Tague  
Project Manager

HARDING ASSOC.



Milk Material Analysis

MAR 5 1990

Client:
Harding Lawson Associates (C)
1355 Willow Way, Suite #109
Concord, CA 94520

Client Number: 386
Report Number: 42107
Date Received: 03/01/90
Date Examined: 03/02/90

Lab Number: 9010634
Sample Number: Bay-Asb.
Site: Bay Street.

Analyst: DK

Location: Not indicated.

P.O./Job ID: 2421,010.03/Bay St.

Gross Description: Off-white fibrous material.

Comments:

Microscopic Description

Table with 3 columns: Material Type, Quantity, and Percentage. Rows include TOTAL ASBESTOS PRESENT (Chrysotile, Amosite, Crocidolite), TOTAL NON-ASBESTOS FIBROUS MATERIAL PRESENT (Cellulose, Fibrous Glass), and TOTAL NON-ASBESTOS NON-FIBROUS MATERIAL PRESENT (Unspecified Particulates).

Director:

Handwritten signature: Janis Teichman
Printed name: Janis Teichman

Analytical method: 40 CFR 763, Subpart Y, Appendix A (AHERA)

See Reverse for Explanation of Terms and Reporting Practices.

3777 Depot Road, Suite 409, Hayward, California 94545 Telephone: 415/887-8828 800/827-FASI Fax: 415/887-4218

NVLAP Accredited by the National Bureau of Standards, National Voluntary Laboratory Accreditation Program for selected test methods for asbestos.



Client **Harding Lawson Associates**  
Address 1355 Willow Way, Suite 109  
Concord,, CA 94520

Attn:

Project 02421,013.03

Location Transo/Lacoste/Bay St. Ext.

HARDING ASSOC.

Number 1

MAR 13 1990

R J Lee Job Number AOC003120

Date of Sample Receipt 3/7/90

Date of Sample Report 3/8/90

Sample Number and Description	% Asbestos Fibers	% Non-Asbestos Fibers	% Non-Fibrous Materials	Analyst Run Date
S - 3 Multicolored soil.	47360CPL < 1 None Detected	1-2 Cellulose 1-2 Fibrous Glass	96-98 Quartz, Opaques, Hornblende, Feldspar, Organic Particles, Fine Grains, and Misc. Particles.	DJ 3/8/90 No
S - 4 Multicolored paper and soil material.	47361CPL < 1 None Detected	30-40 Cellulose 1-2 Fibrous Glass	58-69 Quartz, Binder, Hornblende, Feldspar, Organic Particles, Fine Grains, and Misc. Particles.	DJ 3/8/90 No
S - 5 Multicolored insulation and soil material.	47362CPL 20-30 Chrysotile	20-30 Amosite	40-60 Quartz, Binder, Hornblende, Feldspar, Organic Particles, Fine Grains, and Misc. Particles.	CBM 3/8/90 No
S - 6 Multicolored soil.	47363CPL < 1 None Detected	1-2 Cellulose 3-5 Fibrous Glass	93-96 Quartz, Opaques, Hornblende, Feldspar, Clay, Fine Grains, and Misc. Particles.	DJ 3/8/90 No

**Comments:**

**Analysis Method:**


EPA Interim Method, 1987 (40 CFR , Pt 763, Subpt. F, App. A, pp 293-299)

NIST NVLAP Participant Number 1208-2

**R J Lee Group**  
Berkeley

2424 Sixth Street  
Berkeley, CA 94710

These results are pursuant to RJ Lee Group's current terms and conditions of sale including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

  
David C Ewing  
NVLAP Signatory

415-486-8319  
Telefax 415-486-0927

Neither the NVLAP Accreditation of this Laboratory nor this report may be used to claim product endorsement by NVLAP or any agency of the U.S. Government

Client Name **Harding Lawson Associates**  
Address **1355 Willow Way, Suite 109**  
**Concord., CA 94520**

Attn:

Project **02421,013.03**

Location **Traso/Lacoste/Bay St. Ext.**

Number **2**

R J Lee Job Number **AOC003120**

Date of Sample Receipt **3/7/90**

Date of Sample Report **3/8/90**

Sample Number and Description	% Asbestos Fibers	% Non-Asbestos Fibers	% Non-Fibrous Materials	Analyst Run Date Homogeneity
S-8 White soil material.	47364CPL < 1 None Detected		100 Quartz, Carbonate, Feldspar, Fine Grains, and Misc. Particles.	CBM 3/8/90 No
S-10 Brown soil material.	47365CPL < 1 None Detected	1-2 Fibrous Glass	98-99 Quartz, Carbonate, Feldspar, Clay, and Misc. Particles.	DJ 3/8/90 No

**Comments:**


**Analysis Method:**

EPA Interim Method, 1987 (40 CFR , Pt 763, Subpt. F, App. A, pp 293-299)

NIST NVLAP Participant Number **1208-2**

**R J Lee Group**  
**Berkeley**

**2424 Sixth Street**  
**Berkeley, CA 94710**

  
David C Ewing  
NVLAP Signatory

**415-486-8319**  
**Telefax 415-486-0927**

These results are pursuant to RJ Lee Group's current terms and conditions of sale including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

*Neither the NVLAP Accreditation of this Laboratory nor this report may be used to claim product endorsement by NVLAP or any agency of the U.S. Government*



MAR 1 1990 MAR 1 1990

PAGE 1 OF 2

**ENVIRONMENTAL & OCCUPATIONAL HEALTH SERVICES**

3440 Vincent Road Pleasant Hill, CA 94523 • (415) 930-9090 • FAX# (415) 930-0256

**LABORATORY ANALYSIS REPORT**

HARDING LAWSON ASSOCIATES  
1355 WILLOW WAY  
SUITE 109  
CONCORD, CA 94520  
ATTN: TERRY McMANUS

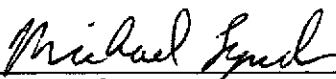
REPORT DATE: 02/28/90  
DATE SAMPLED: 02/22/90  
DATE RECEIVED: 02/22/90  
MED-TOX JOB NO: 9002156

CLIENT PROJECT NO: 2421,010.03

**ANALYSIS OF: SOIL SAMPLES FOR PURGEABLE HYDROCARBONS**

Sample Identification		Purgeable Hydrocarbons as Gasoline (mg/kg)
Client ID	Lab No.	
S-1	01A	29(1)*
S-2	02A	0.7*
Detection Limit		0.2
(unless otherwise indicated by parentheses)		
EPA Method		8015
Instrument		9

\* This sample contains heavier hydrocarbons than those found in gasoline. Results are based on gasoline calibration.

  
Michael Lynch, Manager  
Organic Laboratory

Results FAXed to Terry McManus 02/26/90, 02/27/90 &amp; 02/28/90

DATE ANALYZED: 02/26/90

MED-TOX JOB NO: 9002156

INSTRUMENT: 9

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8020/8015 (PURGE & TRAP)**

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	27.7	ND	29.4	30.7	108.4	4.3
Toluene	106.3	7.6	110.0	113.8	105.3	3.4
TPH as Gasoline	1095	ND	817.3	769.8	72.4	6.0

**CURRENT QC LIMITS (Revised 11/09/89)**

<u>Analyte</u>	<u>Percent Recovery</u>	<u>RPD</u>
Benzene	(70-136)	17
Toluene	(78-122)	18
TPH as Gasoline	(54-129)	19

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected



ENVIRONMENTAL & OCCUPATIONAL HEALTH SERVICES

3440 Vincent Road Pleasant Hill, CA 94523 • (415) 930-9090 • FAX# (415) 930-0256

LABORATORY ANALYSIS REPORT

HARDING LAWSON ASSOCIATES  
1355 WILLOW WAY  
SUITE 109  
CONCORD, CA 94520  
ATTN: TERRY McMANUS

REPORT DATE: 02/28/90  
DATE SAMPLED: 02/22/90  
DATE RECEIVED: 02/22/90  
MED-TOX JOB NO: 9002156

CLIENT PROJECT NO: 2421,010.03

ANALYSIS OF: SOIL SAMPLES FOR BTXE AND ETHANOL

See attached for results

  
Michael Lynch, Manager  
Organic Laboratory

Results FAXed to Terry McManus 02/26/90, 02/27/90 & 02/28/90

HARDING LAWSON ASSOCIATES

CLIENT ID: S-1  
CLIENT JOB NO: 2421,010.03  
DATE SAMPLED: 02/22/90  
DATE RECEIVED: 02/22/90

MED-TOX LAB NO: 9002156-01A  
MED-TOX JOB NO: 9002156  
DATE ANALYZED: 02/23-26/90  
INSTRUMENT: 9, 12  
REPORT DATE: 02/28/90

BTXE AND ETHANOL

METHOD: EPA 8020/8015 (PURGE & TRAP)

---

	Concentration (ug/kg)	Detection Limit (ug/kg)
Benzene.....	26	5
Toluene.....	1,700	5
Ethylbenzene.....	13	5
Xylenes.....	50	20
Ethanol.....	45 mg/kg	1 mg/kg

---

HARDING LAWSON ASSOCIATES

CLIENT ID: S-2  
CLIENT JOB NO: 2421,010.03  
DATE SAMPLED: 02/22/90  
DATE RECEIVED: 02/22/90MED-TOX LAB NO: 9002156-02A  
MED-TOX JOB NO: 9002156  
DATE ANALYZED: 02/23-26/90  
INSTRUMENT: 9, 12  
REPORT DATE: 02/28/90

## BTXE AND ETHANOL

METHOD: EPA 8020/8015 (PURGE &amp; TRAP)

---

	Concentration (ug/kg)	Detection Limit (ug/kg)
Benzene.....	ND	1
Toluene.....	170	1
Ethylbenzene.....	ND	1
Xylenes.....	ND	3
Ethanol.....	1 mg/kg	1 mg/kg

---

ND = Not Detected

DATE ANALYZED: 02/26/90

MED-TOX JOB NO: 9002156

INSTRUMENT: 9

CLIENT REF: 2421,010.03

**MATRIX SPIKE RECOVERY SUMMARY**  
**METHOD 8020/8015 (PURGE & TRAP)**

ANALYTE	Spike Conc. (ug/kg)	Sample Result (ug/kg)	MS Result (ug/kg)	MSD Result (ug/kg)	Average Percent Recovery	RPD
Benzene	27.7	ND	29.4	30.7	108.4	4.3
Toluene	106.3	7.6	110.0	113.8	105.3	3.4
TPH as Gasoline	1095	ND	817.3	769.8	72.4	6.0

**CURRENT QC LIMITS (Revised 11/09/89)**

Analyte	Percent Recovery	RPD
Benzene	(70-136)	17
Toluene	(78-122)	18
TPH as Gasoline	(54-129)	19

MS = Matrix Spike  
MSD = Matrix Spike Duplicate  
RPD = Relative Percent Difference  
ND = Not Detected



LABORATORY REPORTS  
DEMOLITION MONITORING  
WATER SAMPLES



# SEQUOIA ANALYTICAL


680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates 1355 Willow Way, Suite 109 Concord, CA 94520 Attention: Terry McManus	Client Project ID: #2421,010.03, Bay St. Extension Sample Descript: Water, Sump Analysis Method: EPA 8240 Lab Number: 003-0032 A	Sampled: Feb 28, 1990 Received: Feb 28, 1990 Analyzed: Mar 4, 1990 Reported: Mar 6, 1990
--	---	---

## VOLATILE ORGANICS by GC/MS (EPA 8240)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acetone.....	10	N.D.
Benzene.....	2.0	N.D.
Bromodichloromethane.....	2.0	N.D.
Bromoform.....	2.0	N.D.
Bromomethane.....	2.0	N.D.
2-Butanone.....	10	N.D.
Carbon disulfide.....	2.0	N.D.
Carbon tetrachloride.....	2.0	N.D.
Chlorobenzene.....	2.0	N.D.
Chlorodibromomethane.....	2.0	N.D.
Chloroethane.....	2.0	N.D.
2-Chloroethyl vinyl ether.....	10	N.D.
Chloroform.....	2.0	N.D.
Chloromethane.....	2.0	N.D.
1,1-Dichloroethane.....	2.0	N.D.
1,2-Dichloroethane.....	2.0	N.D.
1,1-Dichloroethene.....	2.0	N.D.
Total 1,2-Dichloroethene.....	2.0	N.D.
1,2-Dichloropropane.....	2.0	N.D.
cis 1,3-Dichloropropene.....	2.0	N.D.
trans 1,3-Dichloropropene.....	2.0	N.D.
Ethylbenzene.....	2.0	N.D.
2-Hexanone.....	10	N.D.
Methylene chloride.....	2.0	N.D.
4-Methyl-2-pentanone.....	10	N.D.
Styrene.....	2.0	N.D.
1,1,2,2-Tetrachloroethane.....	2.0	N.D.
Tetrachloroethene.....	2.0	N.D.
Toluene.....	2.0	N.D.
1,1,1-Trichloroethane.....	2.0	N.D.
1,1,2-Trichloroethane.....	2.0	N.D.
Trichloroethene.....	2.0	N.D.
Trichlorofluoromethane.....	2.0	N.D.
Vinyl acetate.....	2.0	N.D.
Vinyl chloride.....	2.0	N.D.
Total Xylenes.....	2.0	N.D.

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

SEQUOIA ANALYTICAL  
  
 Vickie Tague  
 Project Manager



# SEQUOIA ANALYTICAL

680 Chesapeake Drive • Redwood City, CA 94063  
(415) 364-9600 • FAX (415) 364-9233

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Sample Descript: Water, Sump  
Analysis Method: EPA 8270  
Lab Number: 003-0032 D

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Extracted: Mar 2, 1990  
Analyzed: Mar 5, 1990  
Reported: Mar 6, 1990

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene.....	2.0	N.D.
Acenaphthylene.....	2.0	N.D.
Aniline.....	2.0	N.D.
Anthracene.....	2.0	N.D.
Benzidine.....	50	N.D.
Benzoic Acid.....	10	N.D.
Benzo(a)anthracene.....	2.0	N.D.
Benzo(b)fluoranthene.....	2.0	N.D.
Benzo(k)fluoranthene.....	2.0	N.D.
Benzo(g,h,i)perylene.....	2.0	N.D.
Benzo(a)pyrene.....	2.0	N.D.
Benzyl alcohol.....	2.0	N.D.
Bis(2-chloroethoxy)methane.....	2.0	N.D.
Bis(2-chloroethyl)ether.....	2.0	N.D.
Bis(2-chloroisopropyl)ether.....	2.0	N.D.
Bis(2-ethylhexyl)phthalate.....	10	N.D.
4-Bromophenyl phenyl ether.....	2.0	N.D.
Butyl benzyl phthalate.....	2.0	N.D.
4-Chloroaniline.....	2.0	N.D.
2-Chloronaphthalene.....	2.0	N.D.
4-Chloro-3-methylphenol.....	2.0	N.D.
2-Chlorophenol.....	2.0	N.D.
4-Chlorophenyl phenyl ether.....	2.0	N.D.
Chrysene.....	2.0	N.D.
Dibenz(a,h)anthracene.....	2.0	N.D.
Dibenzofuran.....	2.0	N.D.
Di-N-butyl phthalate.....	10	N.D.
1,3-Dichlorobenzene.....	2.0	N.D.
1,4-Dichlorobenzene.....	2.0	N.D.
1,2-Dichlorobenzene.....	2.0	N.D.
3,3-Dichlorobenzidine.....	10	N.D.
2,4-Dichlorophenol.....	2.0	N.D.
Diethyl phthalate.....	2.0	N.D.
2,4-Dimethylphenol.....	2.0	N.D.
Dimethyl phthalate.....	2.0	N.D.
4,6-Dinitro-2-methylphenol.....	10	N.D.
2,4-Dinitrophenol.....	10	N.D.





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Harding Lawson Associates  
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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Sample Descript: Water, Sump  
Analysis Method: EPA 8270  
Lab Number: 003-0032 D

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Extracted: Mar 2, 1990  
Analyzed: Mar 5, 1990  
Reported: Mar 6, 1990

## SEMI-VOLATILE ORGANICS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
2,4-Dinitrotoluene.....	2.0	N.D.
2,6-Dinitrotoluene.....	2.0	N.D.
Di-N-octyl phthalate.....	2.0	N.D.
Fluoranthene.....	2.0	N.D.
Fluorene.....	2.0	N.D.
Hexachlorobenzene.....	2.0	N.D.
Hexachlorobutadiene.....	2.0	N.D.
Hexachlorocyclopentadiene.....	2.0	N.D.
Hexachloroethane.....	2.0	N.D.
Indeno(1,2,3-cd)pyrene.....	2.0	N.D.
Isophorone.....	2.0	N.D.
2-Methylnaphthalene.....	2.0	N.D.
2-Methylphenol.....	2.0	N.D.
1-Methylphenol.....	2.0	N.D.
Naphthalene.....	2.0	N.D.
2-Nitroaniline.....	10	N.D.
3-Nitroaniline.....	10	N.D.
4-Nitroaniline.....	10	N.D.
Nitrobenzene.....	2.0	N.D.
2-Nitrophenol.....	2.0	N.D.
4-Nitrophenol.....	10	N.D.
N-Nitrosodiphenylamine.....	2.0	N.D.
N-Nitroso-di-N-propylamine.....	2.0	N.D.
Pentachlorophenol.....	10	N.D.
Phenathrene.....	2.0	N.D.
Phenol.....	2.0	N.D.
Pyrene.....	2.0	N.D.
1,2,4-Trichlorobenzene.....	2.0	N.D.
2,4,5-Trichlorophenol.....	10	N.D.
2,4,6-Trichlorophenol.....	2.0	N.D.

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Sample Descript: Water, Sump

Lab Number: 003-0032 E

Sampled: Feb 28, 1990  
Received: Feb 28, 1990

Reported: Mar 6, 1990

## INORGANIC PERSISTENT AND BIOACCUMULATIVE TOXIC SUBSTANCES

### Soluble Threshold Limit Concentration Waste Extraction Test

### Total Threshold Limit Concentration

Analyte	STLC Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)	TTL Max. Limit (mg/L)	Detection Limit (mg/L)	Analysis Result (mg/L)
Antimony	15	0.050	N.D.	500	0.050	N.D.
Arsenic	5	0.010	N.D.	500	0.0050	0.012
Barium	100	0.10	N.D.	10,000	0.10	N.D.
Beryllium	0.75	0.010	N.D.	75	0.010	N.D.
Cadmium	1	0.010	N.D.	100	0.010	N.D.
Chromium (VI)	5	0.0050	N.D.	500	0.0050	N.D.
Chromium (III)	560	0.0050	N.D.	2,500	0.0050	N.D.
Cobalt	80	0.050	N.D.	8,000	0.050	N.D.
Copper	25	0.010	N.D.	2,500	0.010	0.15
Lead	5	0.0050	N.D.	1,000	0.0050	0.015
Mercury	0.2	0.00020	N.D.	20	0.0010	N.D.
Molybdenum	350	0.050	N.D.	3,500	0.050	N.D.
Nickel	20	0.050	N.D.	2,000	0.050	N.D.
Selenium	1	0.010	N.D.	100	0.0050	N.D.
Silver	5	0.010	N.D.	500	0.010	N.D.
Thallium	7	0.50	N.D.	700	0.50	N.D.
Vanadium	24	0.050	N.D.	2,400	0.050	N.D.
Zinc	250	0.010	N.D.	5,000	0.010	0.34

TTL results are reported as mg/kg of wet weight. Asbestos results are reported as fibers/g.  
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Matrix Descript: Water  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 003-0032 F-H

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Analyzed: Mar 5, 1990  
Reported: Mar 6, 1990

## TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P.	Benzene	Toluene	Ethyl Benzene	Xylenes
		Hydrocarbons				
		$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)	$\mu\text{g/L}$ (ppb)
0030032 F-H	Sump	N.D.	N.D.	N.D.	N.D.	N.D.

**Detection Limits:**

30

0.30

0.30

0.30

0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard.  
Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL**

*V. Tague*  
Vickie Tague  
Project Manager



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Matrix Descript: Water  
Analysis Method: EPA 418.1 (I.R. with clean-up)  
First Sample #: 003-0032 I

Sampled: Feb 28, 1990  
Received: Feb 28, 1990  
Extracted: Mar 5, 1990  
Analyzed: Mar 5, 1990  
Reported: Mar 6, 1990

## TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

Sample Number	Sample Description	Petroleum Oil mg/L (ppm)
0030032 I	Sump	2.9

Detection Limits:

1.0

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

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

30032.HAO <6>



# SEQUOIA ANALYTICAL

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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Method (units): EPA 624 (µg/L purged)  
Analyst(s): S. Fong  
QC Sample #: 003-0221

Q.C. Sample Dates

Analyzed: Mar 4, 1990  
Reported: Mar 8, 1990

## QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike % Recovery	Relative % Difference
1,1-Dichloroethene	N.D.	50	50	100	47	94	6.2
Trichloroethene	N.D.	50	58	120	58	120	0
Benzene	N.D.	50	49	98	48	96	2.1
Toluene	N.D.	50	55	110	55	110	0
Chlorobenzene	N.D.	50	53	110	53	110	0

SEQUOIA ANALYTICAL  
*V. Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension  
Method (units): EPA 625 (µg)  
Analyst(s): J. Schwarz  
QC Sample #: BLK022390

Q.C. Sample Dates  
Extracted: Mar 2, 1990  
Analyzed: Mar 5, 1990  
Reported: Mar 8, 1990

## QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike % Recovery	Relative % Difference
Phenol	N.D.	100	31	31	31	31	0
2-Chlorophenol	N.D.	100	71	71	72	72	1.4
1,4-Dichloro-benzene	N.D.	50	36	72	35	70	2.8
N-Nitroso-Di-N-propylamine	N.D.	50	41	82	40	80	2.5
1,2,4-Trichloro-benzene	N.D.	50	39	78	38	76	2.6
4-Chloro-3-Methylphenol	N.D.	100	71	71	76	76	6.8
Acenaphthene	N.D.	50	38	76	37	74	2.7
4-Nitrophenol	N.D.	100	33	33	37	37	11
2,4-Dinitro-toluene	N.D.	50	35	70	36	72	2.8
Pentachloro-phenol	N.D.	100	42	42	34	34	21
Pyrene	N.D.	50	38	76	37	74	2.7

SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension

QC Sample Group: 003-0032

Reported: Mar 8, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Lead	Selenium	Arsenic
---------	------	----------	---------

Method:	EPA 7421	EPA 7740	EPA 7060
Analyst:	R. Britton	K. Anderson	K. Anderson
Reporting Units:	mg/L	mg/L	mg/L
Date Analyzed:	Mar 5, 1990	Mar 5, 1990	Mar 5, 1990
QC Sample #:	003-0032	003-0032	003-0032

Sample Conc.:	0.015	N.D.	0.012
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Spike Conc. Added:	0.10	0.050	0.050
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Conc. Matrix Spike:	0.095	0.032	0.057
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Matrix Spike % Recovery:	80	61	90
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Conc. Matrix Spike Dup.:	0.098	0.035	0.057
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Matrix Spike Duplicate % Recovery:	83	70	90
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Relative % Difference:	3.1	9.0	0
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SEQUOIA ANALYTICAL

Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension

QC Sample Group: 003-0032

Reported: Mar 8, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
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Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	Spak/Gloria	Spak/Gloria	Spak/Gloria	Spak/Gloria
Reporting Units:	µg/L	µg/L	µg/L	µg/L
Date Analyzed:	Mar 5, 1990	Mar 5, 1990	Mar 5, 1990	Mar 5, 1990
QC Sample #:	003-0038	003-0038	003-0038	003-0038

Sample Conc.:	N.D.	N.D.	N.D.	N.D.
---------------	------	------	------	------

Spike Conc. Added:	2.0	2.0	2.0	6.0
--------------------	-----	-----	-----	-----

Conc. Matrix Spike:	2.7	1.9	2.0	6.0
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Matrix Spike % Recovery:	140	95	100	100
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Conc. Matrix Spike Dup.:	2.3	2.1	1.9	5.9
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Matrix Spike Duplicate % Recovery:	120	110	95	98
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Relative % Difference:	16	10	5.1	1.7
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SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$





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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension

QC Sample Group: 002-0032

Reported: Mar 8, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Zinc	Chromium	Copper	Nickel	Cadium
Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Analyst:	D. Herrera	D. Herrera	D. Herrera	D. Herrera	D. Herrera
Reporting Units:	mg/L	mg/L	mg/L	mg/L	mg/L
Date Analyzed:	Mar 5, 1990	Mar 5, 1990	Mar 5, 1990	Mar 5, 1990	Mar 5, 1990
QC Sample #:	002-3598	002-3598	002-3598	002-3598	002-3598
Sample Conc.:	0.56	N.D.	0.33	N.D.	N.D.
Spike Conc. Added:	1.0	1.0	1.0	1.0	1.0
Conc. Matrix Spike:	1.7	1.0	1.3	0.97	0.97
Matrix Spike % Recovery:	110	100	97	97	97
Conc. Matrix Spike Dup.:	1.6	1.1	1.4	1.1	1.1
Matrix Spike Duplicate % Recovery:	100	110	110	110	110
Relative % Difference:	6.1	9.5	7.4	13	13

SEQUOIA ANALYTICAL

*V. Tague*  
Vickie Tague  
Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



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Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attention: Terry McManus

Client Project ID: #2421,010.03, Bay St. Extension

QC Sample Group: 003-0032

Reported: Mar 8, 1990

## QUALITY CONTROL DATA REPORT

ANALYTE	Total Recoverable
	Petroleum Hydrocarbons

Method: EPA 418.1  
 Analyst: M. Fazio  
 Reporting Units: mg/L  
 Date Analyzed: Mar 5, 1990  
 QC Sample #: 003-0032

Sample Conc.: 2.9

Spike Conc. Added: 40

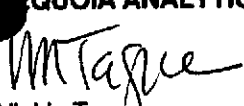
Conc. Matrix Spike: 41

Matrix Spike % Recovery: 95

Conc. Matrix Spike Dup.: 45

Matrix Spike Duplicate % Recovery: 110

Relative % Difference: 9.3

SEQUOIA ANALYTICAL  
  
 Vickie Tague  
 Project Manager

% Recovery:	$\frac{\text{Conc. of M.S.} - \text{Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$
Relative % Difference:	$\frac{\text{Conc. of M.S.} - \text{Conc. of M.S.D.}}{(\text{Conc. of M.S.} + \text{Conc. of M.S.D.}) / 2} \times 100$



LABORATORY REPORTS  
DEMOLITION MONITORING  
AIR SAMPLES (ASBESTOS)

## Code Key for Air Monitoring Samples

<u>Sample Number</u>	<u>Sample Type</u>	<u>Sampling Date and Time</u>
02421-011-03-001	Personal	03/07/90 am
02421-013-03-003	Personal	03/07/90 pm
02421-013-03-004	Downwind	03/07/90 pm
02421-013-03-005	Personal	03/08/90 am
02421-013-03-006	Downwind	03/08/90 am
02421-013-03-008	Downwind	03/08/90 pm
02421-013-03-009	Personal	03/09/90 am
02421-013-03-010	Downwind	03/09/90 am
Sample No. 011	Personal	03/09/90 pm
Sample No. 012	Downwind	03/09/90 pm
02421-013-03-013	Personal	03/12/90 am
02421-013-03-014	Downwind	03/12/90 am
02421-013-03-015	Personal	03/12/90 pm
02421-013-03-016	Downwind	03/12/90 pm
Sample No. 017	Personal	03/13/90 am/pm
Sample No. 018	Downwind	03/13/90 am/pm
Sample No. 019	Personal	03/14/90 am/pm
Sample No. 020	Downwind	03/14/90 am/pm

**RJ Lee Group, Inc.**  
Laboratory Report

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/7/90  
Report Date: 3/9/90  
Project No: AOC003116

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
Location: Transo/Lacoste Demo		Job Number: 2421,011.03		
1	02421-011-03-001, Miguel Casillas	0.0052	0.0090	613

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.

  
Kevin J. Kemmerer  
Microscopist

jsb

RJ Lee Group, Inc.  
Laboratory Report

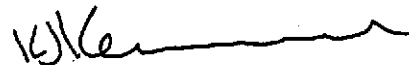
Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/7/90  
Report Date: 3/9/90  
Project No: AOC003119

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
	Location: Transo/Lacoste/Bay Street Exit		Job Number: 02421,013.03	
1	02421-013-03-003, Miguel Casillas	< 0.015	< 0.026	185
2	02421-013-03-004, Downwind	< 0.0067	< 0.012	405

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.



Kevin J. Kemmerer  
Microscopist

jsb

**RJ Lee Group, Inc.**  
Laboratory Report

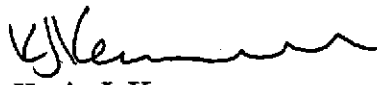
Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/8/90  
Report Date: 3/9/90  
Project No: AOC003152

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
Location: Transo/Lacoste/Bay Street Exit		Job Number: 02421,013.03		
1	02421-013-03-005, Miguel Casillas	< 0.0051	< 0.0091	525
2	02421-013-03-006, Downwind	< 0.0044	< 0.0078	615

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.

  
Kevin J. Kemmerer  
Microscopist

jsb



**RJ Lee Group, Inc.**  
Laboratory Report


Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/8/90  
Report Date: 3/9/90  
Project No: AOC003158

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
Location: Transo/Lacoste/Bay Street Exit		Job Number: 02421,013.03		
1	02421-013-03-008, Downwind	< 0.0057	< 0.010	477

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.

  
Kevin J. Kemmerer  
Microscopist

jsb

**RJ Lee Group, Inc.**  
Laboratory Report

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/9/90  
Report Date: 3/9/90  
Project No: AOC003178

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
	Location: Transo/Lacoste/Bay Street Exit		Job Number: 2421,013.03	
1	02421-013-03-009, Miguel Casillas	< 0.0040	< 0.0071	675
2	02421-013-03-010, Ambient Downwind	< 0.0040	< 0.0071	675

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.

  
Kevin J. Kemmerer  
Microscopist

jsb

**RJ Lee Group, Inc.**  
Laboratory Report

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/9/90  
Report Date: 3/10/90  
Project No: AOC003183

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
Location: Transo/La Coste - Bay Street		Job Number: 2421,013.03		
1	Sample #011, Miguel Casillas	0.015	0.024	310
2	Sample #012, Downwind	< 0.0082	< 0.014	330

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.



Kevin J. Kemmerer  
Microscopist

jsb

**RJ Lee Group, Inc.**  
Laboratory Report

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/12/90  
Report Date: 3/12/90  
Project No: AOC003225

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
Location: Transo/La Coste/Bay Street		Job Number: 2421,013.03		
1	02421-013-03-013, Miguel Casillas	0.0080	0.013	705
2	02421-013-03-014, DW from the North	0.0055	0.0091	798

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.



Kevin J. Kemmerer  
Microscopist

jsb

**RJ Lee Group, Inc.**  
Laboratory Report

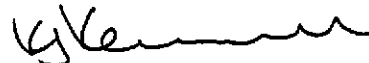
Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/12/90  
Report Date: 3/12/90  
Project No: AOC003229

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
	Location: Transo/La Coste/Bay Street			
	Job Number: 2421,013.03			
1	02421-013-03-015, Miguel Casillas	0.016	0.026	343
2	02421-013-03-016	< 0.0070	< 0.012	384

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.

  
Kevin J. Kemmerer  
Microscopist

jsb

HARDING ASSOC.

**RJ Lee Group, Inc.**  
Laboratory Report

MAR 21 1990

Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/13/90  
Report Date: 3/14/90  
Project No: AOC003249

Sample Identification	Fiber Count	Volume
RJL	Harding Lawson Associates	(liters)
	fibers/cc	95% UCL

Location: Transco/La Coste- Bay SF Job Number: 2421, 013.03

1	017, Miguel Casillas	0.0027	0.0047	1093
2	018, Downwind from the North	< 0.0020	< 0.0035	1374

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.

*David C. King*  
For Kevin J. Kemmerer  
Microscopist

jsb

**RJ Lee Group, Inc.**  
Laboratory Report

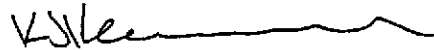
Harding Lawson Associates  
1355 Willow Way, Suite 109  
Concord, CA 94520  
Attn: Terry McManus

Samples Received: 3/14/90  
Report Date: 3/19/90  
Project No: AOC003265

Sample Identification		Fiber Count		Volume
RJL	Harding Lawson Associates	fibers/cc	95% UCL	(liters)
Location: Transco/La Coste/SF Bay		Job Number: 2421,013.03		
1	Sample #019	< 0.0027	< 0.0048	1005
2	Sample #020	< 0.0023	< 0.0040	1182

These results are submitted pursuant to RJ Lee Group's current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions and no responsibility or liability is assumed for the manner in which the results are used or interpreted.

Analysis by phase contrast microscopy per NIOSH method 7400A.



Kevin J. Kemmerer  
Microscopist

jsb













**Harding Lawson Associates**  
 1355 Wilshire Way, Suite 109  
 Concord, California 94520  
 415/887-9670  
 Telecopy: 415/887-9673

# CHAIN OF CUSTODY FORM

Lab: RJ LEA

Samplers: MIKE BRINK

Job Number: 2421, 013.03

Name/Location: TRANSO/CA COSTE - BAY ST

Project Manager: TERRY McMANUS

Recorder: [Signature]  
 (Signature Required)

ANALYSIS REQUESTED											
EPA 601/8010											
EPA 602/8020											
EPA 624/8240											
EPA 625/8270											
ICP METALS											
EPA 8015M/TPH											
										XX	PCM

SOURCE CODE	MATRIX					#CONTAINERS & PRESERV.			SAMPLE NUMBER OR LAB NUMBER				DATE				STATION DESCRIPTION/NOTES
	Water	Sediment	Soil	Oil	AIR	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Yr	Wk	Seq	Yr	Mo	Dy	Time		
61											011	003	09	0500	MIGUEL GASILLAS #=310hr		
											012				DOWN WIND #=330hr		

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS	CHAIN OF CUSTODY RECORD			
Yr	Wk	Seq					RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME	
							[Signature]	[Signature]	3/9 3:30	
							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										







DISTRIBUTION

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2200 Powell Street, 12th Floor  
Emeryville, California 94608  
Attention: Mr. Ignacio Dayrit

MJB/SJO/mlw 031339M/R40

QUALITY CONTROL REVIEWER

*Jeanne St. Hudson (for)*  
\_\_\_\_\_  
Michael J. Brink  
Staff Engineer