Soil Remediation Activities Report
Former Ransome Property
Yerba Buena Project Site
Emeryville, California

December 21, 1992
1649.07

VOLUME I OF III

Prepared for:

Catellus Development Corporation
201 Mission Street
San Francisco, California

LEVINE·FRICKE

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ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

December 21, 1992 1649.07

Ms. Susan Hugo
Alameda County Health Care Services Agency
80 Swan Way, Suite 200
Oakland, California 94621

Subject: Soil Remediation Activities Report
Former Ransome Property
Yerba Buena Project Site
Emeryville, California

Dear Ms. Hugo:

Levine•Fricke has prepared the enclosed report for your review. This report presents the results of the soil remediation activities conducted by Levine•Fricke at the former Ransome Company Property in Emeryville, California. In addition, the work performed by Aqua Resources, Inc. (ARI), on behalf of the Ransome Company has been summarized.

As you are aware, approximately 25,000 cubic yards (excavated volume) currently area stockpiled either on the Ransome Company Property or on the adjacent Yerba Buena Project Site.

The stockpiled soils generally contain less than 2,000 parts per million (ppm) total petroleum hydrocarbons (TPH) as diesel and oil, and include soil successfully aerated to established criteria for TPH as gasoline and benzene, toluene, ethylbenzene, and xylenes. These petroleum-affected soils will be contained on site in accordance with the approved March 10, 1992 Containment Plan (Levine•Fricke, 1992a). Petroleum-affected soil will be placed beneath low permeability asphalt paving in parking areas proposed for portions of the Yerba Buena Project Site, to minimize possible exposure to the affected soils and mitigate future effects to shallow ground water by reducing surface infiltration through the soil.

Based on observations of soil remediation activities conducted by ARI and on laboratory data for verification samples collected from the sidewalls and floors of excavations completed by ARI and Levine•Fricke, no additional soil remediation activities are recommended or proposed for the Ransome Company Property.

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To monitor potential future effects of petroleum-affected soils on ground water beneath the Site, ground-water samples collected from selected monitoring wells located at the Yerba Buena Project Site during periodic monitoring activities will be analyzed for TPH as oil and diesel.

If you have any questions or to provide your comments, please do not hesitate to call either of the undersigned or Jim Levine.

Sincerely,

Jenifer Beatty
Project Hydrogeologist

Jenifer Beatty for
Cynthia Barclay
Senior Project Geologist

Enclosure

cc: Don Marini, Catellus (Volume I only)
Ric Notini, Catellus (Volume I only)
Pat Cashman, Catellus (Volume I only)
Kimberly Brandt, Catellus
Lester Feldman, RWQCB

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SOIL REMEDIATION ACTIVITIES REPORT
FORMER RANSOME PROPERTY, YERBA BUENA PROJECT SITE
EMERYVILLE AND OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the soil remediation activities conducted at the former Ransome Company Property ("the Property") in Emeryville, California. The Property is located in the northwestern portion of Area B of the Yerba Buena Project Site ("the YBP Site") in Emeryville and Oakland, California (Figures 1 and 2).

During the period from October 1990 through September 1992, various remedial activities have been conducted at the Property. Portions of this work were conducted by Aqua Resources, Inc. (ARI) of Berkeley, California, on behalf of the Ransome Company, former Property occupant and operator. Other portions of the work were conducted by Levine·Fricke on behalf of Catellus Development Corporation ("Catellus"), the Property owner.

ARI prepared a July 15, 1990 "Draft Workplan for Initial Subsurface Investigation and Site Closure" (ARI, 1990a) and a January 16, 1991 "Remedial Investigation and Site Closure Plan" (ARI, 1991a). The Site Closure Plan was approved by the Alameda County Health Care Services Agency (ACHA) in a letter dated February 4, 1991, from Mr. Dennis Byrne of the ACHA to Mr. Kinear Smith of the Ransome Company (Appendix A). Soil remediation activities for the Property were conducted in accordance with these plans by ARI between June 1991 and September 1991 and Levine·Fricke between October 1991 and September 1992.

In addition, Levine·Fricke prepared a Site Remedial Plan (SRP) dated February 11, 1991 (Levine·Fricke, 1991a) and a Containment Plan for Petroleum Hydrocarbon-Affected Soils ("the Containment Plan"), dated March 10, 1992 (Levine·Fricke, 1992a), on behalf of Catellus. The ACHA reviewed Levine·Fricke's SRP and subsequently approved it in a March 5, 1992 letter to Mr. Ric Notini of Catellus (ACHA 1991; Appendix A). The plan for containing soils affected by total

petroleum hydrocarbons (TPH) at the YBP Site was verbally approved by the ACHA and the Regional Water Quality Control Board (RWQCB) on June 22, 1992, and in a letter dated June 24, 1992, from the RWQCB to Levine·Fricke (Appendix A).

This report has been prepared for the use of Catellus Development Corporation. Any use of this report by a third party shall be at such third party's own risk.

1.1 Site Description

The Ransome Company ("Ransome"), a construction firm and former asphalt batch plant, reportedly occupied the Property for more than 50 years, from approximately 1938 to 1990. Reportedly, Ransome's operations included asphalt concrete mixing, metal working, automobile repair, and assembly of torch and burner equipment (KJC, 1989).

Kennedy/Jenks/Chilton (KJC) of San Francisco, California, conducted a Baseline Environmental Assessment of the Property in 1989 (KJC, 1989). At that time, the Property yard contained seven structures, including an office, a machine/maintenance shop, four sheds, a steam cleaning shed, and a lavatory. In addition, KJC reportedly found four underground fuel storage tanks (USTs), one waste-oil tank that was partially underground, and an aboveground liquid asphalt oil tank at the Property.

In December 1989, KJC reportedly removed the USTs and submitted a tank removal report, dated April 9, 1990, to the ACHA. According to KJC, petroleum hydrocarbon staining of the underlying soil was observed at the time of tank removal. Oil stains on soil and surface structures were observed throughout the Property, especially in the machine shop, in the vicinity of the oil storage shed, near the waste-oil tank, and near the liquid asphalt oil tank (Levine·Fricke, 1990).

The buildings at the Property were demolished in June 1990 pursuant to the lease agreement between the Ransome Company and Catellus (see Figure 2).

1.2 Previous Investigation Activities

Aqua Resources, Inc. (ARI) conducted Phase I remedial investigations for the Property on behalf of Ransome during the period from October 1990 to December 1990 in accordance with its July 25, 1990 "Draft Workplan for Initial Subsurface Investigation and Site Closure" (ARI, 1990a). This Workplan was amended in an addendum dated August 23, 1990 (ARI, 1990b),

and approved by the ACHA in a letter dated September 14, 1990 (Appendix A). The results of this investigation were presented in a report prepared by ARI, dated January 16, 1991 (ARI, 1991a).

ARI concluded from the results of its investigation that soil quality at the Property had been affected by the release of various petroleum hydrocarbons, including diesel, waste oils, and gasoline. Results indicated concentrations of diesel and oil up to 2,700 ppm and 6,700 ppm, respectively. Gasoline reportedly was detected at concentrations of 9.3 ppm or less.

As part of its investigation, ARI also installed three shallow ground-water monitoring wells on the Property in November 1990. Ground-water quality results indicated concentrations of total petroleum hydrocarbons (TPH) as gasoline (TPHg) up to 0.460 parts per million (ppm) and benzene up to 0.260 ppm.

Based on soil-quality results observed during its investigation, ARI initiated soil removal activities in accordance with its site closure plan dated January 16, 1991 (ARI, 1991a).

1.3 Objectives of Soil Remediation Activities

The objectives of soil remediation activities conducted for the Property by ARI and Levine·Fricke were to further characterize and assess the extent of petroleum-affected soil at the Property, and reduce concentrations of petroleum compounds in soils to concentrations approved by the ACHA. To achieve these objectives, ARI and Levine·Fricke conducted soil excavation, verification sampling and analysis, backfilling, compaction, and characterization and treatment of excavated soils. Criteria for evaluating remedial efforts were developed based on the activity being conducted: excavation, backfilling, or aeration. These criteria are discussed below.

1.3.1 Excavation Criteria

ARI proposed that affected soils be removed from the excavations until sidewall and floor samples indicated that remaining soils contained concentrations of less than 10 ppm TPHg, 100 ppm TPH as diesel (TPHd), and 0.005 ppm for combined benzene, toluene, ethylbenzene, and xylenes (BTEX compounds). ARI proposed these "excavation criteria" in its January 1991 report. However, following discussions between Mr. Dennis

Byrne of the ACHA and representatives of Levine·Fricke and ARI, the excavation criteria adopted for soils at the Property were 10 ppm TPHg, 100 ppm TPHd, 1 ppm BTEX compounds (combined), and 1,000 ppm oil and grease.

1.3.2 Aeration Criteria

When ARI aerated soils on site, aeration criteria were the same as criteria used for the backfill materials as discussed in Section 1.3.3.

Soils aerated by Levine·Fricke contained low concentrations (less than 2,000 ppm) of diesel and oil. Following discussion among the ACHA, the RWQCB, and Levine·Fricke on February 13, 1992, 10 ppm TPHg, 1 ppm for total ethylbenzene, toluene, and xylenes, and below laboratory detection limits for benzene were agreed upon as aeration criteria for gasoline- and BTEX compound-affected soils. In accordance with the Containment Plan, following aeration of affected soils to below these concentrations, the soils were to be contained on site.

1.3.3 Backfill Criteria

ARI proposed and the ACHA approved 10 ppm TPHg, 10 ppm TPHd, 500 ppm oil and grease, and less than the detection limit for combined BTEX compounds as backfill criteria for the Property. Soils excavated at the Property and treated to residual concentrations of these compounds below these levels could be used as backfill materials.

2.0 ACTIVITIES CONDUCTED AT THE PROPERTY BEFORE SEPTEMBER 1991

This section describes soil remediation activities conducted by ARI for the Property during the period from June 1991 to September 1991.

2.1 Soil Removal Activities

ARI initiated soil removal activities on June 6, 1991, at the Property by excavating and stockpiling some of the petroleum-affected soil on site, in accordance with recommendations presented in its January 16, 1991 report. ARI's work included excavating and removing diesel- and oil-affected soils for off-site treatment, aerating gasoline-affected soils on site for possible reuse as backfill in excavations, and stockpiling soil on the Property and adjacent YBP Site.

H.K. Grading Contractors, Inc., of Livermore, California, was the excavation contractor working under the direction of ARI. A Levine·Fricke geologist or engineer was on site continuously during excavation activities to observe work on behalf of Catellus and to collect split soil samples (split samples), when appropriate, to verify soil analytical results. Visual observations indicated the work was performed by ARI in compliance with the Site Health and Safety Plan included in ARI's July 25, 1990 Workplan and in accordance with recommendations included in the ARI January 1991 report (ARI, 1990a and 1991a).

Apparently using soil-quality data obtained during its subsurface investigation, ARI marked the approximate areal boundaries of affected soils before excavation commenced. Affected soils were then excavated using a track-mounted excavator. A water truck was used for dust control purposes during excavation.

As excavation progressed, Levine·Fricke observed ARI personnel periodically monitoring the soil with a photoionization detector (PID) for the approximate concentrations of volatile organic compounds (VOCs) in the soil vapor. When excavation approached the proposed boundaries, PID readings were recorded by ARI for soil collected from the excavation sidewalls and floor. These readings reportedly were used by ARI personnel to assess whether petroleum-affected soil had been removed.

Excavated petroleum-affected soils were top loaded onto a front-end loader and deposited in stockpiles on plastic sheeting located on the Property and the adjacent YBP Site, or on aeration beds. Levine·Fricke observed ARI's contractor placing soils suspected to be affected by gasoline and BTEX compounds (based on PID readings, observations, and analytical data obtained during remedial investigations) on aeration beds located on the YBP Site, adjacent to the Property.

Ultimately, ARI estimated that approximately 17,200 cubic yards (in-place volume based on calculations from excavation diagrams) of petroleum-affected soils were excavated from several areas at the Property under ARI's supervision. The approximate extent of ARI excavations are shown on Figure 3.

During soil removal in excavations K and L in August 1992 (Figure 3), ARI and its contractor encountered two concrete vaults, two concrete pads, and a concrete trough. The first concrete vault, which measured approximately 7 feet by 3 feet by 1.5 feet deep, was encountered on August 15, 1991, in excavation L at approximately 3 to 4 feet below ground surface

(bgs). The second concrete vault, which measured approximately 14 feet by 16 feet by 3 feet deep, was encountered by ARI on August 19, 1991, in the southwest corner of excavation K at approximately the same depth. Levine•Fricke personnel observed that both vaults were filled with oily soil.

The two concrete pads were encountered by ARI on August 2 and 6, 1991, in excavations L and K, respectively, at approximately 0.5 and 2 feet bgs, respectively. The pad in excavation L measured approximately 14 feet by 16 feet. The pad in excavation K measured approximately 39 feet by 12.5 feet.

The concrete trough was encountered by ARI on August 26, 1991, adjacent to the south wall of excavation K. The trough was observed to be approximately 29 feet long, 8 to 9 feet wide, and 3 feet deep, and the top of the trough was approximately 5 feet bgs.

The concrete structures discussed above were broken into smaller pieces, with the excavator operated by H. K. Grading as directed by ARI. The concrete rubble was then excavated from the Property and transported off site, reportedly to a Class III landfill. The oily soil was observed to be excavated from the vaults and stockpiled on site.

In September 1991, ARI and its contractor encountered a third concrete vault, which measured approximately 9 feet by 9 feet by 9 feet deep, adjacent to the east wall of excavation A'. Levine•Fricke personnel observed that the vault was filled with oily water, soil, and debris. ARI personnel pumped the water (approximately 40 gallons) out of the vault and into a 55-gallon drum for temporary on-site storage. The soil and debris were observed to be excavated and stockpiled on site; however, the vault was not removed at that time.

2.2 Verification Sampling and Analysis

To verify that soils containing concentrations of petroleum hydrocarbons exceeding excavation criteria had been removed, ARI personnel collected soil samples for chemical analysis from the sidewalls and floor of each excavation. In areas where analytical results indicated the presence of petroleum hydrocarbons in excess of the approved excavation criteria, additional soil was excavated and additional samples were observed to be collected from the newly excavated sidewalls and/or floor of the excavation. This process of excavating and resampling was reportedly repeated until laboratory

results indicated concentrations of petroleum hydrocarbons below the excavation criteria for the Property. A Levine·Fricke engineer or geologist was on site to observe excavation and resampling activities.

In excavations more than 5 feet deep, ARI obtained soil samples from the sidewalls and floor of the excavation using an excavator bucket. Soil samples were collected directly from the bucket by pounding 2-inch-diameter brass tubes into the bucket with a rubber mallet. In excavations that were less than 5 feet deep, ARI personnel entered the excavations and collected soil samples directly from the excavation sidewall or floor using the same technique. After the tube was filled with soil, the ends of the tube were capped with aluminum foil and plastic caps and sealed with tape. The samples were individually labeled, and placed into a chilled ice chest for transportation to Curtis & Tompkins, Ltd., Analytical Laboratories of Berkeley, California, reportedly following chain-of-custody protocol.

Soil samples were submitted to the analytical laboratory for analysis of total volatile hydrocarbons (TVH) as gasoline and extractable petroleum hydrocarbons (EPH) as kerosene and diesel using modified EPA Method 8015, BTEX using EPA Method 8020, and oil and grease using Standard Methods 5520e and f. Laboratory analysis conducted for each sample varied depending on the where the soil sample was collected and the contaminants suspected in that location based on previous analytical results. Reportedly, samples generally were submitted on a 5-day turnaround for analysis.

Levine·Fricke personnel collected soil samples from the same sampling locations as were selected by ARI personnel (split samples). Levine·Fricke's soil sampling procedures are described in Appendix B. Levine·Fricke sent its soil samples by courier to Quanteq Laboratories (formerly Med-Tox Associates), Inc. of Pleasant Hill, California, for laboratory analysis, following chain-of-custody protocol. Approximately 25% of the collected split-samples were analyzed to verify the analytical results reported by ARI.

A total of 222 verification soil samples were collected by ARI and Levine·Fricke from the final floor and sidewalls of the completed excavations, as indicated on Figure 3. ARI collected and analyzed 185 verification soil samples and Levine·Fricke collected and analyzed 37 final soil samples. A summary of the analytical results for verification samples is presented in Table 1. Laboratory data sheets are presented in Volume II, Appendix I.

ARI did not achieve the cleanup goals set forth in its closure plan (ARI, 1991b). Analytical results for verification samples from the ARI excavation activities indicated TPHg at concentrations exceeding excavation criteria (10 ppm) in 4 of the 185 samples (concentrations ranging from 11 ppm to 120 ppm). BTEX compound concentrations also were detected above the combined 1 ppm excavation criterion in 2 of the 185 samples. Soil in the vicinity of these sample locations (FW-6-5, FN-3-3, and KN-1-8, JN-55-9.5; Figure 3) were later excavated by Levine·Fricke (see Section 3.0). Concentrations of diesel and oil and grease were below excavation criteria in all samples collected and analyzed. The analytical results for split-samples collected by Levine·Fricke generally were in agreement with results reported by ARI, with the exception of sample JN-53-9.5, which indicated TPHg at 32 ppm and a BTEX compound combined concentration of 6.95 ppm. The soil in the vicinity of this sample location was later excavated by Levine·Fricke.

2.3 Backfilling and Compaction

Under the direction of ARI, H.K. Grading backfilled completed excavations (areas A1, A2, B2, B3, and portions of areas D, J-1, and J-2; Figure C-1) during the period from September 3 through September 13, 1991 (Phase I). A Levine·Fricke engineer or geologist was continuously on site to observe backfilling and compaction activities and to conduct field compaction tests on behalf of Catellus. A detailed description of backfill and compaction procedures is included in Appendix C.

Completed excavations were backfilled with clean imported fill material and soils from the Property that were characterized as suitable for backfill material based on the established criteria. Imported fill material was supplied by Port Costa Materials from its quarry. To check that imported material met backfill criteria, ARI reportedly collected one soil sample per day from the backfill material for chemical analysis. Analytical results for these soil samples are contained in Volume III, Appendix J. Backfill material specifications and compaction requirements were presented in ARI's reports entitled "Proposed Excavation Backfill Procedure, 4030 Hollis Street, Emeryville," dated July 26, 1991 and "Response to Levine·Fricke Backfill Letter, Proposed Excavation Backfill Procedure, 4030 Hollis Street, Emeryville," dated August 26, 1991.

Ransome retained Construction Materials Testing, Inc. (CMT), of Concord, California, to conduct field compaction services from September 3 through 13, 1992. All backfill materials were submitted to Woodward-Clyde Consultants of Pleasant Hill, California, for laboratory compaction testing ASTM D1557. Results of these tests are presented in Table C-1 (Phase I) in Appendix C.

Figure C-1 presents the approximate extent of completed excavations backfilled and compacted as directed by ARI. Results of the field compaction tests, conducted by Levine·Fricke to monitor compaction activities, are presented in Table C-2 in Appendix C.

Based on observations made by Levine·Fricke personnel, monitoring, and the results of field density compaction tests conducted by a Levine·Fricke geotechnical engineer, it appears that the soil compaction work was conducted in accordance with the specifications and requirements outlined in the ARI reports discussed above.

2.4 Characterization, Treatment, and Containment of Excavated Soils

Reportedly, based on visual observations of soils during excavation, PID readings, and previous soils data obtained for the Property, soils excavated by ARI were either placed on aeration beds for on-site treatment of gasoline-affected soils (approximately 5,480 cubic yards [estimated based on stockpile volume]), transported off site for thermal treatment (approximately 4,100 cubic yards [stockpile volume]), or stockpiled on plastic sheeting (approximately 12,500 cubic yards [stockpile volume]). The locations of aeration beds and stockpiled soils are shown in Figure 4.

Under ARI's direction, approximately 5,480 cubic yards of gasoline-affected soil were aerated on site in accordance with recommendations included in ARI's 1991 report and approved by the ACHA. A Levine·Fricke engineer or geologist monitored aeration activities on behalf of Catellus. Aeration was observed to be conducted in accordance with Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 40.

Aeration bed SP-10 reportedly was constructed on the adjacent YBP Site by placing 6 inches of sand on the native soil and covering the sand with 6-mil visquine. A second layer of sand

was placed over the visquine before placement of gasoline-affected soils. Aeration bed SP-19, constructed in the eastern portion of the Site, was observed to be constructed by placing visquine directly on the asphalt in that area (Figure 4).

Soils were placed in approximately 2-foot-thick lifts on aeration bed SP-10, and in approximately 3-foot-thick lifts on aeration bed SP-19. Levine·Fricke personnel observed that the soils placed on the aeration beds were turned periodically using a roto-tiller, tractor, and excavator to enhance the aeration process. ARI collected samples from the aeration beds when PID readings for the aerated soil indicated reduced concentrations of VOCs. The process of turning the soil and resampling the aeration beds for analysis was repeated until concentrations of gasoline and BTEX were below aeration criteria. ARI personnel collected soil samples in accordance with sampling procedures discussed in Section 2.2, except that in some instances a trowel was used to pack the soil into the brass tube.

Soil samples were submitted to Curtis & Tompkins, Ltd., on a 48-hour turnaround for analysis. The samples were composited by the analytical laboratory before analysis. ARI personnel collected soil samples from aerated soils to assess whether these soils could be used as backfill material. To assess whether the aerated soil had been adequately characterized by ARI, Levine·Fricke evaluated analytical results of soil samples obtained by ARI (see Section 3.5). Based on that evaluation, 11 additional discrete soil samples were collected by Levine·Fricke for chemical analysis. The analytical results for soils aerated by ARI, some of which were subsequently used for backfill material (approximately 2,500 cubic yards [stockpiled volume]) by Levine·Fricke following additional analysis, are presented in Table 2. Laboratory certificates are contained in Volume III, Appendix K.

Soils that ARI suspected contained concentrations of diesel and/or oil and grease exceeding the approved backfill criteria (based on visual observations during excavation and soil-quality data from previous investigations) reportedly were transported off site to Port Costa Materials in Port Costa, California, for thermal treatment. Approximately 4,100 cubic yards (stockpiled volume) of soil reportedly were transported off site. The Remediation Certificate and Certificates of Analysis for the treated soils are contained in Appendix D.

Approximately 15,400 cubic yards (stockpiled volume) of petroleum-affected soils excavated by ARI currently are stockpiled at the Property. These soils will be contained on the YBP Site in accordance with the approved Containment Plan (Levine·Fricke, 1992a).

2.5 Summary

ARI conducted a Phase I subsurface investigation of the Property between October and December 1990. Using results from this investigation, ARI proposed soil remedial activities for the Property to reduce residual petroleum concentrations in soils.

ARI initiated soil removal in June 1991 on behalf of Ransome. ARI and its subcontractor, H. K. Grading Contractors, Inc., excavated a total of approximately 17,200 cubic yards (in-place volume [estimated by ARI]) from the areas indicated on Figure 3. Approximately 4,100 cubic yards (stockpiled volume) of this soil were transported off site for thermal treatment, approximately 5,480 cubic yards (stockpiled volume) were aerated on site to aeration criteria, and approximately 12,500 cubic yards (stockpiled volume) were stockpiled either on site or on the adjacent YBP Site. ARI stopped work at the Property in September 1991 before the remediation was completed.

During Ransome's partial remediation efforts, Levine·Fricke observed ARI's soil removal activities on behalf of Catellus. This afforded Levine·Fricke the opportunity to identify areas that required further investigation or remedial efforts. When Ransome directed ARI to stop work, Catellus instructed Levine·Fricke to complete remedial efforts at the Property. At that time, Levine·Fricke was aware that the cleanup criteria had not been met in the following areas:

- one concrete vault, which previously had been filled with oily soil and/or oily water and debris, was present adjacent to the east wall of excavation A' (Figure 3)
- soils containing chemical concentrations above excavation criteria were still present in the northern portion of the Property
- stockpiled soils, including aerated soils, had not been adequately characterized, treated, or disposed of

The activities Levine·Fricke conducted at the Property to address these areas of concern and other project-specific development areas are discussed in Section 3.0.

3.0 ACTIVITIES CONDUCTED AT THE PROPERTY AFTER SEPTEMBER 1991

This section describes soil investigation and remediation activities conducted by Levine·Fricke during the period from October 1991 to September 1992.

3.1 Objectives

Levine·Fricke conducted further soil remedial activities at the Property to accomplish the following:

- assess the extent of petroleum-affected soil in the northern portion of the Property ("the Northern Area"),
- reduce concentrations of petroleum compounds in soil to ACHA-approved concentrations by continuing soil removal activities
- characterize excavated soils for subsequent treatment and/or containment in accordance with the approved Containment Plan (Levine·Fricke 1992a).

3.2 Soil Investigation - Northern Area

To complete the remediation work begun by ARI and to further evaluate the lateral and vertical extent of petroleum hydrocarbons in soils at the Property and just north of the Property, Levine·Fricke directed the excavation of 18 test pits at various locations on the Property, and drilling of 2 soil borings on the Property and 10 soil borings north of the Property along the northern fence (Figure 5).

ARI previously had excavated eight test pits in the Northern Area in July 1991. The analytical results for the samples collected from ARI's test pits are presented on Figure 5 and in Table 3. The results indicated that ARI had not yet defined the extent of soils containing chemicals exceeding cleanup criteria along the northern border of the excavation area.

Test pits TP-1 through TP-5 and TP-8 through TP-13 were excavated between October 16 and 21, 1991. Test pits TP-14 through TP-20 were excavated on January 21, 1992, and February 4, 1992, to assess the lateral and vertical extent of petroleum hydrocarbons in the vicinity of the concrete vault in excavation A'. Test pits corresponding to designations TP6 and TP7 were not excavated. Test pits were excavated under the supervision of a Levine·Fricke engineer or geologist. The vault had been observed to be filled with oily water, soil,

and debris. To assess whether petroleum-affected water in the vault had affected soils in the vicinity, test pits were excavated on the three sides of the vault not previously excavated (Excavation A'; Figure 5). Off-site soil borings SB1 through SB10 and on-site borings SB12 and SB14 were drilled under the supervision of a Levine•Fricke engineer on November 7 and 8, 1991.

Field Procedures

Field procedures used during soil boring drilling are described in Appendix E. Soil samples were collected in accordance with procedures contained in Appendix B. Soil samples were submitted to Precision Analytical Laboratory (PAL), Inc. of Richmond, California, for analysis of TPHg, TPHd, and TPH as oil (TPHo) using Modified EPA Method 8015; BTEX compounds using EPA Method 8020; and total hydrocarbons using Standard Method 5520f, 17th Edition. Soil samples were submitted to the laboratory on a 48-hour turnaround for analysis.

Analytical Results

Analytical results for soil samples collected from test pits by Levine•Fricke and ARI and from soil borings by Levine•Fricke are presented in Table 3 and on Figure 5. Results for samples collected from soil borings located off site, north of the northern Ransome fence, indicated that this area does not appear to have been significantly affected by petroleum hydrocarbon releases at the Property.

As indicated on Figure 5, petroleum compounds were detected above the excavation criteria in seven of the on-site test pits and in soil boring SB14. A summary of analytical results is presented below:

- TPHg was detected in soil samples collected from TP2, TP3, TP5, and SB14 at concentrations ranging from 12 ppm to 220 ppm, which exceeded the excavation criterion of 10 ppm.

- BTEX compounds were detected in TP1, TP2, TP3, TP4, TP5, and SB 14 at combined concentrations ranging from 1.19 ppm to over 150 ppm, which exceeded excavation criterion of 1 ppm (combined).

- TPHo was detected in TP14 and TP18 at concentrations up to 1,400 ppm, which exceeded the excavation criterion for oil and grease of 1,000 ppm.

- TPHd was detected in TP18 at concentrations up to 160 ppm, which exceeded the excavation criterion of 100 ppm.

Soils located in the vicinity of test pits TP1, TP2, TP3, TP4, TP5, and SB14 appeared to be primarily affected by gasoline and BTEX compounds. The depth of affected soil generally ranged from 8 feet bgs to 11.5 feet bgs. Diesel- and oil-affected soil was generally located in the vicinity of test pits TP14 and TP18 at depths ranging from 4 to 8 feet bgs. Laboratory certificates are contained in Volume III, Appendix L.

3.3 Soil Removal Activities - Northern Area

Soil removal activities were conducted during the period from December 16, 1991 through March 5, 1992, by Plant Reclamation of Richmond, California, as directed by a Levine·Fricke geologist or geotechnical engineer. The work was performed in accordance with ARI's 1990 Workplan (ARI, 1990a) and the Site Health and Safety Plan prepared by Levine·Fricke (Levine·Fricke, 1991a). As stated previously, the objective of soil excavation activities was to remove soils from the Property that contained concentrations of petroleum hydrocarbons above excavation criteria approved by the ACHA (discussed in Section 1.3.1). Approximately 9,600 cubic yards of additional petroleum-affected soils were excavated from the Northern Area under the observation of Levine·Fricke. The approximate areal extent of soil excavated in the Northern Area is shown on Figure 6.

3.3.1 Soil Excavation

Site preparation before soil excavation consisted of marking the proposed excavation limits based on soil-quality data obtained during previous investigations and preparing areas for placement of excavated soils. Two areas located on the western end of the Property, near the proposed excavation boundaries, were graded smooth and lined with 6-mil plastic sheets to prevent petroleum-affected soil from contacting unaffected soil on the YBP Site. During excavation, two additional areas on the eastern portion of the YBP Site were prepared for stockpiling soils. To inhibit possible storm-water runoff, the perimeter of the YBP Site was bermed using hay bales and imported soil. Hay bales also were placed around a storm drain located in the central portion of Area B of the YBP Site to inhibit surface runoff from entering the storm drain.

Soil was excavated using a track-mounted excavator and excavated soils were top loaded onto ten-wheel dump trucks and deposited on plastic lining in stockpiles. Excavation continued until PID readings for excavated soil approached zero, visual observations indicated reduced petroleum hydrocarbon concentrations, and/or backfill material from excavations completed by ARI were encountered. Soil samples were then collected for laboratory analyses from the excavation sidewalls and/or floor to confirm the PID readings. Soil samples were collected in accordance with field procedures described in Appendix B.

Soil samples were submitted to PAL for TPHg, TPHd, and TPHo using Modified EPA Method 8015; BTEX compounds using EPA Method 8020; and total hydrocarbons using Standard Method 5520f, 17th Edition. Samples were generally submitted to the laboratory on a 48-hour turnaround for analysis. Areas were excavated further if soil samples indicated concentrations of petroleum hydrocarbons above the excavation criteria. The process of excavating and sampling was repeated until laboratory results indicated that residual concentrations were below excavation criteria. Analytical results for verification soil samples collected in the Northern Area are discussed in Section 3.3.2.

Abandonment of ARI Monitoring Wells W-1, W-2, and W-3

The three monitoring wells (W-1, W-2, and W-3) installed by ARI in November 1990 were destroyed during subsequent soil remediation activities. Wells W-1 and W-2 were abandoned on October 22 and 23, 1991, by carefully excavating soils surrounding the wells using a backhoe. Soils were excavated to a depth of 20 feet bgs and the well casing was pulled out of the ground using a rope tied to the backhoe bucket and around the well casing. The bore hole from the depth of the well (24 feet bgs) to 20 feet bgs was filled with clean imported soil and compacted. The remaining excavation was backfilled and compacted as described in Section 3.5.

During grading at the Property conducted by Ransome and ARI, soil was deposited in the vicinity of monitoring well W-3, burying the well and concealing its location. On May 4, 1992, a backhoe operated by Plant Reclamation and directed by a Levine·Fricke geologist, moved soils in the approximate location of well W-3 to expose the well. The well was observed to be damaged and appeared to be filled with dirt. On May 6, 1992, the well was abandoned using hollow-stem-auger drilling equipment. Well construction activities involved

drilling out the well materials and sealing the evacuated boring by pumping a cement-bentonite slurry through a tremie pipe from the bottom of the boring to the ground surface (Levine·Fricke, 1992c).

Concrete Structures Encountered During Excavation

On December 26, 1991, a concrete trough was encountered along the northern Ransome fence. The trough (approximately 52 feet long and 8 feet deep) was oriented in a north-south direction, with the northern end of the trough adjacent to the northern Ransome fence. Soil was excavated from the sides of the trough and the concrete was broken in January 1992 using a pneumatic hammer attached to the excavator operated by Plant Reclamation. The concrete rubble was subsequently excavated and stockpiled on the YBP Site on plastic sheeting. The perimeter of the concrete stockpile was bermed to minimize surface runoff.

Because of heavy precipitation during December 1991 and January 1992, surface runoff, apparently facilitated by the sloped excavation walls, ponded in the Northern Area in the vicinity of the concrete trough, west of Excavation H. A sheen was observed on the surface of the water, presumably from contact with gasoline-affected soil not yet excavated from the northern wall of the excavation or from beneath the concrete trough. H & H Ship Service Company (H&H) of San Francisco, California, pumped approximately 15,000 gallons of water out of the excavation and into a vacuum truck for transportation to a recycling facility on January 27 and 29, 1992. Hazardous waste manifests are attached in Appendix F.

In February 1992, Plant Reclamation used a pneumatic hammer to break a concrete vault located adjacent to excavation A' that had been encountered by ARI in September 1991 (Section 2.1). The concrete rubble was subsequently excavated and is currently stockpiled on the Property.

Because of heavy precipitation during February 1992, surface water ponded in the vicinity of the former concrete vault in excavation A'. A sheen was observed on the ponded water, presumably from contact with petroleum-affected soil not yet excavated in this area. On March 4, 1992, H&H pumped 2,600 gallons of water from this area into a vacuum truck for transportation to a recycling facility.

Manifests for water transported by H&H are contained in Appendix F.

3.3.2 Verification Sampling and Analysis

To verify that the Northern Area excavation was complete and that petroleum-affected soil had been removed, one sidewall soil sample was collected by Levine·Fricke approximately every 20 linear feet, and one floor sample was collected approximately every 400 square feet. A total of 57 sidewall samples and 37 floor samples were collected by Levine·Fricke for chemical analysis of TPHg, TPHd, and TPHo using Modified EPA Method 8015, BTEX compounds using EPA Method 8020, and total hydrocarbons using Standard Method 5520f, 17th Edition. Analytical results for these samples are presented in Table 4. Laboratory certificates are presented in Volume III, Appendix M.

Soil samples were not collected along the northern border of former ARI excavations H and J because clean backfill material from those excavations was encountered.

Soil was then removed from the excavation in the vicinity of 21 sampling locations where TPHg and BTEX concentrations were above the excavation criteria. A total of 73 samples represent the final excavation boundaries. Final verification soil sample locations and analytical results are presented on Figure 7.

Of the 73 samples collected, TPHg was detected at concentrations above the excavation criteria in 3 samples (SW-38, SW-41, and SW-42) collected from the northern boundary of the Property at concentrations ranging from 45 ppm to 90 ppm (Figure 6). Concentrations of benzene ranged from 0.08 ppm to 0.70 ppm and toluene, ethylbenzene, and xylene concentrations ranged from 14 ppm to 20.6 ppm in the same three samples. Based on the proximity of the 3 sample locations to an existing parking lot structure located immediately north of the Property, and the possibility that additional excavation could potentially undermine the existing structure, the soil was left in place.

3.4 Characterization and Management of Excavated Soil

Section 3.4.1 describes methods used by Levine·Fricke to characterize soil excavated from the Northern Area under the direction of Levine·Fricke and from other areas on the Property under the direction of Aqua Resources. Section 3.4.2 describes aeration of gasoline-affected soils excavated from the Northern Area.

3.4.1 Characterization of Excavated Soil

Soils Excavated by Levine·Fricke

Characterization of soils excavated from the Northern Area by Levine·Fricke was completed at the time of excavation. The soil excavated from the Northern Area was characterized as primarily gasoline-affected based on PID readings, observations during excavation, analytical data for soil samples submitted to the laboratory on a "rush" turnaround time, and previous analytical data obtained during excavation activities conducted by ARI and Levine·Fricke in adjacent areas.

PID readings were used to facilitate segregation of soil during excavation. Soils registering less than 100 ppm on the PID (generally from depths of 4 feet bgs or less) were considered "lesser-affected" soil and were placed in two stockpiles: one on the Property and one on the east portion of the adjacent YBP Site. Soils registering greater than 100 ppm on the PID (generally from depths ranging between 5 and 11 feet) were considered to be affected by gasoline and also were placed in two stockpiles that were separated from the lesser affected soil: one on the Property and one on the eastern portion of the YBP Site.

Gasoline-affected soil excavated from the Northern Area by Levine·Fricke were subsequently aerated on site, as discussed in Section 3.4.2.

Soil Excavated by Aqua Resources

To characterize approximately 15,000 cubic yards (stockpiled volume) of soil previously stockpiled on the Property under the direction of ARI, Levine·Fricke personnel collected 321 soil samples during the period from October 15 through November 7, 1991.

The soil samples submitted for chemical analysis were composites of three to four individual samples placed into one brass tube. One composite sample was submitted for approximately 50 cubic yards of soil. Soil samples were collected and prepared for transportation to the analytical laboratory by Levine·Fricke personnel according to the standard methods and protocols presented in Appendix B.

The soil samples were submitted to PAL for analysis of TPHg, TPHd, and TPHo using modified EPA Method 8015; total oil and grease using EPA Method 5520e; and TPH using Standard Method 503E, 16th Edition. Twenty of these samples also were analyzed for BTEX compounds using EPA Method 8020.

A summary of analytical results for soil samples collected from ARI stockpiles are presented in Table 5. The analytical results of stockpiled soils indicate that soils excavated by ARI and currently stockpiled on the Property contain concentrations of diesel and oil exceeding backfill criteria (Section 1.3.3).

Diesel was detected in 54 samples at concentrations ranging from 10 ppm to 2,000 ppm, which is above backfill criteria of 10 ppm. Oil was detected in 13 samples at concentrations exceeding the backfill criteria of 500 ppm, ranging from 560 ppm to 2,500 ppm. However, results for oil analysis using EPA Method 8015 represent only the petroleum component of oil. In response to ACHA requests that soil be analyzed using an analytical method that screens for total oil and grease compounds (including animal fat and/or vegetable oil components of oil), nine soil samples were randomly selected for oil and grease analysis using EPA Standard Method 5520 for total oil and grease. Oil and grease were detected in 8 of the 9 samples at concentrations ranging from 200 ppm to 17,000 ppm. Laboratory certificates are contained in Volume III, Appendix N.

Based on these results, the soils excavated from the Property were characterized as oil- and diesel-affected. Therefore, these soils will be contained on site in accordance with the approved Containment Plan, as discussed in Section 4.0.

3.4.2 Aeration of Gasoline-Affected Soil Excavated from the Northern Area

Based on PID measurements, observations, and analytical results for soil samples collected from previous excavations completed by ARI, open aeration was chosen as the best method for remediation of gasoline-affected soil excavated from the Northern Area. Aeration of soils was conducted in compliance with BAAQMD Rule 8, Regulation 40. The gasoline-affected soils were aerated on site to reduce gasoline and BTEX concentrations to aeration criteria of 10 ppm TPHg, 1 ppm for total ethylbenzene, toluene, and xylenes, and below laboratory detection limits for benzene, which had been verbally approved by the ACHA and the RWQCB in a meeting with Levine·Fricke and Catellus on February 13, 1992 (Section 1.3.2).

Field Procedures

Plant Reclamation conducted the on-site aeration activities. To accommodate aeration beds, Plant Reclamation moved stockpiles SP-10 and SP-19 (former ARI aeration beds) to new locations (Figures 4 and 8) between May 11 and May 15, 1992. As shown in Figure 8, six aeration beds were constructed on the Property. Stockpiled soils that registered greater than 100 ppm on the PID at the time of excavation were placed on aeration beds 1, 2, 4 and 6. The remaining soil was placed on aeration beds 3 and 5. Aeration bed construction is described in Appendix G.

Aeration activities were initiated on May 15, 1992, and approximately 9,600 cubic yards of soil were aerated. Soils were turned periodically using two excavators with "grappler" extensions to enhance the aeration process. The aeration process periodically was monitored using a PID.

One sample for every 50 cubic yards of aerated soil was collected in accordance with procedures described in Appendix B and using a "grid approach" as described in Appendix F. A total of 218 soil samples were collected from the six aeration beds. Soil samples (SS-1 through SS-50) were collected in May 1991, and of these samples, 30 (SS-1 through SS-30) were analyzed. Based on the results for these samples, soils were turned for further aeration. When PID readings of the aerated soils indicated that the concentrations of VOCs had dropped significantly, the remaining 168 samples (SS-51 through SS-218) were collected. The sampling occurred during the period from July 17 to August 28, 1992.

Samples were delivered by courier to PAL for analysis of TPHg and BTEX using EPA Methods 8015/8020. Soil sample SS-154-7D is a duplicate sample and was not analyzed. Samples SS-1 through SS-30 also were analyzed for TPHd and TPHo using Modified EPA Method 8015. Analytical results are discussed below.

Analytical Results

Analytical results for 196 soil samples collected from the aeration beds and submitted for chemical analysis are summarized in Table 6. Analysis of soil samples collected from aerated soils indicated the following:

- TPHg exceeding 10 ppm was detected in only eight samples (at concentrations ranging from 11 ppm to 110 ppm)

- Benzene exceeding the excavation criterion of 0.005 ppm was reported in only eight samples at concentrations ranging from 0.009 ppm to 0.045 ppm.

- The combined concentration of toluene, ethylbenzene, and xylenes exceeding the aeration criterion of 1 ppm was detected in only one sample (sample SS-8-7A) at 4.95 ppm.

- The highest concentrations of TPHg and BTEX were detected in samples collected during May 1992 before final soil mixing.

These sample results were evaluated using guidelines outlined in Chapter 9 of the Environmental Protection Agency Office of Solid Waste Management Document SW-846, Test Methods for Evaluating Solid Waste (hereafter "EPA SW-846"), as described in Appendix H. The results of this evaluation indicate that a sufficient number of samples have been collected from the aeration beds to adequately characterize (with an 80 percent confidence level) the aerated soils as suitable for backfill material with respect to gasoline and BTEX concentrations. Laboratory certificates are contained in Volume III, Appendix O.

3.5 Backfill and Compaction

Excavations completed by ARI and Levine·Fricke were backfilled by Plant Reclamation, of Richmond, California, during the period from October 15, 1991 through May 29, 1992 (Phases II, III and IV). A Levine·Fricke field engineer was on site during backfill and compaction activities to monitor fill placement and compaction, and to conduct field compaction tests. A detailed description of backfill and compaction procedures is included in Appendix C. Figures C-1 and C-2 show the approximate locations of completed excavations backfilled and compacted as directed by ARI and Levine·Fricke.

Clean imported fill and 2,500 cubic yards of the 5,480 cubic yards of soil aerated by ARI were used as backfill in completed excavations. Backfill material specifications and compaction requirements are discussed in Section 2.3.

To assess whether the aerated soil had been adequately characterized by ARI, Levine·Fricke evaluated analytical results for soils samples previously collected from aeration beds using EPA SW-846. Based on this evaluation, it was determined that 11 additional confirmatory soil samples needed to be collected and analyzed. These samples were collected

4.1 Soils

In accordance with the Containment Plan, petroleum-affected soil will be contained on site beneath proposed building pads and/or in areas to be covered with asphalt or concrete (parking lots). Specifically, diesel- and oil-affected soil excavated from the Property and currently stockpiled on the Property and the YBP Site will be placed in parts of the Property to be covered by asphalt parking areas proposed for east of Hollis Street (see Figure 4 of the Containment Plan). Placement of the soils beneath asphalt and/or concrete will minimize possible exposure to the affected soils and mitigate future effects to shallow ground water by reducing surface infiltration through the soil. It is anticipated that the soils will be placed beneath the parking lots at the time of site development. To inhibit possible surface runoff before site development, the stockpiled soils are currently being covered using 10-mil plastic sheeting and bermed appropriately.

4.2 Ground-Water Monitoring

To assess the effects on shallow ground water of petroleum-affected soils at the Property, a ground-water investigation was conducted for the Property in accordance with the Work Plan prepared by Levine·Fricke dated April 15, 1992 (Levine·Fricke, 1992b). Results of the investigation indicated that shallow ground water beneath the Property has not been significantly affected by petroleum hydrocarbons. Monitoring well locations and ground-water quality results for wells installed by Levine·Fricke and ARI are presented on Figure 9. As indicated on Figure 9, no TPHg was detected in any of the wells installed by Levine·Fricke during two rounds of sampling conducted in May 1992. Benzene was detected at a very low concentration (0.0004 ppm) in wells LF-25 and LF-27 during the first round of sampling, but was below detection limits in the second round. TPHo and total recoverable hydrocarbons were detected in well LF-25 and off-site well LF-16 at concentrations of 6.6 ppm or less.

In accordance with the Containment Plan, ground-water samples will be collected on a quarterly basis from selected wells in Area B of the YBP Site for analysis of TPHo and TPHd to monitor potential future effects of petroleum-affected soils on ground water beneath the Property. Quarterly monitoring of selected wells in Area B will be conducted for a minimum of one year, beginning in October 1992 (Levine·Fricke, 1992d).

Additionally, ground-water samples are currently collected on a semiannual basis from selected wells in Area A of the YBP Site for analysis of TPHd and TPHo, in accordance with the Sampling and Analysis Plan implemented in January 1992 for Area A of the YBP Site (Levine·Fricke, 1991d).

5.0 SUMMARY AND CONCLUSIONS

Approximately 26,800 cubic yards (estimated in-place volume) of petroleum-affected soil were excavated during remedial activities conducted for the Property by ARI and Levine·Fricke. Soils were excavated to criteria approved by the ACHA and completed excavations were backfilled using clean imported fill or excavated soil that contained petroleum hydrocarbon compounds at concentrations below the backfill criteria approved by the ACHA. The backfill material generally was compacted to 90% as confirmed by laboratory and field compaction tests.

Approximately 4,100 cubic yards (estimated stockpile volume) of excavated diesel- and oil-affected soils were transported off site for thermal treatment, as directed by ARI. Approximately 2,500 cubic yards (estimated stockpile volume) of gasoline-affected soils excavated by ARI were successfully aerated on site by ARI in accordance with recommendations included in ARI's 1991 report and criteria approved by the ACHA. The successfully aerated soil was used as backfill material for the Property. Approximately 9,600 cubic yards (stockpile volume) of gasoline-affected soil excavated by Levine·Fricke were successfully aerated on site by Levine·Fricke for gasoline and BTEX compounds but contain concentrations of diesel and oil above backfill criteria.

A total of approximately 25,000 cubic yards of soil, generally containing less than 2,000 ppm TPHd and TPHo, currently are stockpiled on site. This total includes soil successfully aerated to established criteria for TPHg and BTEX compounds. These petroleum-affected soils will be contained on site in accordance with the approved Containment Plan (Levine·Fricke, 1992a). Petroleum-affected soil will be placed beneath low permeability asphalt paving in parking areas proposed for portions of the YBP Site, to minimize possible exposure to the affected soils and mitigate future effects to shallow ground water by reducing surface infiltration through the soil.

Based on observations of soil remediation activities conducted by ARI and on laboratory data for verification samples collected from the sidewalls and floors of excavations completed by ARI and Levine·Fricke, no additional soil remediation activities are recommended or proposed for the Property.

Ground-water samples will be collected from selected monitoring wells located on the Site during periodic monitoring activities and will be analyzed for petroleum hydrocarbons as oil and diesel to verify that no significant leaching of TPH is occurring at the Property.

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TABLE 1
ANALYTICAL RESULTS OF VERIFICATION SOIL SAMPLES
FORMER RANSOME PROPERTY, EMERYVILLE, CALIFORNIA
(Concentrations in parts per million)

Sample Designation	Sample Depth (feet)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	GASOLINE	DIESEL	KEROSENE	OIL & GREASE	HYDROCARBONS OIL
Detection Limits: (unless otherwise noted)		<0.005	<0.005	<0.005	<0.005	<1.0	<1.0	<1.0	<50	<10 <20
AB-1-8.5	8.5	ND	0.0055	ND	ND	ND	ND	ND	ND	--- ---
AE-2-3	3	ND	0.0095	ND	ND	ND	ND	ND	ND	--- ---
AN-3-5.5	5.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
AS-5-3.5	3.5	ND	ND	ND	ND	ND	ND	ND	ND	ND ---
AS-5-3.5*	3.5	ND	ND	ND	ND	ND	ND	---	10	ND ND
AW-4-6	6	ND	0.0055	ND	ND	ND	ND	ND	ND	--- ---
A'B-1-7	7	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
A'E-2-3	3	---	---	---	---	---	ND	ND	ND	--- ---
A'N-3-4.5	4.5	---	---	---	---	---	ND	ND	ND	--- ---
A'S-4-2.5	2.5	---	---	---	---	---	ND	ND	60	--- ---
A'W-5-5	5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
BB-3-5.5	5.5	ND	0.011	ND	ND	ND	ND	ND	ND	--- ND
BB-3-5.5*	5.5	ND	ND	ND	ND	ND	ND	---	ND	--- ---
BB-4-5	5	ND	0.0083	ND	ND	ND	ND	ND	ND	--- ---
BB-5-4	4	ND	0.010	ND	ND	ND	ND	ND	ND	--- ---
BE-8-3	3	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
BB-8-3*	3	ND	ND	ND	ND	ND	ND	---	ND	ND ND
BS-6-3	3	ND	0.035	ND	ND	ND	ND	ND	ND	--- ---
BS-6-3*	3	ND	ND	ND	ND	ND	ND	---	20	ND ND
BW-1-1.5	1.5	ND	0.016	ND	ND	ND	ND	ND	ND	--- ---
BW-1-1.5*	1.5	ND	ND	ND	ND	ND	ND	---	ND	ND ND
BW-2-3	3	ND	0.0073	ND	ND	ND	ND	ND	ND	--- ---
BW-7-2.5	2.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
B'1B-3-9	9	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
B'1E-5-6	6	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
B'1E-5-6*	6	ND	ND	ND	ND	ND	ND	---	ND	ND ND
B'1N-1-7.5	7.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
B'1S-4-7	7	ND	ND	ND	ND	ND	ND	ND	---	--- ---
B'1W-2-5.5	5.5	ND	ND	ND	ND	ND	1.3	ND	---	--- ---
CB-1-6.5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
CB-1-6.5*	6.5	ND	ND	ND	ND	ND	ND	---	20	10 ND
CE-3-3	3	ND	0.064	ND	ND	ND	ND	ND	ND	--- ---
CE-3-3*	3	ND	ND	ND	ND	ND	ND	---	20	10 ND
CS-2-3	3	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-2-4	4	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-3-5.5	5.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-8-6	6	ND	ND	ND	0.0067	2.2	ND	25	ND	--- ---
DB-19-5.5	5.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-19-5.5*	5.5	ND	ND	ND	ND	ND	ND	---	10	ND ND
DB-24-5.5	5.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-34-8.5	8.5	ND	ND	ND	0.017	2.3	ND	ND	ND	--- ---
DB-35-9.5	9.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-35-9.5*	9.5	ND	0.007	ND	100	4	ND	---	ND	ND ND
DB-36-10	10	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-36-10*	10	ND	ND	ND	ND	ND	ND	---	ND	ND ND
DB-37-10	10	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-37-10*	10	ND	ND	ND	0.005	1.0	ND	---	40	40 100
DB-38-10	10	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DB-46-10.5	10.5	ND	ND	ND	ND	ND	3.8	ND	---	--- ---
DE-6-4	4	ND	ND	ND	ND	ND	ND	3.4	ND	--- ---
DE-16-2.5	2.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DE-21-4	4	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DE-25-2	2	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DE-39-6	6	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DE-40-5.5	5.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DE-45-5	5	ND	ND	ND	ND	ND	4.8	ND	ND	--- ---
DN-1-3	3	ND	0.032	ND	ND	ND	ND	---	ND	--- ---

TABLE 1
ANALYTICAL RESULTS OF VERIFICATION SOIL SAMPLES
FORMER RANSOME PROPERTY, EMERYVILLE, CALIFORNIA
(Concentrations in parts per million)

Sample Designation	Sample Depth (feet)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	GASOLINE	DIESEL	KEROSENE	OIL & GREASE	HYDROCARBONS OIL
Detection Limits: (unless otherwise noted)		<0.005	<0.005	<0.005	<0.005	<1.0	<1.0	<1.0	<50	<10 <20
DN-1-3*	3	ND	ND	ND	ND	ND	ND	---	40	20 ND
DN-4-3	3	ND	ND	ND	ND	ND	2.1	ND	ND	--- ---
DN-9-3	3	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DN-9-3*	3	ND	ND	ND	ND	0.4	ND	---	20	ND ND
DN-22-2.75	2.75	---	---	---	---	---	ND	ND	220	--- ---
DN-26-4	4	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DN-29-4.5	4.5	ND	ND	ND	ND	ND	ND	ND	---	--- ---
DN-30-6.5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DN-31-5	5	ND	ND	ND	ND	ND	ND	ND	---	--- ---
DS-5-5	5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DS-14-5	5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DS-20-3	3	ND	ND	ND	ND	ND	ND	ND	700	--- ---
DS-27-2.75	2.75	---	---	---	---	---	ND	ND	ND	--- ---
DS-41-4	4	---	---	---	---	---	ND	ND	ND	--- ---
DS-47-6	6	ND	ND	ND	ND	ND	---	---	---	--- ---
DW-11-5	5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DW-11-5*	5	ND	ND	ND	ND	ND	ND	---	ND	ND ND
DW-32-4.5	4.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DW-32-4.5*	4.5	ND	ND	ND	ND	ND	ND	---	ND	ND ND
DW-33-5	5	ND	ND	ND	0.017	2.9	ND	ND	---	--- ---
DW-42-5	5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
DW-43-3.5	3.5	---	---	---	---	ND	ND	ND	---	--- ---
DW-44-6	6	---	---	---	---	ND	ND	ND	---	--- ---
EB-5-10	10	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
EE-1-3.5	3.5	ND	ND	ND	ND	ND	ND	ND	130	--- ---
ES-4-2	2	---	---	---	---	---	ND	ND	110	--- ---
EW-3-3	3	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
FB-5-11	11	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
FN-3-3	3	0.0098	0.0071	0.190	0.470	12	<10	<10	130	--- ---
FS-4-6	6	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
FW-6-5	5	0.270	0.0053	0.032	0.170	12	---	---	ND	--- ---
GB-2-6.5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
GB-5-11.5	11.5	ND	ND	ND	ND	ND	ND	ND	---	--- ---
GB-5-11.5*	11.5	ND	ND	ND	ND	ND	ND	---	ND	ND ND
GB-6-11	11	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
GE-8-7	7	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
GN-1-3	3	ND	ND	ND	ND	ND	ND	ND	660	--- ---
JB-4-11	11	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-7-13.5	13.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-9-4.5	4.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-10-6.5	6.5	---	---	---	---	---	ND	ND	---	--- ---
JB-11-6.5	6.5	---	---	---	---	---	ND	ND	---	--- ---
JB-12-13.5	13.5	ND	ND	ND	ND	ND	---	---	---	--- ---
JB-12-13.5*	13.5	ND	0.001	ND	ND	ND	ND	---	ND	ND ND
JB-13-13.5	13.5	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-14-14	14	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-15-14	14	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-16-14	14	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-17-14	14	ND	ND	ND	ND	ND	---	---	---	--- ---
JB-18-14	14	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-19-14	14	0.006	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-20-14	14	ND	ND	ND	ND	ND	---	---	---	--- ---
JB-20-14*	14	0.002	0.002	ND	0.008	ND	ND	---	ND	ND ND
JB-21-14	14	ND	ND	ND	ND	ND	ND	---	ND	ND ND
JB-22-14	14	ND	ND	ND	ND	ND	---	---	---	--- ---
JB-23-14	14	ND	ND	ND	ND	ND	ND	ND	ND	--- ---
JB-24-14	14	ND	ND	ND	ND	ND	---	---	---	--- ---
JB-25-14	14	ND	ND	ND	ND	ND	ND	ND	ND	--- ---

TABLE 1
ANALYTICAL RESULTS OF VERIFICATION SOIL SAMPLES
FORMER RANSOME PROPERTY, EMERYVILLE, CALIFORNIA
(Concentrations in parts per million)

Sample Designation	Sample Depth (feet)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	GASOLINE	DIESEL	KEROSENE	OIL & GREASE	HYDROCARBONS OIL
Detection Limits: (unless otherwise noted)		<0.005	<0.005	<0.005	<0.005	<1.0	<1.0	<1.0	<50	<10
JB-26-14	14	ND	ND	ND	ND	ND	---	---	---	---
JB-27-13	13	ND	ND	ND	0.007	ND	---	---	---	---
JB-28-13	13	0.011	ND	ND	ND	ND	ND	ND	ND	---
JB-28-13*	13	0.014	ND	ND	ND	ND	ND	---	ND	ND
JB-29-13	13	ND	ND	ND	ND	ND	---	---	---	---
JB-30-13	13	ND	ND	ND	ND	ND	ND	ND	ND	---
JB-31-13	13	ND	ND	ND	ND	ND	ND	ND	ND	---
JB-31-13*	13	ND	ND	ND	ND	ND	ND	---	ND	ND
JB-33-9	9	ND	ND	ND	ND	ND	ND	ND	ND	---
JB-34-9	9	ND	0.0075	0.0073	ND	2.6	---	---	---	---
JB-35-8.5	8.5	ND	ND	0.059	0.015	3	---	---	---	---
JB-35-8.5*	8.5	ND	ND	0.003	ND	ND	ND	ND	ND	---
JB-36-8.5	8.5	ND	ND	ND	ND	ND	---	---	---	---
JB-56-12	12	ND	ND	ND	ND	ND	ND	ND	ND	---
JB-65-13	13	ND	ND	ND	ND	ND	---	---	---	---
JB-67-13	13	ND	ND	ND	ND	ND	ND	ND	ND	---
JE-1-7	7	ND	ND	ND	ND	ND	ND	ND	ND	---
JE-2-6	6	ND	ND	ND	ND	ND	ND	ND	ND	---
JE-44-9	9	ND	ND	ND	ND	ND	ND	ND	ND	---
JE-49-8	8	ND	ND	ND	ND	ND	ND	ND	ND	---
JN-8-8.5	8.5	ND	ND	ND	ND	ND	ND	ND	ND	---
JN-48-8.5	8.5	ND	ND	ND	ND	ND	---	---	---	---
JN-50-7	7	ND	ND	ND	ND	ND	---	---	---	---
JN-51-9.5	9.5	ND	ND	ND	ND	ND	ND	ND	ND	---
JN-52-7	7	ND	ND	ND	ND	ND	ND	ND	ND	---
JN-53-9.5	9.5	ND	ND	0.032	ND	2.5	ND	ND	ND	---
JN-53-9.5*	9.5	0.044	0.015	1.90	5.0	32	ND	---	30	30
JN-54-7	7	0.053	ND	0.024	0.011	2.5	ND	ND	ND	---
JN-54-7*	7	0.350	0.007	0.320	0.340	5.5	ND	---	10	ND
JN-55-9.5	9.5	0.084	0.130	2.0	7.7	120	ND	ND	ND	---
JN-57-10	10	ND	ND	ND	ND	ND	3.8	ND	ND	---
JN-58-9.5	9.5	ND	ND	ND	ND	ND	---	---	---	---
JN-62-6	6	ND	ND	ND	ND	ND	10	ND	ND	---
JS-3-4	4	ND	ND	ND	ND	ND	ND	ND	ND	---
JS-42-7	7	ND	ND	ND	ND	ND	ND	ND	ND	---
JS-59-8	8	0.0092	ND	ND	0.0054	1.7	---	---	---	---
JS-63-8	8	ND	ND	ND	ND	1.3	1.1	ND	ND	---
JS-64-7.5	7.5	ND	ND	ND	ND	ND	---	---	---	---
JS-64-7.5*	7.5	ND	ND	ND	ND	ND	ND	---	20	ND
JS-66-8	8	ND	ND	ND	ND	ND	ND	ND	ND	---
JS-68-9	9	ND	ND	ND	ND	ND	---	---	---	---
JS-68-9*	9	ND	ND	ND	ND	ND	ND	ND	20	ND
JS-70-7	7	ND	ND	ND	ND	1.9	ND	ND	ND	---
JW-5-6	6	ND	ND	ND	ND	ND	ND	ND	ND	---
JW-6-7	7	ND	ND	ND	ND	ND	ND	ND	ND	---
JW-37-10	10	ND	ND	ND	ND	ND	---	---	---	---
JW-38-9	9	ND	ND	0.0087	ND	ND	---	---	---	---
JW-69-6.5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	---
KB-2-11.5	11.5	ND	ND	ND	ND	ND	ND	ND	ND	---
KB-2-11.5*	11.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
KB-8-11.5	11.5	ND	ND	ND	ND	ND	ND	ND	ND	---
KB-13-11.5	5.5	ND	ND	ND	0.025	ND	16	ND	90	---
KB-20-11	11	ND	ND	0.011	ND	ND	ND	ND	ND	---
KB-20-11*	11	0.001	ND	0.003	0.004	ND	ND	---	ND	ND
KB-29-10.5	10.5	ND	ND	ND	ND	ND	ND	ND	ND	---
KB-32-11	11	ND	ND	ND	ND	ND	1.2	ND	ND	---
KB-35-8.5	8.5	ND	ND	ND	ND	ND	ND	ND	ND	---
KB-36-7.5	7.5	ND	ND	ND	ND	ND	ND	ND	ND	---
KE-4-5.5	5.5	0.035	ND	ND	ND	1.1	ND	ND	ND	---
KE-30-6.5	6.5	ND	ND	ND	ND	ND	1.2	ND	ND	---
KE-31-7	7	ND	ND	ND	ND	ND	1.0	ND	ND	---

TABLE 1
ANALYTICAL RESULTS OF VERIFICATION SOIL SAMPLES
FORMER RANSOME PROPERTY, EMERYVILLE, CALIFORNIA
(Concentrations in parts per million)

Sample Designation	Sample Depth (feet)	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENE	GASOLINE	DIESEL	KEROSENE	OIL & GREASE	HYDROCARBONS OIL
Detection Limits: (unless otherwise noted)		<0.005	<0.005	<0.005	<0.005	<1.0	<1.0	<1.0	<50	<10
KN-1-8	8	0.024	0.005	0.093	0.170	11	ND	ND	---	---
KN-9-6.5	6.5	ND	ND	0.0059	0.0087	1.3	3.8	ND	ND	---
KN-9-6.5*	6.5	ND	ND	ND	ND	ND	ND	---	ND	ND
KN-23-6	6	ND	ND	ND	ND	ND	1.0	ND	---	---
KN-23-6*	6	ND	ND	ND	ND	ND	ND	---	ND	ND
KS-11-5.5	5.5	ND	ND	ND	ND	ND	1.1	ND	ND	---
KS-24-6	6	ND	ND	ND	ND	ND	ND	ND	---	---
KS-24-6*	6	ND	ND	ND	ND	ND	ND	---	10	ND
KS-27-7	7	ND	ND	ND	ND	ND	1.1	ND	ND	---
KS-28-6.5	6.5	ND	ND	ND	ND	ND	1.1	ND	ND	---
KS-33-5	5	ND	ND	ND	ND	ND	ND	ND	ND	---
KS-33-5*	5	ND	ND	ND	ND	ND	ND	---	ND	ND
KW-14-6	6	ND	ND	ND	ND	ND	ND	ND	---	---
KW-22-7.5	7.5	ND	ND	0.110	0.037	2.8	1.4	ND	---	---
KW-34-6.5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	---
LB-4-6.5	6.5	ND	ND	ND	ND	ND	ND	ND	ND	---
LB-4-6.5*	6.5	ND	ND	ND	ND	ND	ND	---	ND	ND
LB-15-10.5	10.5	ND	ND	ND	ND	ND	1.1	ND	ND	---
LB-20-10.5	10.5	ND	ND	ND	ND	1.4	ND	ND	ND	---
LB-20-10.5*	10.5	ND	ND	ND	ND	1.4	ND	---	10	ND
LB-24-12.5	12.5	ND	ND	ND	ND	ND	1.2	ND	ND	---
LB-44-10.5	10.5	ND	ND	ND	ND	ND	ND	ND	ND	---
LB-45-10.5	10.5	ND	ND	ND	ND	ND	ND	ND	ND	---
LE-1-3.5	3.5	---	---	---	---	---	ND	ND	ND	---
LE-6-5	5	ND	ND	ND	ND	ND	---	---	---	---
LE-18-7	7	ND	ND	ND	ND	ND	ND	ND	ND	---
LE-25-9	9	0.012	ND	ND	ND	1.1	ND	ND	ND	---
LE-40-4.5	4.5	ND	ND	ND	ND	ND	ND	ND	---	---
LE-40-4.5	4.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
LE-41-5	5	ND	ND	ND	ND	1.1	ND	ND	---	---
LN-27-6	6	ND	ND	ND	ND	ND	ND	ND	ND	---
LN-34-3.5	3.5	0.011	ND	0.0057	0.035	3.5	ND	ND	---	---
LS-2-3	3	---	---	---	---	---	3.3	ND	76	---
LS-10-4	4	ND	ND	0.0093	0.033	3.3	73	ND	510	---
LS-30-4	4	ND	ND	ND	ND	ND	1.9	ND	ND	---
LS-36-4	4	ND	ND	ND	ND	ND	2.4	ND	---	---
LS-36-4*	4	ND	ND	ND	ND	ND	ND	---	30	ND
LS-43-6.5	6.5	---	---	---	---	---	ND	ND	---	---
LS-47-7	7	ND	ND	ND	ND	ND	ND	ND	---	---
LS-47-7*	7	ND	ND	ND	ND	ND	ND	---	ND	ND
LW-3-5	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
LW-3-5*	5	ND	ND	ND	ND	ND	ND	---	ND	ND
LW-28-4	4	ND	ND	ND	ND	2.1	ND	ND	ND	---
LW-28.1-8**	8	0.014	ND	0.140	0.093	4	ND	---	20	10
LW-35-4	4	ND	ND	ND	ND	ND	ND	ND	---	---
LW-39-4.5	4.5	ND	ND	ND	0.0063	1.3	ND	ND	---	---

NOTES:
* Duplicate sample collected by Levine-Fricke Inc.
** Sample collected by Levine-Fricke Inc. only.
ND = not detected
Samples collected by Aqua Resources, Inc. were analyzed by Curtis & Tompkins, Ltd., Analytical Laboratories. Samples were analyzed for total volatile hydrocarbons (TVH) as gasoline, and extractable petroleum hydrocarbons (EPH) as kerosene and diesel using modified EPA Method 8015, BTEX using EPA Method 8020, and oil and grease by Standard Method 5520e and total recoverable hydrocarbons by 5520f.
Samples collected by Levine-Fricke were analyzed by Quanteq Laboratories (formerly Med-Tox Associates, Inc.) using the same methods as Aqua Resources, Inc. Several samples also were analyzed for oil using modified EPA Method 8015.

TABLE 2
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AQUA RESOURCES' AERATION BEDS
(concentrations in parts per million [ppm])

Sample ID	Stockpile	Benzene	Toluene	Ethyl-benzene	Xylenes	Gasoline	Diesel	Oil & Grease	Oil (EPA 8015)
Samples collected by Aqua Resources, Inc. *:									
A 1-2		ND	ND	ND	ND	ND	ND	590	NS
A 3-6		ND	ND	ND	ND	ND	ND	480	NS
B 1-4		ND	ND	ND	ND	ND	ND	330	NS
B 5-8		ND	ND	ND	ND	ND	ND	500	NS
C 1-2		ND	ND	ND	ND	ND	2.9	--	NS
C 3-6		ND	ND	ND	ND	ND	ND	1100	NS
C 7		--	--	--	--	--	--	500	NS
D 1-3		ND	ND	ND	ND	ND	ND	--	NS
D 4-7		ND	ND	ND	ND	ND	35	600	NS
D 8-11		--	--	--	--	--	--	400	NS
D 21-4		ND	ND	ND	ND	2.1	ND	510	NS
D 25-8		--	--	--	--	--	--	610	NS
D2 17-20		ND	0.014	0.0075	0.022	3.2	ND	370	NS
D2 29-32		--	--	--	--	--	--	630	NS
D2 40-43		ND	ND	ND	ND	ND	ND	560	NS
D2 44-47		ND	ND	0.0064	0.028	1.8	160	490	NS
D2 52-53		ND	ND	ND	2.5	1.8	27	1100	NS
D2 54-55		ND	ND	ND	0.0069	ND	13	620	NS
F 1-3		ND	ND	ND	ND	ND	ND	620	NS
F 4-6		ND	ND	ND	ND	ND	ND	380	NS
J 1-4		ND	ND	ND	ND	ND	28	ND	NS
J 5-8		ND	ND	ND	ND	ND	36	88	NS
J 9-12		ND	ND	ND	ND	ND	6.6	ND	NS
J 13-16		ND	ND	ND	ND	ND	6.3	ND	NS
J 17-20		ND	ND	ND	ND	ND	5.8	66	NS
J 21-24		--	--	--	--	ND	11	ND	NS
J 25-28		--	--	--	--	ND	13	ND	NS
J 29-30		ND	ND	ND	ND	ND	6.5	110	NS
J 31-34		ND	ND	ND	ND	ND	12	270	NS
JT 1-4		--	--	--	--	--	--	230	NS
JP 1-4		--	--	--	--	--	--	400	NS
Z 1-4		ND	ND	ND	ND	ND	170	630	NS
Confirmatory samples collected by Levine-Fricke**:									
R-110	1	ND	ND	ND	0.005	<10	<10	NA	54
R-192	2	ND	ND	ND	0.009	<10	<10	NA	60
R-542	6	ND	ND	ND	ND	<10	<10	NA	<50
R-694	6	ND	ND	ND	0.008	<10	<10	NA	59
R-906	6	ND	ND	ND	0.006	<10	<10	NA	59
R-1460	8	ND	ND	ND	ND	<10	<10	NA	<50
R-1519	8	ND	ND	ND	ND	<10	<10	NA	<50
R-1891	9	ND	ND	ND	ND	<10	<10	NA	<50
R-2303	9	ND	ND	ND	ND	<10	10	NA	83
R-2451	9	ND	ND	ND	0.022	<10	<10	NA	54
R-2472	9	ND	ND	ND	0.030	<10	<10	NA	63

NOTES:
* Soil samples collected by Aqua Resources were submitted to Curtis & Tompkins, Ltd., Analytical Laboratories of Berkeley, California
** Soil samples collected by Levine-Fricke were submitted to Precision Analytical Laboratory, Inc. of Richmond, California.
All soil samples were analyzed for gasoline and BTEX using Modified EPA Method 8015/8020; diesel using Modified EPA Method 8015; and oil and grease using EPA Method 5520e and f.
ND = not detected
NA = not analyzed

TABLE 3
ANALYTICAL RESULTS OF SOIL SAMPLES COLLECTED FROM
TEST PITS AND SOIL BORINGS
(concentrations in parts per million [ppm])

Sample ID	Date Sampled	Lab Analysis Return Date	Total Recoverable Hydrocarbons	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes
PHASE I											
TP1-4	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	0.028	0.007	0.015	150
TP1-8	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	0.06	<0.005	0.060	<0.005
TP1-12	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP2-4	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	0.360	0.012	0.040	0.200
TP2-8	16-Oct-91	18-Oct-91	NA	60	<50	NA	150	2.700	0.300	21	100
TP2-11	16-Oct-91	18-Oct-91	NA	<10	<50	NA	12	0.090	<0.03	1.30	4.20
TP3-4	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	0.028	0.006	<0.005	0.027
TP3-8	17-Oct-91	21-Oct-91	NA	<10	<50	NA	80	0.080	<0.03	<0.03	0.360
TP3-11	17-Oct-91	21-Oct-91	NA	23	<50	NA	80	0.460	0.040	4.20	9.0
TP4-4	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	0.070	0.005	0.390	0.430
TP4-8	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	0.230	0.017	0.230	0.280
TP4-11	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	0.10	0.010	0.480	0.600
TP5-5	17-Oct-91	21-Oct-91	NA	<10	<50	NA	12	0.40	0.007	0.600	0.140
TP5-8	17-Oct-91	21-Oct-91	NA	<10	<50	NA	120	2.70	10	11	57
TP5-11.5	17-Oct-91	21-Oct-91	NA	<10	<50	NA	220	3.30	20	15	72
TP8-4	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	<0.005	0.009	<0.005	0.027
TP8-8.5	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	0.030	0.009
TP8-12	17-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	0.009
TP9-4	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP9-8	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP10-4	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP10-8	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP11-5	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	0.040
TP11-8	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP11-12	21-Oct-91	23-Oct-91	NA	55	90	NA	<10	<0.005	<0.005	<0.005	0.230
TP12-4	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP12-8	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP12-12	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP13-4	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP13-8	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP13-12	21-Oct-91	23-Oct-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP14-4	21-Jan-92	23-Jan-92	1,630	100	1,400	NA	<10	<0.005	<0.005	<0.005	<0.005
TP14-8	21-Jan-92	23-Jan-92	1,880	80	680	NA	<10	<0.005	<0.005	<0.005	<0.005
TP14-12	21-Jan-92	23-Jan-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP15-4	21-Jan-92	23-Jan-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP15-7.5	21-Jan-92	23-Jan-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP15-12	21-Jan-92	23-Jan-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005

TABLE 3
ANALYTICAL RESULTS OF SOIL SAMPLES COLLECTED FROM
TEST PITS AND SOIL BORINGS
(concentrations in parts per million [ppm])

Sample ID	Date Sampled	Lab Analysis Return Date	Total Recoverable Hydrocarbons	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes
TP16-14	31-Jan-92	03-Feb-92	<50	40	240	NA	<10	<0.005	<0.005	<0.005	<0.005
TP17-12	04-Feb-92	06-Feb-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP18-3.5	04-Feb-92	06-Feb-92	2,650	130*	800	NA	<10	<0.005	<0.005	<0.005	<0.005
TP18-8	04-Feb-92	06-Feb-92	2,000	160*	1,300	NA	<10	<0.005	<0.005	<0.005	<0.005
TP19-4	04-Feb-92	06-Feb-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
TP20-4	04-Feb-92	06-Feb-92	<50	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
PHASE II											
SB1-4	08-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SB1-8	08-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SB1-12	08-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SB2-4	08-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SB2-8	08-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SB2-12	08-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SB3-2	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	0.023	0.010	0.034
SB3-6	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB3-10	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB4-2	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	0.009	<0.005	<0.005
SB4-6	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB4-10	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB5-2	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	0.015	<0.005	<0.005
SB5-6	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB5-10	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB6-2	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	0.007	<0.005	<0.005
SB6-6	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB6-10	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB7-2	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	0.015
SB7-6	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	0.080	<0.005	0.210	0.220
SB7-10	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	0.031	0.150
SB8-2	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB8-6	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB8-10	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB9-2	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB9-6	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB9-10	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB10-2	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB10-6	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB10-10	07-Nov-91	18-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005

TABLE 3
ANALYTICAL RESULTS OF SOIL SAMPLES COLLECTED FROM
TEST PITS AND SOIL BORINGS
(concentrations in parts per million [ppm])

Sample ID	Date Sampled	Lab Analysis Return Date	Total Recoverable Hydrocarbons	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes
SB12-4	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	0.006	<0.005	<0.005	<0.005
SB12-8	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB12-12	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	<0.005
SB14-4	08-Nov-91	12-Nov-91	NA	21	<50	NA	<10	<0.005	<0.005	<0.005	0.015
SB14-8	08-Nov-91	12-Nov-91	NA	25.9	<50	NA	41.0	2.400	0.530	11	7
SB14-12	08-Nov-91	12-Nov-91	NA	<10	<50	NA	<10	0.230	0.036	2.40	0.70
Test pits excavated by Aqua Resources:											
TP-J-1	26-Jul-91	02-Aug-91	NA	NA	NA	NA	60	0.130	0.034	1.40	2.80
TP-J-2	26-Jul-91	02-Aug-91	NA	NA	NA	NA	270	0.82	<0.080	3.60	2.50
TP-J-3	26-Jul-91	02-Aug-91	NA	NA	NA	NA	640	3.30	8.80	17.0	76.0
TP-J-4	30-Jul-91	06-Aug-91	NA	4.4	NA	72	<1	<0.005	<0.005	<0.005	<0.005
TP-J-5	30-Jul-91	06-Aug-91	NA	9.6	NA	410	29	0.076	<0.010	0.034	0.043
TP-J-6	30-Jul-91	06-Aug-91	NA	500	NA	330	11000	9.50	<4.0	180.0	780.0
TP-J-7	30-Jul-91	06-Aug-91	NA	<1	NA	<50	1.6	<0.005	<0.005	<0.005	0.0091
TP-J-8	30-Jul-91	06-Aug-91	NA	<1	NA	<50	<1	<0.005	<0.005	<0.005	0.0061

NOTES:
* In diesel range not characteristic of diesel.
O/G - Oil and grease
NA - Not analyzed

Soil samples collected by Levine-Fricke were submitted to Precision Analytical Laboratory, Inc. of Richmond, California, for analysis of gasoline using Modified EPA Method 8015; BTEX compounds using EPA Method 8020; diesel and oil using EPA Method 8015; and total recoverable hydrocarbons using Standard Method 5520f.

Soil samples collected by Aqua Resources were submitted to Curtis & Tompkins, Ltd., of Berkeley, California, for analysis of gasoline and BTEX compounds using EPA Methods 5030/8020; diesel using Modified EPA Method 8015; and oil and grease using Standard Method 5520e and f.

TABLE 4

ANALYTICAL RESULTS OF FINAL VERIFICATION SOIL SAMPLES

COLLECTED FROM NORTHERN AREA EXCAVATION*

(results in parts per million [ppm])

Sample ID	Sample Depth (feet)	Date Sampled	Laboratory Analysis Return Date	Total Recoverable Hydrocarbons	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
BS-1	13	12/17/91	12/19/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-2	12	12/17/91	12/19/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-3	11	12/17/91	12/19/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-4	12	12/19/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	0.021
BS-5	12	12/19/91	12/23/91	<50	<50	<10	<10	<0.005	0.006	<0.005	0.008
BS-6	12	12/20/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-7	12	12/23/91	12/26/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-8	13	12/23/91	12/26/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-9	12.5	12/23/91	12/26/91	<50	<50	<10	<10	<0.005	<0.005	0.047	<0.005
BS-10	13	12/26/91	12/30/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-11	13	12/26/91	12/30/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-12	14	12/26/91	12/30/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-13	13	12/26/91	12/30/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-14	11.5	12/27/91	12/31/91	<50	<50	<10	<10	<0.005	0.006	<0.005	0.007
BS-15	12	12/27/91	12/31/91	<50	<50	<10	<10	<0.005	0.006	<0.005	0.006
BS-16	12.5	01/03/92	01/06/92	<50	<50	<10	<10	0.006	<0.005	0.007	<0.005
BS-17	12	01/03/92	01/06/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-18	13	01/10/92	01/14/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-19	12.5	01/10/92	01/14/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-20	13	01/14/92	01/17/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-21	13	01/14/92	01/17/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-22	12.5	01/15/92	01/17/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-23	12.5	01/16/92	01/20/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-24	13	01/17/92	01/20/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-25	11.5	01/20/92	01/22/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-26	13	01/21/92	01/23/92	<50	<50	<10	<10	0.013	<0.005	<0.005	0.010
BS-30	12	01/23/92	01/24/92	<50	<50	<10	<10	<0.005	<0.005	0.047	0.028
BS-31	14	01/23/92	01/24/92	<50	<50	<10	<10	0.090	0.010	0.053	0.046
BS-32	13	01/24/92	01/27/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	0.010

TABLE 4
ANALYTICAL RESULTS OF FINAL VERIFICATION SOIL SAMPLES
COLLECTED FROM NORTHERN AREA EXCAVATION*
(results in parts per million [ppm])

Sample ID	Sample Depth (feet)	Date Sampled	Laboratory Analysis Return Date	Total Recoverable Hydrocarbons	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
BS-33	11	02/07/92	02/11/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-34	11	02/07/92	02/11/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-35	9	02/14/92	02/19/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-36	8	03/03/92	03/05/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
BS-37	11	03/03/92	03/05/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-1	8	12/17/91	12/19/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-2	8	12/17/91	12/19/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-3	8.5	12/19/91	12/23/91	<50	<50	<10	<10	<0.005	0.005	<0.005	0.007
SW-5	9	12/20/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-6	8	12/20/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-7	8	12/20/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-8	9	12/20/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-9	10	12/20/91	12/23/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-10	9	12/23/91	12/26/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-11	8	12/23/91	12/26/91	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-15	8.5	01/10/92	01/14/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-16	11	01/14/92	01/17/92	<50	<50	<10	<10	0.120	0.008	0.10	0.075
SW-17	11	01/15/92	01/17/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-18	12	01/15/92	01/17/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-19	11	01/16/92	01/20/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-20	11	01/16/92	01/20/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-21	9	01/17/92	01/20/92	<50	<50	<10	<10	<0.005	0.006	<0.005	<0.005
SW-22	10	01/17/92	01/20/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-24	9	01/20/92	01/23/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-25	10	01/20/92	01/23/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-26	9	01/20/92	01/23/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-28	10	01/21/92	01/23/92	50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-36	9	01/27/92	01/29/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-37	9	01/27/92	01/29/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-38	10	01/29/92	01/31/92	<50	<50	<10	45	0.70	<0.03	6.6	14

TABLE 4

ANALYTICAL RESULTS OF FINAL VERIFICATION SOIL SAMPLES

COLLECTED FROM NORTHERN AREA EXCAVATION*

(results in parts per million [ppm])

Sample ID	Sample Depth (feet)	Date Sampled	Laboratory Analysis Return Date	Total Recoverable Hydrocarbons	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SW-39	10	01/29/92	01/31/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-40	10	01/29/92	01/31/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-41	10	01/30/92	02/03/92	<50	<50	11	90	0.63	<0.03	4	10
SW-42	10	01/30/92	02/03/92	<50	<50	<10	70	0.08	<0.03	2.4	13
SW-43	7.5	01/30/92	02/03/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-46	10	02/07/92	02/11/92	<50	<50	<10	<10	0.006	<0.005	0.061	0.123
SW-47	9	02/07/92	02/11/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	0.006
SW-49	9	02/07/92	02/11/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	0.007
SW-50	4	02/14/92	02/19/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-51	4	02/14/92	02/19/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-52	4	02/14/92	02/19/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-53	4	03/03/92	03/05/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-55	4	03/04/92	03/06/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-56	4	03/05/92	03/06/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SW-57	5	03/05/92	03/06/92	<50	<50	<10	<10	<0.005	<0.005	<0.005	<0.005

* All samples analyzed by Precision Analytical Laboratories Inc. of Richmond, California. Samples were analyzed for total petroleum hydrocarbons (TPH) as oil, diesel, and gasoline using Modified EPA Method 8015; benzene, toluene, ethylbenzene, and xylene using Modified EPA Method 8020; and total hydrocarbons using Standard Method 5520f, 17th Edition.

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP1-1	15-Oct-91	17-Oct-91	NA	<10	180	NA	<10	NA	NA	NA	NA
SP2-1	15-Oct-91	17-Oct-91	NA	<10	80	NA	<10	NA	NA	NA	NA
SP3-1	15-Oct-91	17-Oct-91	NA	<10	570	NA	<10	NA	NA	NA	NA
SP3-2	23-Oct-91	28-Oct-91	NA	17	320	NA	<10	NA	NA	NA	NA
SP3-3	23-Oct-91	28-Oct-91	NA	13	690	17,000	<10	NA	NA	NA	NA
SP4-1	15-Oct-91	17-Oct-91	NA	<10	560	NA	<10	NA	NA	NA	NA
SP4-2	17-Oct-91	21-Oct-91	NA	<10	590	NA	<10	NA	NA	NA	NA
SP4-3	17-Oct-91	21-Oct-91	NA	<10	1100	NA	<10	NA	NA	NA	NA
SP4-4	23-Oct-91	28-Oct-91	NA	<10	255	NA	<10	NA	NA	NA	NA
SP4-5	23-Oct-91	28-Oct-91	NA	11	160	NA	<10	NA	NA	NA	NA
SP4-6	23-Oct-91	28-Oct-91	NA	10	260	NA	<10	NA	NA	NA	NA
SP4-7	23-Oct-91	28-Oct-91	NA	<10	170	NA	<10	NA	NA	NA	NA
SP4-8	23-Oct-91	28-Oct-91	NA	<10	210	NA	<10	NA	NA	NA	NA
SP4-9	23-Oct-91	28-Oct-91	NA	<10	175	NA	<10	NA	NA	NA	NA
SP4-10	23-Oct-91	28-Oct-91	NA	<10	220	NA	<10	NA	NA	NA	NA
SP4-11	23-Oct-91	28-Oct-91	NA	<10	130	NA	<10	NA	NA	NA	NA
SP4-12	23-Oct-91	28-Oct-91	NA	<10	180	NA	<10	NA	NA	NA	NA
SP4-13	23-Oct-91	28-Oct-91	NA	<10	320	NA	<10	NA	NA	NA	NA
SP4-14	23-Oct-91	29-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-15	23-Oct-91	29-Oct-91	NA	<10	55	NA	<10	NA	NA	NA	NA
SP4-16	23-Oct-91	29-Oct-91	NA	10	70	NA	<10	<0.005	<0.005	<0.005	0.011
SP4-17	23-Oct-91	29-Oct-91	NA	16	<50	NA	<10	NA	NA	NA	NA
SP4-18	23-Oct-91	29-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-19	23-Oct-91	29-Oct-91	NA	<10	50	NA	<10	NA	NA	NA	NA
SP4-20	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-21	23-Oct-91	31-Oct-91	NA	<10	71	NA	<10	NA	NA	NA	NA
SP4-22	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-23	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-24	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-25	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-26	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-27	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-28	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-29	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-30	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-31	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-32	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-33	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-34	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-35	23-Oct-91	31-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-36	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-37	23-Oct-91	30-Oct-91	NA	<10	73	NA	<10	NA	NA	NA	NA
SP4-38	23-Oct-91	30-Oct-91	NA	10	60	NA	<10	<0.005	<0.005	<0.005	0.010
SP4-39	23-Oct-91	30-Oct-91	NA	<10	70	NA	<10	NA	NA	NA	NA
SP4-40	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP4-41	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-42	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-43	23-Oct-91	30-Oct-91	NA	10	80	NA	<10	NA	NA	NA	NA
SP4-44	23-Oct-91	30-Oct-91	NA	10.5	60	NA	<10	NA	NA	NA	NA
SP4-45	23-Oct-91	30-Oct-91	NA	<10	70	NA	<10	NA	NA	NA	NA
SP4-46	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-47	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-48	23-Oct-91	30-Oct-91	NA	10	60	NA	<10	NA	NA	NA	NA
SP4-49	23-Oct-91	30-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP4-50	23-Oct-91	30-Oct-91	NA	<10	60	NA	<10	NA	NA	NA	NA
SP4-51	07-Nov-91	15-Nov-91	NA	NA	NA	NA	1.3	<0.005	0.012	0.006	0.034
SP4-52	07-Nov-91	15-Nov-91	NA	NA	NA	NA	3.5	<0.005	0.006	<0.005	0.024
SP5-1	15-Oct-91	17-Oct-91	NA	<10	51	NA	<10	NA	NA	NA	NA
SP6-1	15-Oct-91	17-Oct-91	NA	<10	110	NA	<10	NA	NA	NA	NA
SP7-1	15-Oct-91	17-Oct-91	NA	<10	100	NA	<10	NA	NA	NA	NA
SP8-1	15-Oct-91	17-Oct-91	NA	<10	130	NA	<10	NA	NA	NA	NA
SP8-2	15-Oct-91	17-Oct-91	NA	<10	80	NA	<10	NA	NA	NA	NA
SP9-1	15-Oct-91	17-Oct-91	NA	<10	480	NA	<10	NA	NA	NA	NA
SP9-2	15-Oct-91	17-Oct-91	NA	<10	360	NA	<10	NA	NA	NA	NA
SP9-1	23-Oct-91	28-Oct-91	NA	<10	80	NA	<10	NA	NA	NA	NA
SP9-2	23-Oct-91	28-Oct-91	NA	<10	10	NA	<10	NA	NA	NA	NA
SP9-3	23-Oct-91	28-Oct-91	NA	<10	270	NA	<10	NA	NA	NA	NA
SP9-4	23-Oct-91	28-Oct-91	NA	<10	110	NA	<10	NA	NA	NA	NA
SP9-5	23-Oct-91	28-Oct-91	NA	<10	200	NA	<10	NA	NA	NA	NA
SP9-6	23-Oct-91	28-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP9-7	23-Oct-91	28-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP9-8	23-Oct-91	28-Oct-91	NA	<10	230	NA	<10	NA	NA	NA	NA
SP9-9	23-Oct-91	28-Oct-91	NA	<10	140	NA	<10	NA	NA	NA	NA
SP9-10	23-Oct-91	28-Oct-91	NA	<10	130	NA	<10	NA	NA	NA	NA
SP9-11	23-Oct-91	28-Oct-91	NA	<10	215	NA	<10	NA	NA	NA	NA
SP9-12	23-Oct-91	28-Oct-91	NA	<10	260	NA	<10	NA	NA	NA	NA
SP9-13	23-Oct-91	28-Oct-91	NA	<10	85	NA	<10	NA	NA	NA	NA
SP9-14	23-Oct-91	28-Oct-91	NA	<10	160	NA	<10	NA	NA	NA	NA
SP9-15	23-Oct-91	28-Oct-91	NA	<10	110	NA	<10	NA	NA	NA	NA
SP9-16	23-Oct-91	28-Oct-91	NA	<10	80	NA	<10	NA	NA	NA	NA
SP9-17	23-Oct-91	28-Oct-91	NA	<10	225	NA	<10	NA	NA	NA	NA
SP9-18	23-Oct-91	28-Oct-91	NA	<10	125	NA	<10	NA	NA	NA	NA
SP9-19	23-Oct-91	28-Oct-91	NA	<10	60	NA	<10	NA	NA	NA	NA
SP9-20	23-Oct-91	28-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP9-21	23-Oct-91	28-Oct-91	NA	<10	66	NA	<10	NA	NA	NA	NA
SP9-22	23-Oct-91	28-Oct-91	NA	<10	276	NA	<10	NA	NA	NA	NA
SP9-23	23-Oct-91	28-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP9-24	23-Oct-91	28-Oct-91	NA	<10	88	NA	<10	NA	NA	NA	NA

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP10-1	15-Oct-91	17-Oct-91	NA	<10	<50	NA	18	NA	NA	NA	NA
SP10-2	15-Oct-91	17-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP10-3	15-Oct-91	17-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP10-4	15-Oct-91	17-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP10-5	15-Oct-91	17-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP10-6	07-Nov-91	15-Nov-91	255	<10	<50	595	1.1	<0.005	0.011	<0.005	0.038
SP10-7	07-Nov-91	15-Nov-91	220	<10	<50	445	<1.0	<0.005	0.010	<0.005	0.030
SP10-8	07-Nov-91	15-Nov-91	1190	<10	<50	2570	6.5	<0.005	0.019	0.010	0.076
SP10-9	07-Nov-91	15-Nov-91	<50	<10	<50	<50	<1.0	<0.005	0.005	<0.005	0.006
SP11-1	16-Oct-91	18-Oct-91	NA	40	170	NA	<10	NA	NA	NA	NA
SP12-1	16-Oct-91	18-Oct-91	NA	430	2500	NA	<10				
SP12-2	24-Oct-91	11-Nov-91	NA	72	113	NA	<10	NA	NA	NA	NA
SP12-3	24-Oct-91	11-Nov-91	NA	53	134	NA	<10	NA	NA	NA	NA
SP12-4	24-Oct-91	11-Nov-91	NA	43.5	231	NA	<10	NA	NA	NA	NA
SP12-5	24-Oct-91	11-Nov-91	NA	22.9	89	NA	<10	NA	NA	NA	NA
SP12-6	24-Oct-91	11-Nov-91	NA	2000	1430	16,300	<10	NA	NA	NA	NA
SP12-7	24-Oct-91	11-Nov-91	NA	36.9	96.6	NA	<10	NA	NA	NA	NA
SP13-1	16-Oct-91	18-Oct-91	NA	19	880	NA	<10	NA	NA	NA	NA
SP13-2	25-Oct-91	14-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP13-3	25-Oct-91	14-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP13-4	25-Oct-91	14-Oct-91	NA	<10	93	NA	<10	NA	NA	NA	NA
SP13-5	25-Oct-91	14-Oct-91	NA	13	113	NA	<10	NA	NA	NA	NA
SP13-6	25-Oct-91	14-Oct-91	NA	<10	77	NA	<10	NA	NA	NA	NA
SP13-7	25-Oct-91	14-Oct-91	NA	13.5	134	NA	<10	NA	NA	NA	NA
SP13-8	25-Oct-91	14-Oct-91	NA	<10	70	NA	<10	NA	NA	NA	NA
SP13-9	25-Oct-91	14-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP13-10	25-Oct-91	14-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP13-11	25-Oct-91	14-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP13-12	25-Oct-91	14-Oct-91	NA	13.7	104	NA	<10	NA	NA	NA	NA
SP13-13	25-Oct-91	14-Oct-91	NA	<10	56	NA	<10	NA	NA	NA	NA
SP13-14	25-Oct-91	14-Oct-91	NA	26	185	NA	<10	NA	NA	NA	NA
SP13-15	25-Oct-91	14-Oct-91	NA	22.8	237	NA	<10	NA	NA	NA	NA
SP13-16	25-Oct-91	14-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP14-1	16-Oct-91	18-Oct-91	NA	<10	90	NA	<10	NA	NA	NA	NA
SP15-1	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP15-2	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-1D,2D,3	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-4D,5D,6	16-Oct-91	18-Oct-91	NA	17	100	NA	17	NA	NA	NA	NA
SP16-7D,8D,9	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-9D	18-Oct-91	21-Oct-91	NA	60	150	NA	390	NA	NA	NA	NA
SP16-10D	18-Oct-91	21-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-11	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP16-12	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	<0.005	0.008	<0.005	0.016
SP16-13	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-14	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-15	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-16	25-Oct-91	11-Nov-91	NA	40	537	NA	<10	NA	NA	NA	NA
SP16-17	25-Oct-91	11-Nov-91	NA	<10	73	NA	<10	NA	NA	NA	NA
SP16-18	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-19	25-Oct-91	11-Nov-91	NA	<10	65	NA	<10	NA	NA	NA	NA
SP16-20	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-21	25-Oct-91	11-Nov-91	NA	<10	119	NA	<10	NA	NA	NA	NA
SP16-22	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-23	25-Oct-91	11-Nov-91	NA	<10	116	NA	<10	NA	NA	NA	NA
SP16-24	25-Oct-91	11-Nov-91	NA	<10	54	NA	<10	NA	NA	NA	NA
SP16-25	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-26	25-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-27	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-28	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-29	25-Oct-91	12-Nov-91	NA	<10	245	5680	<10	NA	NA	NA	NA
SP16-30	25-Oct-91	12-Nov-91	NA	<10	68	NA	<10	NA	NA	NA	NA
SP16-31	25-Oct-91	12-Nov-91	NA	<10	71	NA	<10	<0.005	<0.005	<0.005	0.007
SP16-32	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-33	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-34	25-Oct-91	12-Nov-91	NA	11.8	190	NA	<10	NA	NA	NA	NA
SP16-35	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-36	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-37	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-38	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-39	25-Oct-91	12-Nov-91	NA	<10	102	NA	<10	NA	NA	NA	NA
SP16-40	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-41	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-42	25-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP16-43	25-Oct-91	14-Nov-91	NA	<10	51	NA	<10	NA	NA	NA	NA
SP16-44	25-Oct-91	14-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP16-45	25-Oct-91	14-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP16-46	25-Oct-91	14-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP16-47	25-Oct-91	14-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP16-48	25-Oct-91	14-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP16-49	25-Oct-91	14-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP16-50	25-Oct-91	14-Nov-91	NA	<10	<10	NA	45	NA	NA	NA	NA
SP16-51	07-Nov-91	15-Nov-91	NA	NA	NA	NA	<1.0	0.006	0.011	<0.005	0.027
SP16-52	07-Nov-91	15-Nov-91	NA	NA	NA	NA	1.1	0.009	0.024	0.012	0.085
SP17-1	15-Oct-91	17-Oct-91	NA	<10	130	NA	<10	NA	NA	NA	NA
SP18-1	18-Oct-91	21-Oct-91	NA	100	1260	NA	<10	NA	NA	NA	NA
SP18-2	24-Oct-91	11-Nov-91	NA	37.2	239	NA	<10				
SP19-1	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP19-2	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA

TABLE 5
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COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP19-3	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP19-4	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP19-5	07-Nov-91	15-Nov-91	150	NA	NA	200	2.0	<0.005	0.012	0.007	0.045
SP19-6	07-Nov-91	15-Nov-91	245	NA	NA	265	<1.0	<0.005	0.008	<0.005	0.023
SP20-1D,3D c	16-Oct-91	18-Oct-91	NA	<10	110	NA	<10	NA	NA	NA	NA
SP20-2D	18-Oct-91	21-Oct-91	NA	<10	1230	NA	<10	NA	NA	NA	NA
SP20-4D,5D c	16-Oct-91	18-Oct-91	NA	<10	300	NA	<10	NA	NA	NA	NA
SP20-6D	18-Oct-91	21-Oct-91	NA	12	560	NA	<10	NA	NA	NA	NA
SP20-7D	18-Oct-91	21-Oct-91	NA	<10	810	NA	<10	NA	NA	NA	NA
SP20-8D	18-Oct-91	21-Oct-91	NA	<10	300	NA	15	NA	NA	NA	NA
SP20-9D	18-Oct-91	21-Oct-91	NA	<10	51	NA	<10	NA	NA	NA	NA
SP20-10	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-11	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-12	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-13	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-14	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-15	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-16	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-17	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-18	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-19	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-20	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-21	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-22	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-23	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-24	24-Oct-91	01-Nov-91	NA	<10	<10	NA	<10	NA	NA	NA	NA
SP20-25	24-Oct-91	01-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-26	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-27	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	0.011
SP20-28	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-29	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-30	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-31	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-32	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-33	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-34	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-35	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-36	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-37	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-38	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-39	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-40	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-41	24-Oct-91	04-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-42	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-43	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	<0.005	<0.005	<0.005	0.006
SP20-44	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-45	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-46	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP20-47	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-48	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-49	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-50	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-51	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-52	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-53	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-54	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-55	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-56	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-57	24-Oct-91	05-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-58	24-Oct-91	06-Nov-91	NA	13	305	NA	<10	NA	NA	NA	NA
SP20-59	24-Oct-91	06-Nov-91	NA	16	280	NA	<10	NA	NA	NA	NA
SP20-60	24-Oct-91	06-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-61	24-Oct-91	06-Nov-91	NA	<10	86	NA	<10	NA	NA	NA	NA
SP20-62	24-Oct-91	06-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-63	24-Oct-91	06-Nov-91	NA	<10	91	NA	<10	NA	NA	NA	NA
SP20-64	24-Oct-91	06-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-65	24-Oct-91	06-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-66	24-Oct-91	06-Nov-91	NA	10	83	NA	<10	NA	NA	NA	NA
SP20-67	24-Oct-91	06-Nov-91	NA	<10	300	NA	<10	NA	NA	NA	NA
SP20-68	24-Oct-91	06-Nov-91	NA	10	57	NA	<10	NA	NA	NA	NA
SP20-69	24-Oct-91	06-Nov-91	NA	<10	150	NA	<10	NA	NA	NA	NA
SP20-70	24-Oct-91	06-Nov-91	NA	<10	90	NA	<10	NA	NA	NA	NA
SP20-71	24-Oct-91	06-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-72	24-Oct-91	06-Nov-91	NA	<10	110	NA	<10	NA	NA	NA	NA
SP20-73	24-Oct-91	06-Nov-91	NA	10	83	NA	<10	NA	NA	NA	NA
SP20-74	24-Oct-91	07-Nov-91	NA	<10	115	NA	<10	NA	NA	NA	NA
SP20-75	24-Oct-91	07-Nov-91	NA	<10	50	NA	<10	NA	NA	NA	NA
SP20-76	24-Oct-91	07-Nov-91	NA	<10	84	NA	<10	NA	NA	NA	NA
SP20-77	24-Oct-91	07-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-78	24-Oct-91	07-Nov-91	NA	<10	67	NA	<10	NA	NA	NA	NA
SP20-79	24-Oct-91	07-Nov-91	NA	<10	50	NA	<10	NA	NA	NA	NA
SP20-80	24-Oct-91	07-Nov-91	NA	<10	130	NA	<10	NA	NA	NA	NA
SP20-81	24-Oct-91	07-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-82	24-Oct-91	07-Nov-91	NA	19	<50	NA	<10	NA	NA	NA	NA
SP20-83	24-Oct-91	07-Nov-91	NA	<10	70	NA	<10	NA	NA	NA	NA
SP20-84	24-Oct-91	07-Nov-91	NA	16	210	NA	<10	NA	NA	NA	NA
SP20-85	24-Oct-91	07-Nov-91	NA	16	120	NA	<10	NA	NA	NA	NA
SP20-86	24-Oct-91	07-Nov-91	NA	<10	100	NA	<10	NA	NA	NA	NA
SP20-87	24-Oct-91	07-Nov-91	NA	<10	56	NA	<10	NA	NA	NA	NA
SP20-88	24-Oct-91	07-Nov-91	NA	<10	225	NA	<10	NA	NA	NA	NA
SP20-89	24-Oct-91	07-Nov-91	NA	<10	90	NA	<10	NA	NA	NA	NA
SP20-90	24-Oct-91	08-Nov-91	NA	<10	94	NA	<10	NA	NA	NA	NA
SP20-91	24-Oct-91	08-Nov-91	NA	15	<50	NA	<10	NA	NA	NA	NA
SP20-92	24-Oct-91	08-Nov-91	NA	15.6	<50	NA	<10	NA	NA	NA	NA
SP20-93	24-Oct-91	08-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-94	24-Oct-91	08-Nov-91	NA	12	<50	NA	<10	NA	NA	NA	NA
SP20-95	24-Oct-91	08-Nov-91	NA	15.9	229	NA	<10	NA	NA	NA	NA

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP20-96	24-Oct-91	08-Nov-91	NA	19	93	NA	<10	NA	NA	NA	NA
SP20-97	24-Oct-91	08-Nov-91	NA	11	90	NA	<10	NA	NA	NA	NA
SP20-98	24-Oct-91	08-Nov-91	NA	<10	140	NA	<10	NA	NA	NA	NA
SP20-99	24-Oct-91	08-Nov-91	NA	<10	71	NA	<10	NA	NA	NA	NA
SP20-100	24-Oct-91	08-Nov-91	NA	<10	60	NA	<10	NA	NA	NA	NA
SP20-101	24-Oct-91	08-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-102	24-Oct-91	08-Nov-91	NA	11	86	NA	<10	NA	NA	NA	NA
SP20-103	24-Oct-91	08-Nov-91	NA	<10	51	NA	<10	NA	NA	NA	NA
SP20-104	24-Oct-91	08-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-105	24-Oct-91	08-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-106	24-Oct-91	12-Nov-91	NA	<10	56	NA	<10	NA	NA	NA	NA
SP20-107	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-108	24-Oct-91	12-Nov-91	NA	13	84	NA	<10	NA	NA	NA	NA
SP20-109	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-110	24-Oct-91	12-Nov-91	NA	<10	90	NA	<10	NA	NA	NA	NA
SP20-111	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-112	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-113	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-114	24-Oct-91	12-Nov-91	NA	13.6	68	NA	<10	NA	NA	NA	NA
SP20-115	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-116	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-117	24-Oct-91	12-Nov-91	NA	12.7	174	NA	<10	NA	NA	NA	NA
SP20-118	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP29-119	24-Oct-91	12-Nov-91	NA	10	131	NA	<10	NA	NA	NA	NA
SP20-120	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-121	24-Oct-91	12-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-122	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-123	24-Oct-91	11-Nov-91	NA	<10	61	NA	<10	NA	NA	NA	NA
SP20-124	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-125	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-126	24-Oct-91	11-Nov-91	NA	12	145	NA	<10	NA	NA	NA	NA
SP20-127	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-128	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-129	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-130	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-131	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-132	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-133	24-Oct-91	11-Nov-91	NA	65	<50	NA	<10	NA	NA	NA	NA
SP20-134	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-135	24-Oct-91	11-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP20-136	07-Nov-91	15-Nov-91	NA	NA	NA	NA	<1.0	<0.005	0.006	<0.005	0.012
SP20-137	07-Nov-91	15-Nov-91	NA	NA	NA	NA	<1.0	<0.005	0.003	<0.005	0.012
SP21-1	16-Oct-91	18-Oct-91	NA	<10	<50	NA	<10	NA	NA	NA	NA

TABLE 5
ANALYTICAL RESULTS OF CHARACTERIZATION SOIL SAMPLES
COLLECTED FROM SOILS STOCKPILED BY AQUA RESOURCES INC.
EMERYVILLE, CALIFORNIA
(all data in parts per million [ppm])

Sample ID	Date Sampled	Lab analysis return date	TPH	Diesel	Oil	O/G	Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SP22-1	16-Oct-91	18-Oct-91	NA	17	280	NA	<10	NA	NA	NA	NA
SP22-2	16-Oct-91	18-Oct-91	NA	<10	110	NA	<10	NA	NA	NA	NA
SP22-3	25-Oct-91	14-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA
SP22-4	25-Oct-91	14-Nov-91	NA	14	112	NA	<10	NA	NA	NA	NA
SP22-5	25-Oct-91	14-Nov-91	NA	<10	<50	NA	<10	NA	NA	NA	NA

NOTES:

O/G = Total oil and grease
TPH = Total petroleum hydrocarbons
NA = not analyzed

All samples analyzed by Precision Analytical Laboratories, Inc. of Richmond, California.

Analysis performed using Modified EPA Method 8015 for TPH as gasoline, diesel, oil; EPA Method 8020 for BTEX compounds; Standard Method 5520 for total oil and grease; and Standard Method, 16th Edition, 503E for total hydrocarbon analysis.

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-1-3A	6	05/20/92	05/21/92	<50	<10	<10	<0.005	<0.005	<0.005	0.008
SS-2-3A	6	05/20/92	05/21/92	<50	<10	<10	<0.005	<0.005	<0.005	0.040
SS-3-1A	8	05/22/92	05/28/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-4-2A	8	05/22/92	05/28/92	100	<10	<10	<0.005	<0.005	0.008	0.031
SS-5-5A	20	05/22/92	05/28/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-6-4A	6	05/22/92	05/28/92	<50	<10	13	0.045	<0.005	0.080	0.200
SS-7-6A	12	05/22/92	05/28/92	<50	<10	11	0.020	<0.005	0.090	0.110
SS-8-7A	14	05/22/92	05/28/92	<50	16	110	0.120	0.030	0.320	4.600
SS-9-1C	18	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-10-1B	20	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-11-2C	16	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-12-2B	10	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	0.006	0.006
SS-13-3C	24	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-14-3B	16	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-15-4C	16	05/26/92	05/29/92	<50	<10	12	<0.005	<0.005	0.014	0.095
SS-16-4B	10	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-17-5C	8	05/26/92	05/29/92	<50	<10	12	0.017	<0.005	0.029	0.060
SS-18-5B	16	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-19-6B	6	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-20-6C	18	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-21-7C	8	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-22-7B	8	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-23-8C	16	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-24-8B	24	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-25-9B	12	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-26-9C	12	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	<0.005	<0.005
SS-27-10C	14	05/26/92	05/29/92	60	21	31	0.024	<0.005	0.037	0.080
SS-28-10B	20	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	0.058	0.350
SS-29-10A	10	05/26/92	05/29/92	<50	<10	<10	<0.005	<0.005	0.011	0.021

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-30-9A	12	05/26/92	05/29/92	<50	<10	<10	0.024	<0.005	0.020	0.057
SS-51-1A	12	07/17/92	07/30/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-52-2A	12	07/17/92	07/30/92	NA	NA	2.3	<0.005	<0.005	<0.005	<0.005
SS-53-1B	12	07/17/92	07/30/92	NA	NA	1.8	<0.005	<0.005	<0.005	<0.005
SS-54-3A	18	07/17/92	07/30/92	NA	NA	3.2	<0.005	<0.005	<0.005	<0.005
SS-55-2B	18	07/17/92	07/30/92	NA	NA	1.7	<0.005	<0.005	<0.005	<0.005
SS-56-1C	18	07/17/92	07/30/92	NA	NA	1.6	<0.005	<0.005	<0.005	<0.005
SS-57-3B	12	07/17/92	07/30/92	NA	NA	2.5	<0.005	<0.005	<0.005	<0.005
SS-58-1D	18	07/17/92	07/30/92	NA	NA	1.0	<0.005	0.008	<0.005	<0.005
SS-59-2C	16	07/17/92	07/30/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-60-2D	12	07/17/92	07/30/92	NA	NA	2.7	<0.005	<0.005	<0.005	<0.005
SS-61-3C	12	07/17/92	07/30/92	NA	NA	1.4	<0.005	<0.005	<0.005	<0.005
SS-62-3D	18	07/17/92	07/30/92	NA	NA	1.4	<0.005	0.006	<0.005	<0.005
SS-63-4C	18	07/17/92	07/30/92	NA	NA	2.8	<0.005	<0.005	<0.005	<0.005
SS-64-4D	12	07/17/92	07/30/92	NA	NA	1.1	<0.005	<0.005	<0.005	<0.005
SS-65-4B	12	07/17/92	07/30/92	NA	NA	1.7	<0.005	<0.005	<0.005	<0.005
SS-66-5D	18	07/17/92	07/30/92	NA	NA	3.9	<0.005	0.006	<0.005	0.016
SS-67-4A	12	07/17/92	07/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-68-6D	18	07/17/92	07/31/92	NA	NA	1.9	<0.005	<0.005	<0.005	<0.005
SS-69-5A	13	07/17/92	07/31/92	NA	NA	17	<0.005	<0.005	<0.005	<0.005
SS-70-6A	24	07/17/92	07/31/92	NA	NA	2.3	<0.005	<0.005	<0.005	<0.005
SS-71-5B	20	07/17/92	07/31/92	NA	NA	2.4	<0.005	0.006	<0.005	<0.005
SS-72-1D	12	07/17/92	07/31/92	NA	NA	1.7	<0.005	0.007	<0.005	<0.005
SS-73-2D	18	07/17/92	07/31/92	NA	NA	1.6	<0.005	<0.005	<0.005	<0.005
SS-74-2C	18	07/17/92	07/31/92	NA	NA	3.0	<0.005	<0.005	<0.005	<0.005
SS-75-1C	12	07/17/92	07/31/92	NA	NA	8.8	<0.005	<0.005	<0.005	<0.005
SS-76-2B	12	07/17/92	07/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-77-1B	18	07/17/92	07/31/92	NA	NA	2.4	<0.005	<0.005	<0.005	<0.005
SS-78-2A	24	07/17/92	07/31/92	NA	NA	1.0	<0.005	<0.005	<0.005	<0.005
SS-79-1A	18	07/17/92	07/31/92	NA	NA	<1.0	<0.005	0.007	<0.005	<0.005

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-80-3A	12	07/17/92	07/31/92	NA	NA	1.9	<0.005	<0.005	<0.005	<0.005
SS-81-4A	12	07/17/92	07/31/92	NA	NA	1.7	<0.005	0.006	<0.005	0.017
SS-82-3B	14	07/17/92	07/31/92	NA	NA	<1.0	<0.005	0.006	<0.005	<0.005
SS-83-4B	12	07/17/92	07/22/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.021
SS-84-3C	18	07/17/92	07/22/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.012
SS-85-4C	18	07/17/92	07/22/92	NA	NA	1.5	<0.005	0.020	0.120	0.640
SS-86-3D	16	07/17/92	07/22/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.007
SS-87-4D	18	07/17/92	07/22/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.014
SS-88-5A	12	07/21/92	08/05/92	NA	NA	1.0	<0.005	<0.005	<0.005	<0.005
SS-89-5B	18	07/21/92	08/05/92	NA	NA	3.9	<0.005	<0.005	<0.005	<0.005
SS-90-5C	15	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-91-5D	14	07/21/92	08/05/92	NA	NA	1.1	<0.005	<0.005	<0.005	<0.005
SS-92-6D	12	07/21/92	08/05/92	NA	NA	1.2	<0.005	<0.005	<0.005	<0.005
SS-93-6C	12	07/21/92	08/05/92	NA	NA	3.4	<0.005	<0.005	<0.005	<0.005
SS-94-6C	20	07/21/92	08/05/92	NA	NA	1.3	<0.005	<0.005	<0.005	<0.005
SS-95-8C	18	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-96-7C	16	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-97-6C	18	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-98-5D	14	07/21/92	08/05/92	NA	NA	12.0	<0.005	<0.005	0.068	0.250
SS-99-5E	16	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-100-4E	12	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-101-4D	20	07/21/92	08/05/92	NA	NA	1.3	<0.005	<0.005	0.009	0.018
SS-102-3D	20	07/21/92	08/05/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.006
SS-103-3E	12	07/21/92	08/05/92	NA	NA	9.7	<0.005	<0.005	0.040	0.090
SS-104-2E	16	07/21/92	08/03/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-105-2D	12	07/21/92	08/03/92	NA	NA	2.6(1)	<0.005	<0.005	<0.005	0.009
SS-106-1D	18	07/21/92	08/03/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-107-1E	14	07/21/92	08/03/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-108-8E	12	08/10/92	08/13/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-109-1A	12	08/10/92	08/13/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-110-6D	14	08/10/92	08/13/92	NA	NA	3.1	<0.005	<0.005	<0.005	<0.005
SS-111-1A	16	08/10/92	08/13/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-112-4C	16	08/10/92	08/13/92	NA	NA	9.4	<0.005	0.015	0.040	0.280
SS-113-8D	10	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-114-8D	18	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-115-7D	16	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-116-7D	18	08/18/92	08/28/92	NA	NA	1.3(1)	<0.005	<0.005	<0.005	<0.005
SS-117-6D	12	08/18/92	08/28/92	NA	NA	3.2(1)	<0.005	<0.005	<0.005	0.010
SS-118-6D	12	08/18/92	08/28/92	NA	NA	3.0(1)	<0.005	<0.005	<0.005	0.030
SS-119-5D	18	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-120-4D	10	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.005
SS-121-5D	16	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-122-3D	12	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-123-4D	14	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-124-3D	12	08/18/92	08/28/92	NA	NA	<1.0	<0.005	0.008	<0.005	<0.005
SS-125-2D	16	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-126-2D	12	08/18/92	08/28/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-127-1C	14	08/20/92	09/02/92	NA	NA	1.7(1)	<0.005	<0.005	<0.005	<0.005
SS-128-1B	14	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.005(2)
SS-129-1B	12	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-130-1C	16	08/20/92	09/02/92	NA	NA	1.5(1)	<0.005	<0.005	0.005	0.012
SS-131-2C	18	08/20/92	09/02/92	NA	NA	2.2(1)	<0.005	<0.005	<0.005	0.005
SS-132-2B	14	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-133-2C	18	08/20/92	09/02/92	NA	NA	2.2(1)	<0.005	<0.005	<0.005	<0.005
SS-134-2B	16	08/20/92	09/02/92	NA	NA	<1.0	<0.005	0.008(2)	<0.005	0.009
SS-135-3C	12	08/20/92	09/02/92	NA	NA	1.3(1)	<0.005	<0.005	<0.005	<0.005
SS-136-3B	10	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.006(2)
SS-137-3C	9	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-138-3B	14	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-139-4C	12	08/20/92	09/02/92	NA	NA	1.9(1)	<0.005	<0.005	<0.005	<0.005

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-140-4B	14	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-141-4C	12	08/20/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-142-4B	20	08/20/92	09/02/92	NA	NA	4.8(1)	<0.005	<0.005	<0.005	0.006
SS-143-5C	14	08/20/92	08/31/92	NA	NA	1.5(1)	<0.005	0.006	0.009	0.05
SS-144-5C	14	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-145-5B	12	08/20/92	08/31/92	NA	NA	1.8(1)	<0.005	0.005	0.005	0.020
SS-146-6C	18	08/20/92	08/31/92	NA	NA	2.6(1)	0.009	<0.005	0.020	0.100
SS-147-5B	14	08/20/92	08/31/92	NA	NA	1.9(1)	<0.005	<0.005	0.009	0.030
SS-148-6C	18	08/20/92	08/31/92	NA	NA	1.5(1)	<0.005	0.006	<0.005	0.024
SS-149-6B	20	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-150-7C	9	08/20/92	08/31/92	NA	NA	2.3(1)	0.013	0.009	0.030	0.090
SS-151-6B	14	08/20/92	08/31/92	NA	NA	1.7(1)	<0.005	<0.005	<0.005	0.016
SS-152-7C	12	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.006
SS-153-7B	12	08/20/92	08/31/92	NA	NA	1.4(1)	<0.005	<0.005	0.010	0.024
SS-154-7D	18	08/20/92	08/31/92	NA	NA	NA	NA	NA	NA	NA
SS-155-7B	14	08/20/92	08/31/92	NA	NA	1.7(1)	<0.005	<0.005	<0.005	0.010
SS-156-8C	14	08/20/92	08/31/92	NA	NA	1.0(1)	<0.005	<0.005	<0.005	<0.005
SS-157-8C	16	08/20/92	08/31/92	NA	NA	1.3(1)	<0.005	<0.005	<0.005	0.017
SS-158-8B	14	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-159-8B	12	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.006
SS-160-8A	18	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.006
SS-161-6A	14	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-162-8A	16	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-163-6A	18	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.008
SS-164-7A	18	08/20/92	08/31/92	NA	NA	<1.0	<0.005	<0.005	<0.005	0.006
SS-165-5A	20	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-166-5A	18	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-167-6A	14	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-168-6A	18	08/24/92	09/02/92	NA	NA	1.4(1)	<0.005	<0.005	0.006	0.016
SS-169-7A	10	08/24/92	09/02/92	NA	NA	3.3(1)	<0.005	<0.005	<0.005	<0.005

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-170-1D	12	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-171-1D	14	08/24/92	09/02/92	NA	NA	1.3(1)	<0.005	<0.005	<0.005	0.011
SS-172-7D	12	08/24/92	09/02/92	NA	NA	1.2(1)	<0.005	<0.005	<0.005	<0.005
SS-173-6D	14	08/24/92	09/02/92	NA	NA	1.3(1)	<0.005	<0.005	<0.005	<0.005
SS-174-5D	18	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-175-4D	18	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-176-1D	16	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-177-2D	14	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-178-3D	18	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-179-1C	16	08/24/92	09/02/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-180-2C	18	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-181-3C	18	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-182-4C	16	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-183-4B	14	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-184-3B	16	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-185-2B	20	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-186-1B	10	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-187-1A	20	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-188-2A	14	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-189-3A	16	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-190-4A	12	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-191-5A	14	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-192-5B	18	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-193-5C	16	08/27/92	09/10/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-194-6A	14	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-195-7A	14	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-196-7B	16	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-197-6B	12	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-198-7A	16	08/28/92	09/15/92	NA	NA	2.7(1)	<0.005	<0.005	<0.005	<0.005
SS-199-6A	18	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005

TABLE 6
ANALYTICAL RESULTS OF SOIL SAMPLES
COLLECTED FROM AERATION BEDS*
(results in parts per million [ppm])

Sample ID	Sample Depth (inches)	Date Sampled	Laboratory Analysis Return Date	TPH as Oil	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes
SS-200-4A	16	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-201-5A	20	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-202-3A	18	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-203-1B	14	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-204-2A	18	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-205-1C	14	08/28/92	09/15/92	NA	NA	1.4(1)	<0.005	<0.005	<0.005	<0.005
SS-206-2B	16	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-207-4A	12	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-208-2C	10	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-209-4B	16	08/28/92	09/15/92	NA	NA	6.4(1)	<0.005	<0.005	<0.005	0.015
SS-210-3C	16	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-211-5C	16	08/28/92	09/15/92	NA	NA	3.8(1)	<0.005	<0.005	<0.005	0.008
SS-212-5B	14	08/28/92	09/15/92	NA	NA	4.5(1)	<0.005	<0.005	<0.005	<0.005
SS-213-3B	12	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-214-5A	20	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-215-3A	18	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-216-6A	16	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-217-6B	16	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005
SS-218-6C	18	08/28/92	09/15/92	NA	NA	<1.0	<0.005	<0.005	<0.005	<0.005

NOTES:

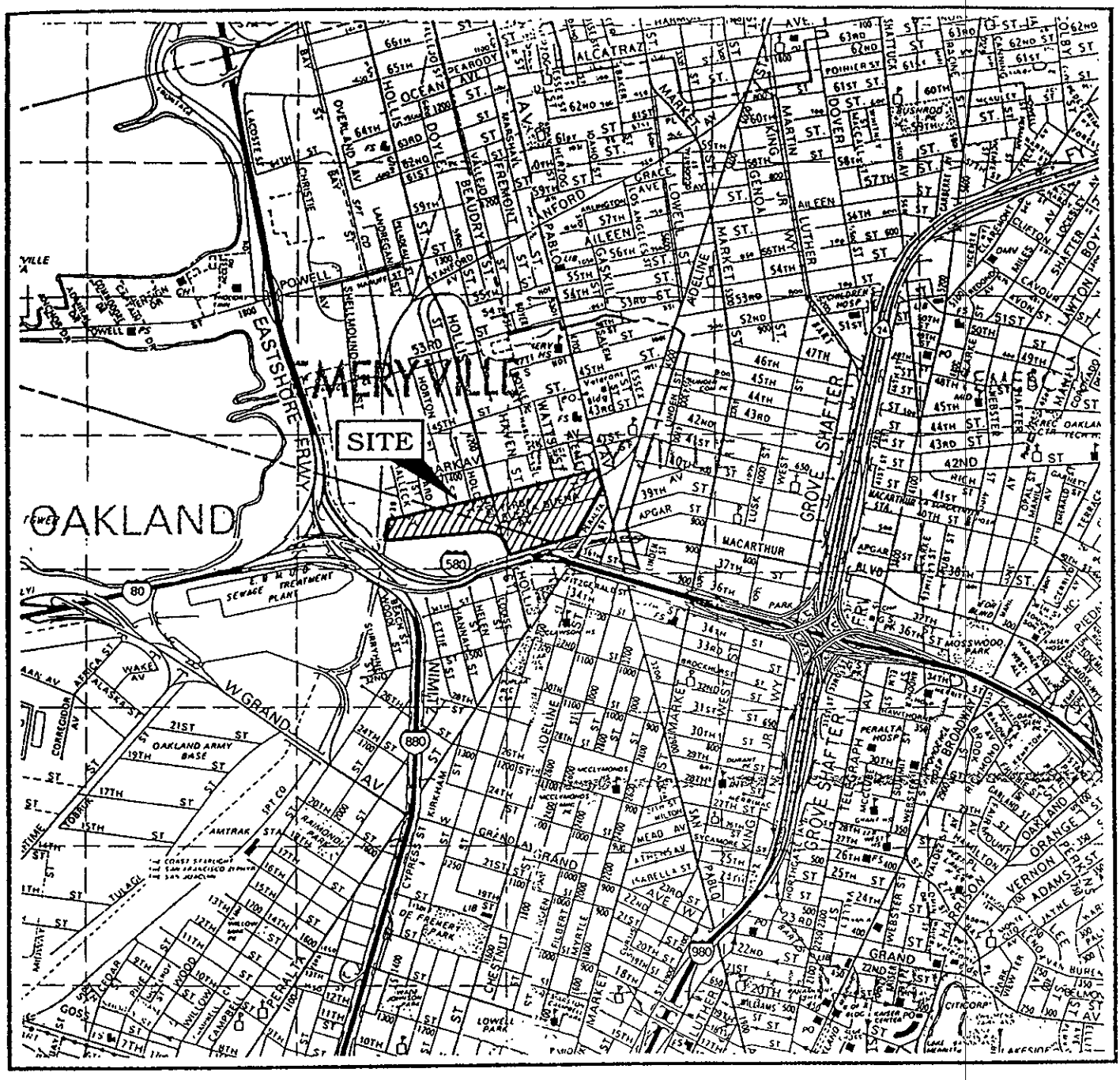
* All samples analyzed by Precision Analytical Laboratories Inc. of Richmond, California. Samples were analyzed for total petroleum hydrocarbons (TPH) as oil, diesel, and gasoline using Modified EPA Method 8015; and benzene, toluene, ethylbenzene, and xylenes using Modified EPA Method 8020.

NA = not analyzed

** Duplicate sample not analyzed

1 Weathered gasoline

2 Confirmed by laboratory by second column



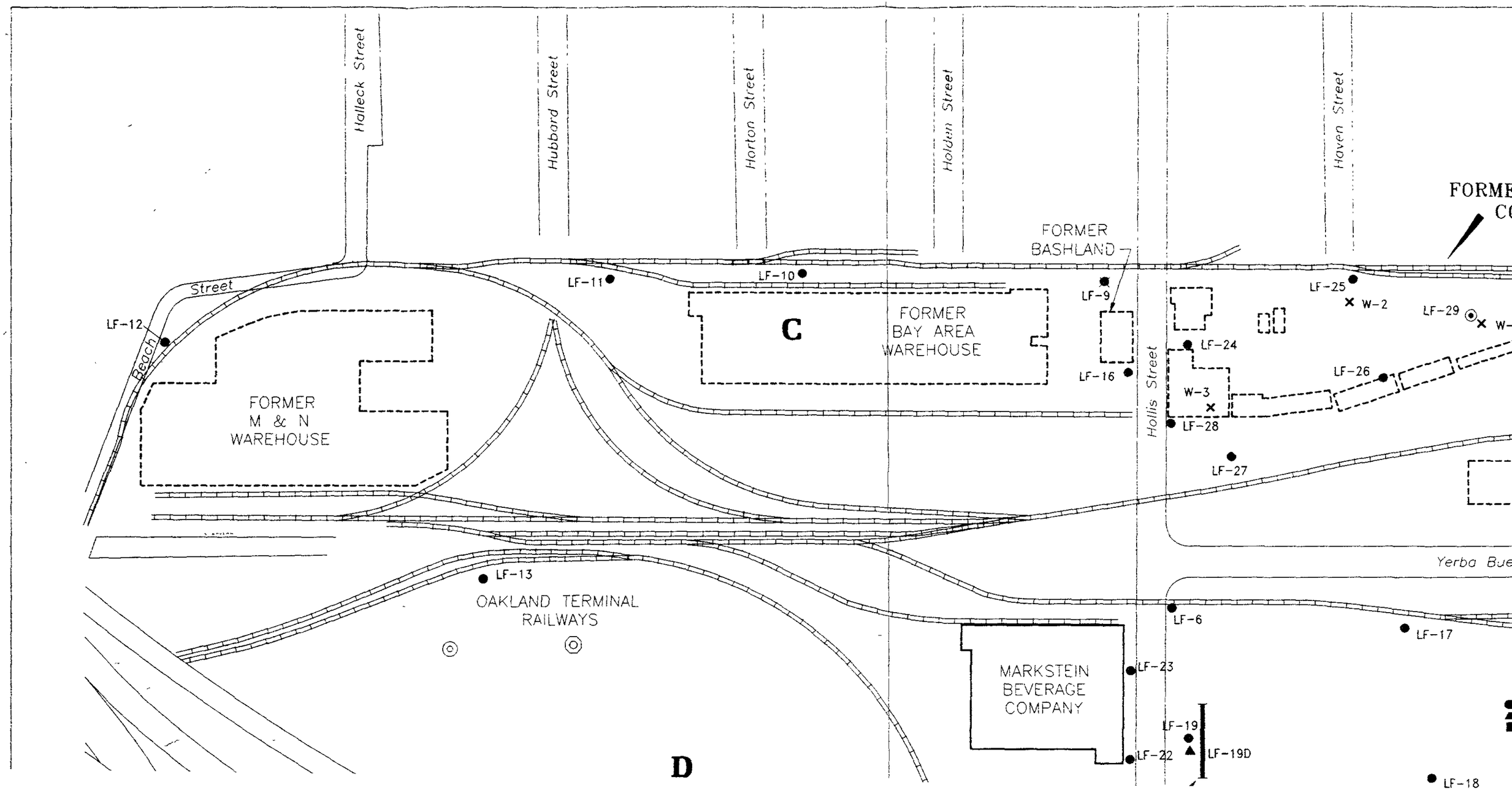
MAP SOURCE:
Alameda & Contra Costa Counties,
Thomas Bros. map, 1990 Edition

Figure 1 : SITE LOCATION MAP
YERBA BUENA PROJECT SITE

Project No. 1649

LEVINE • FRICKE
CONSULTING ENGINEERS AND HYDROGEOLOGISTS

1649ALS-SITE91.cvz


Halleck Street
Hubbard Street
Horton Street
Holden Street
Haven Street
Hollis Street
Beach Street
Yerba Bue
FORMER BASHLAND
FORMER BAY AREA WAREHOUSE
FORMER M & N WAREHOUSE
OAKLAND TERMINAL RAILWAYS
MARKSTEIN BEVERAGE COMPANY
C
D
LF-9
LF-10
LF-11
LF-12
LF-13
LF-16
LF-17
LF-18
LF-19
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LF-26
LF-27
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LF-29
W-2
W-3

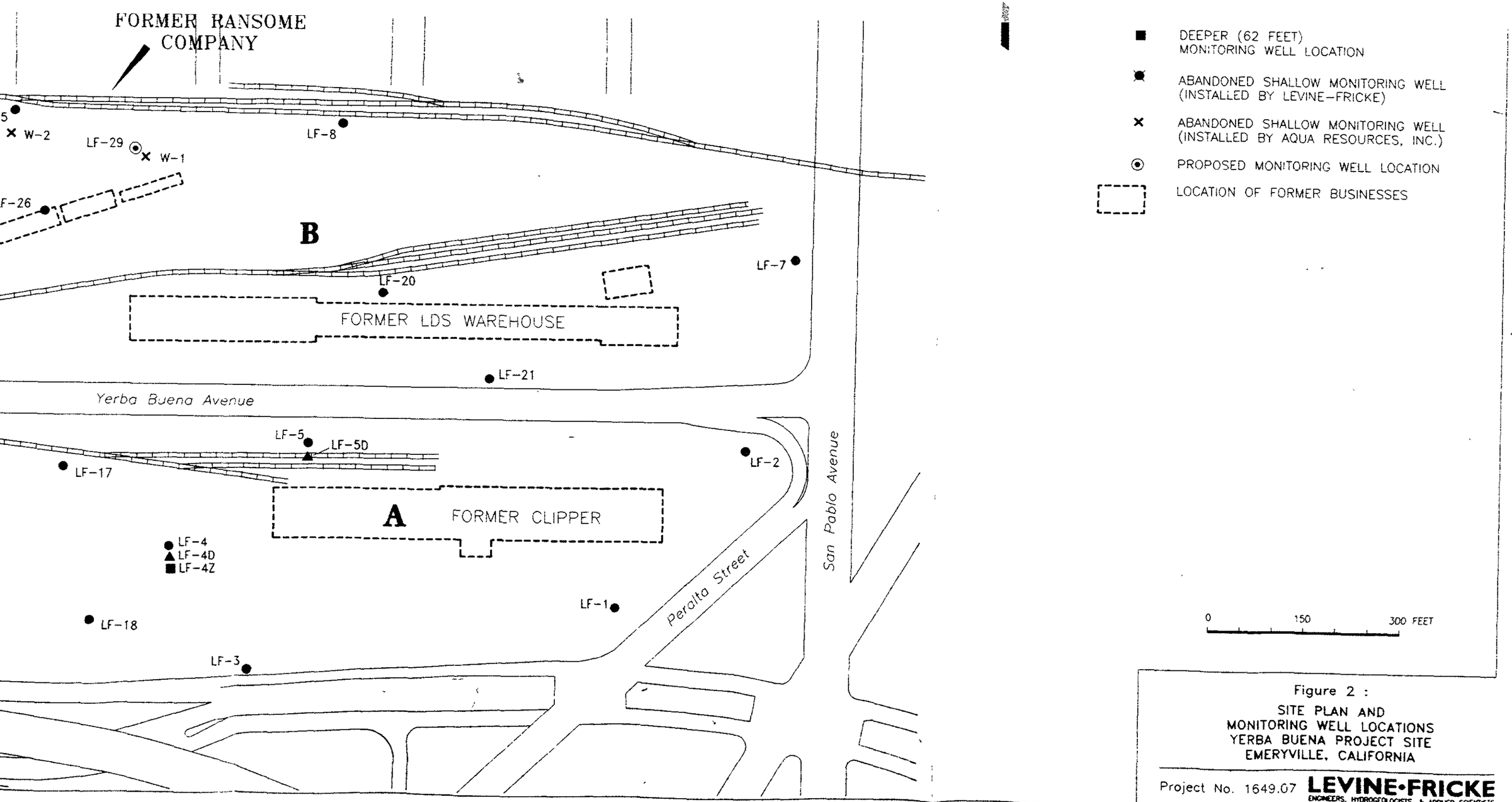


Figure 2 :
SITE PLAN AND
MONITORING WELL LOCATIONS
YERBA BUENA PROJECT SITE
EMERYVILLE, CALIFORNIA

Project No. 1649.07 **LEVINE-FRICKE**
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

BESLER BUILDING

HOLLIS STREET

JN-55-9.5 JN-53-9.5 JN-52-7 JN-8-8.5
JB-12-13.5 JN-54-7 JB-15-14 JN-51-9.5 JN-58-9.5
JB-13-13.5 JB-18-14 JN-48-8.5 JN-57-10
JB-34-9 JB-33-9 JN-50-7 JW-6-7 JE-2-6
JB-56-12 JB-9-4.5 JB-7-13.5
JB-14-14 JB-19-14 JB-25-14 JB-4-11
JB-16-14 JB-22-14 JB-27-13 JN-62-6 JE-1-7
JB-29-13 JE-49-8 JB-11-6.5
JB-17-14 JB-20-14 JB-23-14 JB-26-14 JB-28-13 JB-30-13 JB-31-13 JS-3-4 JW-5-6 JB-10-6.5
JE-44-9
JS-42-7
JB-65-13 JS-63-8
JB-21-14 JB-24-14 JB-67-13 JS-64-7.5
JW-69-6.5 JS-66-8
JS-59-8 JS-70-7 JS-68-9

KN-9-6.5 KN-1-8
KN-23-6
KW-22-7.5 KB-2-11.5 KE-4-5.5
KB-8-11.5
KW-14-6 KB-13-11.5 K KB-32-11 KS-11-5.5
KB-20-11 KE-30-6.5
KB-36-7.5 KB-35-8.5
KW-34-6.5 KS-24-6 KB-29-10.5 KE-31-7
KS-27-7
KS-33-5 KS-28-6.5
DN-31-5 DN-30-6.5
DW-32-4.5 DB-34-8.5 DN-29-4.5 LW-39-4.5
DW-33-5 D-2

FN-3-3 GN-1-3 GB-6-11
F FB-5-11 GB-5-11.5 G GB-2-6.5
FW-6-5 FS-4-6
LW-28-4 LN-27-6 LB-24-12.5
LN-34-3.5 LB-20-10.5 LS-10-4
LE-18-7
L LB-15-10.5
LW-35-4 LB-45-10.5
LS-30-4 LE-47-7
LW-3-5 LB-4-6.5 LE-1-3.5
LW-40-4.5 LE-6-5
LS-2-3
LS-36-4 LW-41-5
LS-43-6.5
DE-39-6
DB-35-9.5 DE-40-5.5 DN-22-2 75
DB-38-10 DB-19-5.5 DE-21-4
DB-46-10.5 DS-20-3 DS-41-4
DS-47-6 DE-45-5
DB-36-10 DE-16-2.5
DW-11-5
EW-3-3 EB-5-10 DS-14-5
E EE-1-3.5
ES-4-2

A'N3-4.5 CONCRETE VAULT
A'B-1-7 A
A'W-5-5
A'S-4-2.5 A'E-2-3
AN-3-5.5
AW-4-6 AE-2-3
A' AB-1-8.5
AS-5-3.5

BW-7-2.5 BB-5-4
BE-8-3
B
BW-2-3
BB-4-5
DB-24-5.5 DN-26-4 DN-4-3
DB-2-4 DW-43-3.5 DB-3-5.5
DE-6-4 DE-25-2
DW-44-6 DB-8-6
DN-1-3 DN-9-3
D
BW-1-1.5 B'1N-1-7.5
BB-3-5.5 CB-1-6.5 DS-27=2.75
DS-5-5 DW-42-5
DB-37-10
B'1B-3-9 BS-6-3 C CE-3-3
B'1W-2-5.5 CS-2-3
B' B'1E-5-6
B'1S-4-7

EXPLANATION

Excavation boundary

Sampling location (Analytical Result in Table 1)

DB-36-10
- Depth in feet
- Sample number
- B bottom sample; N,E,W,S North, East, West or South sidewall sample
- Excavation designation

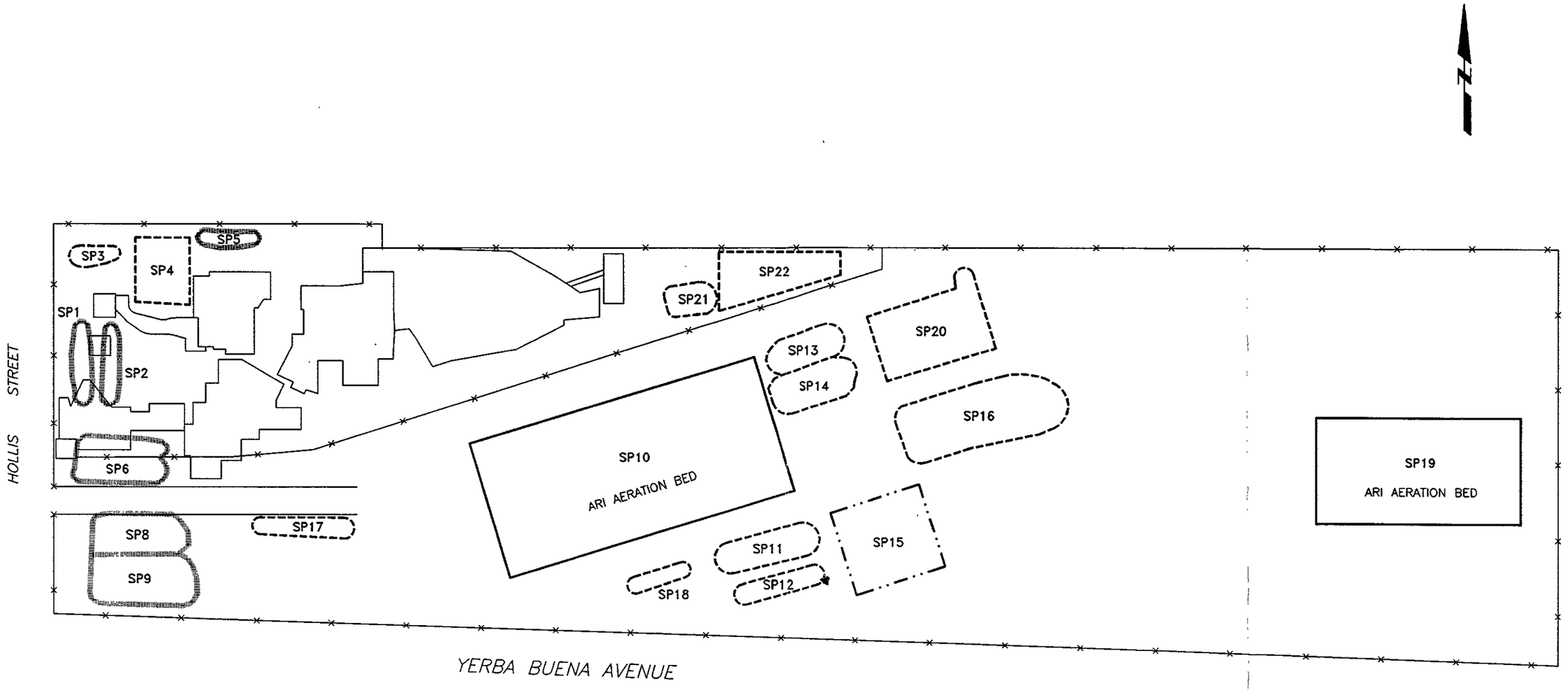
N

0 20 40 FEET

Figure 3 :
VERIFICATION SOIL SAMPLE LOCATIONS
FOR AREAS EXCAVATED BY
AQUA RESOURCES, INC.
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Project No 1649.07 LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1649S012 WEM EM 101392



EXPLANATION

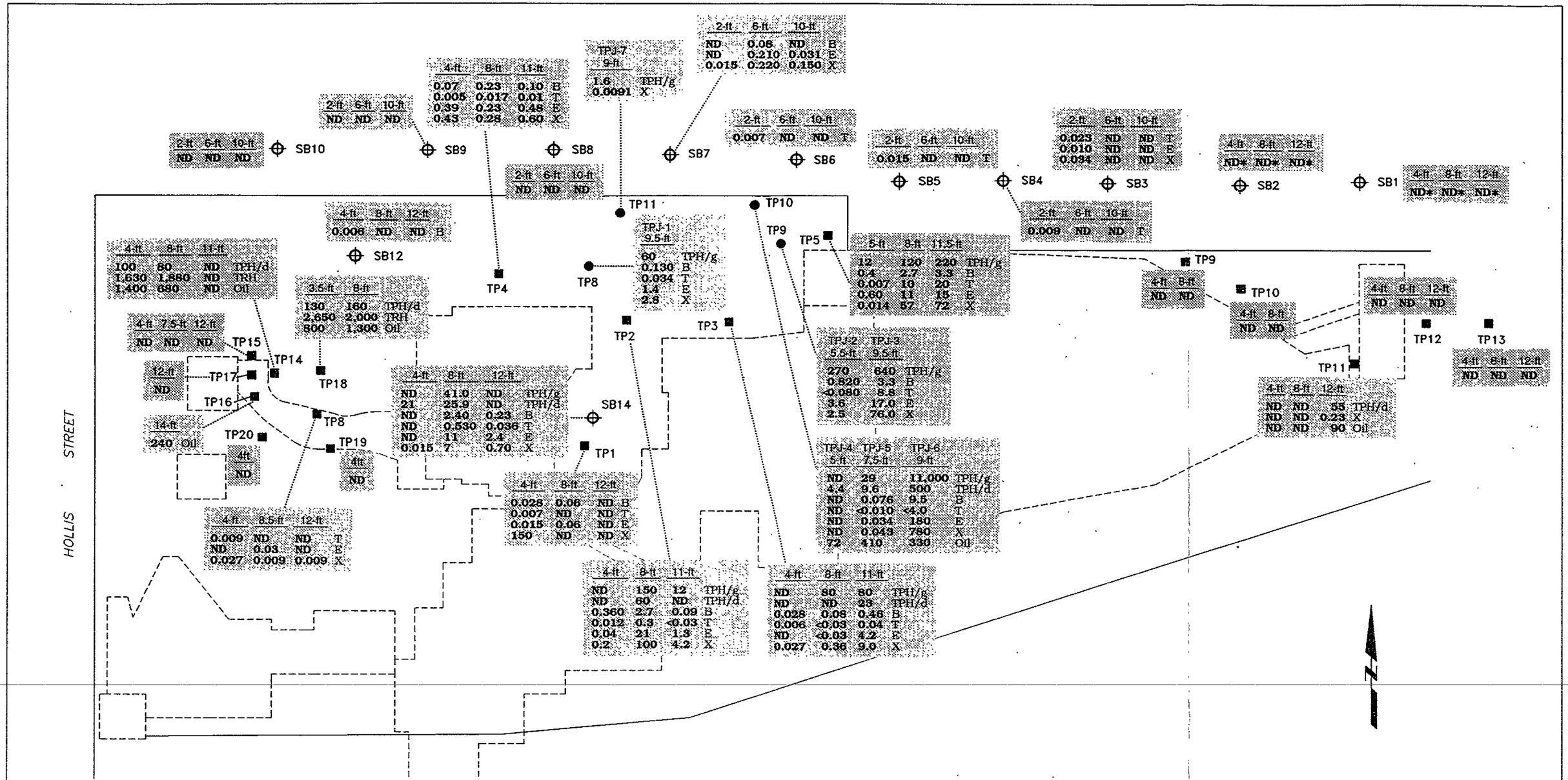
- Existing stockpiles (soils to be contained on site)
- Successfully aerated soils (used for backfill material or berms)
- Soils characterized as below backfill criteria (used for berms)

0 50 100 FEET

Figure 4 :
AQUA RESOURCES, INC.
APPROXIMATE STOCKPILE LOCATIONS
AND AERATION BEDS

Project No 1649.07 LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1649S017 JJB EM 102392



EXPLANATION

- Excavation boundary
- Test pit excavated by Aqua Resources Inc
- Phase I sampling - test pit
- Soil boring location

4-ft	8-ft	11-ft	
ND	60	ND	TPH/g
ND	150	12	TRH
0.036	2.7	0.009	B
0.012	0.3	ND	T
0.04	21	1.3	E
0.2	100	4.2	X

Depth in feet

Chemical Concentrations

ND Not detected

Laboratory detection limits (unless otherwise noted):

<10	TPH/g
<50	TPH /d
<50	TRH
<10	B
<0 005	T
<0 005	E
<0 005	X
<50	Oil

* Samples not analyzed for BTEX compounds

NOTE:

All samples analyzed for the following compounds using Modified EPA Methods 8015 and 8020 unless otherwise noted

KEY TO ABBREVIATIONS

TPH/g	Total Petroleum Hydrocarbons as gasoline
TPH/d	Total Petroleum Hydrocarbons as diesel
TRH	Total Recoverable Hydrocarbons
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total Xylenes

Figure 5 :

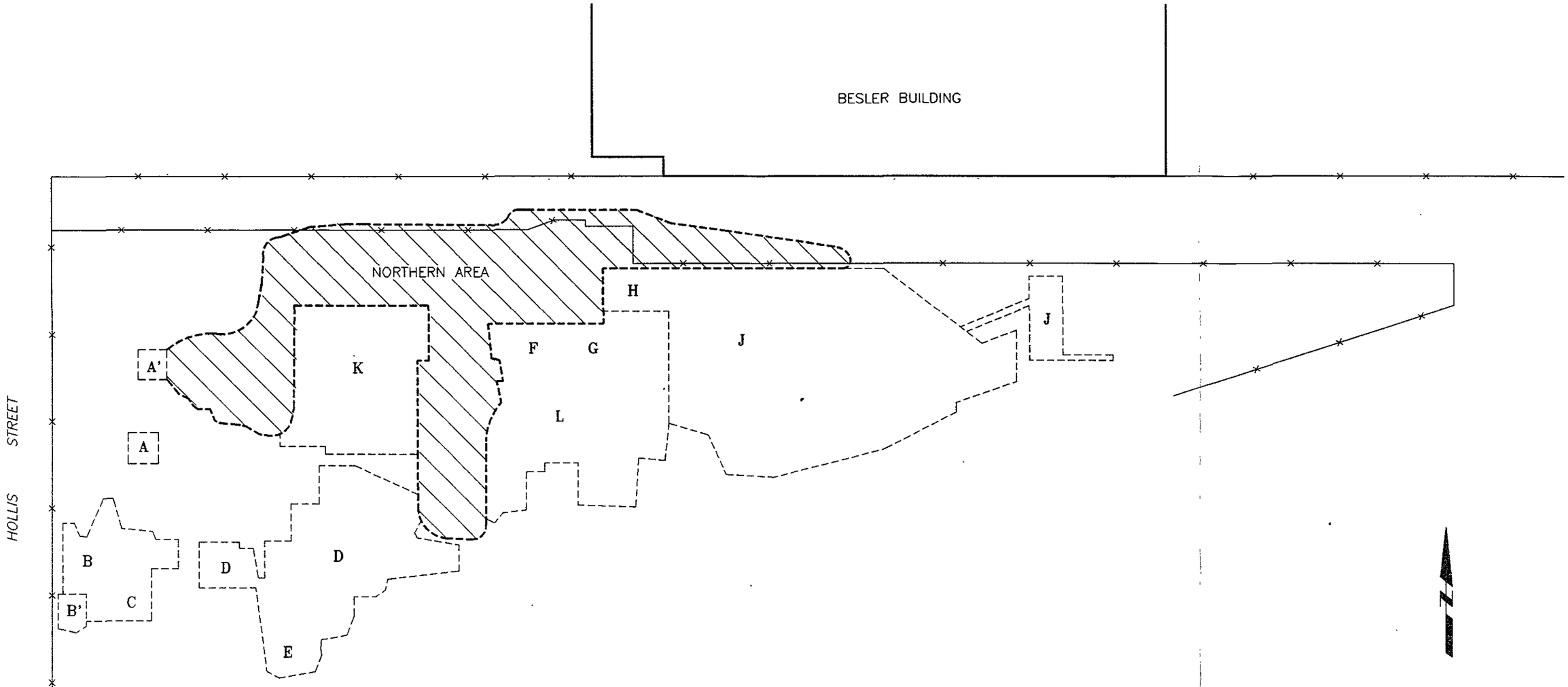
ANALYTICAL RESULTS FOR TEST PITS AND SOIL BORINGS FORMER RANSOME PROPERTY

Project No. 1649.07

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

J1813OCT92MP

16498011 JJB EM 100992



EXPLANATION

Northern Area excavation boundary

F — Excavations completed by Aqua Resources, Inc.

Figure 6 :
APPROXIMATE EXTENT OF EXCAVATIONS
COMPLETED BY LEVINE-FRICKE
NORTHERN AREA

Project No 1649 07 LEVINE•FRICKE
ENGINEERS HYDROGEOLOGISTS & APPLIED SCIENTISTS

1649S01 JJB EM 101392

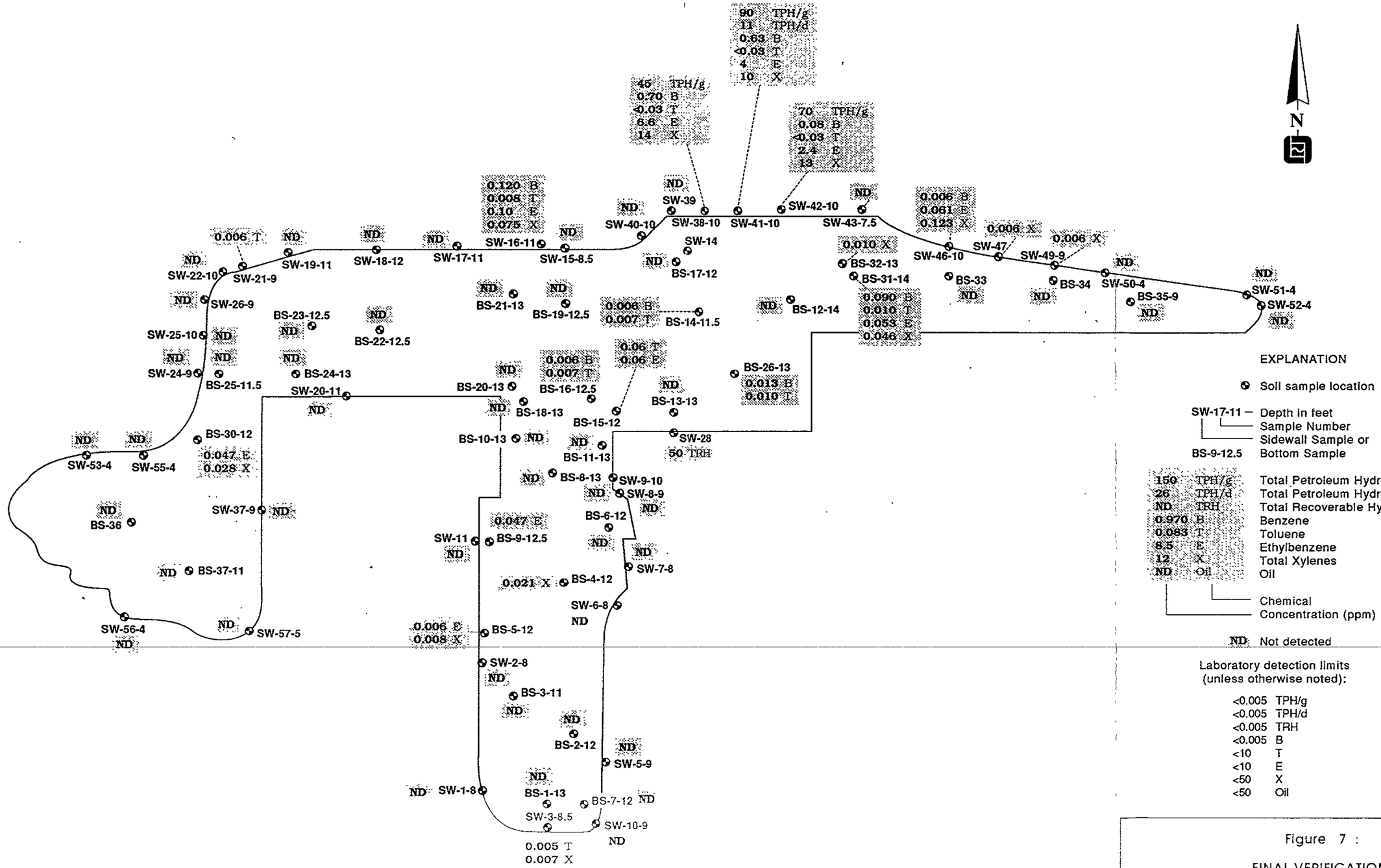


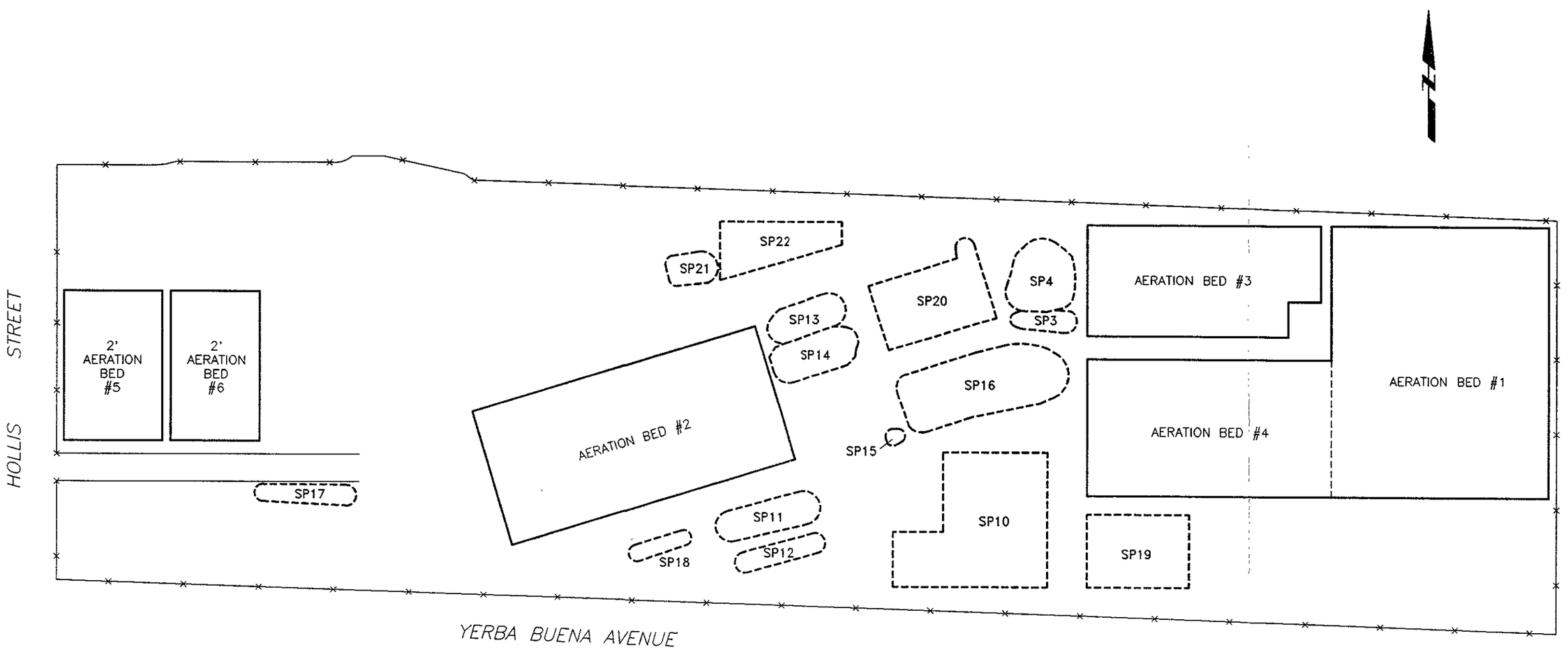
Figure 7 :

FINAL VERIFICATION
SOIL SAMPLE LOCATIONS AND RESULTS
NORTHERN AREA EXCAVATION

Project No. 1649 07

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

30CT92JJ8 JUN3/MP-cdbe 9999 01



EXPLANATION

Approximate stockpile location

Approximate aeration bed location

0 50 100 FEET

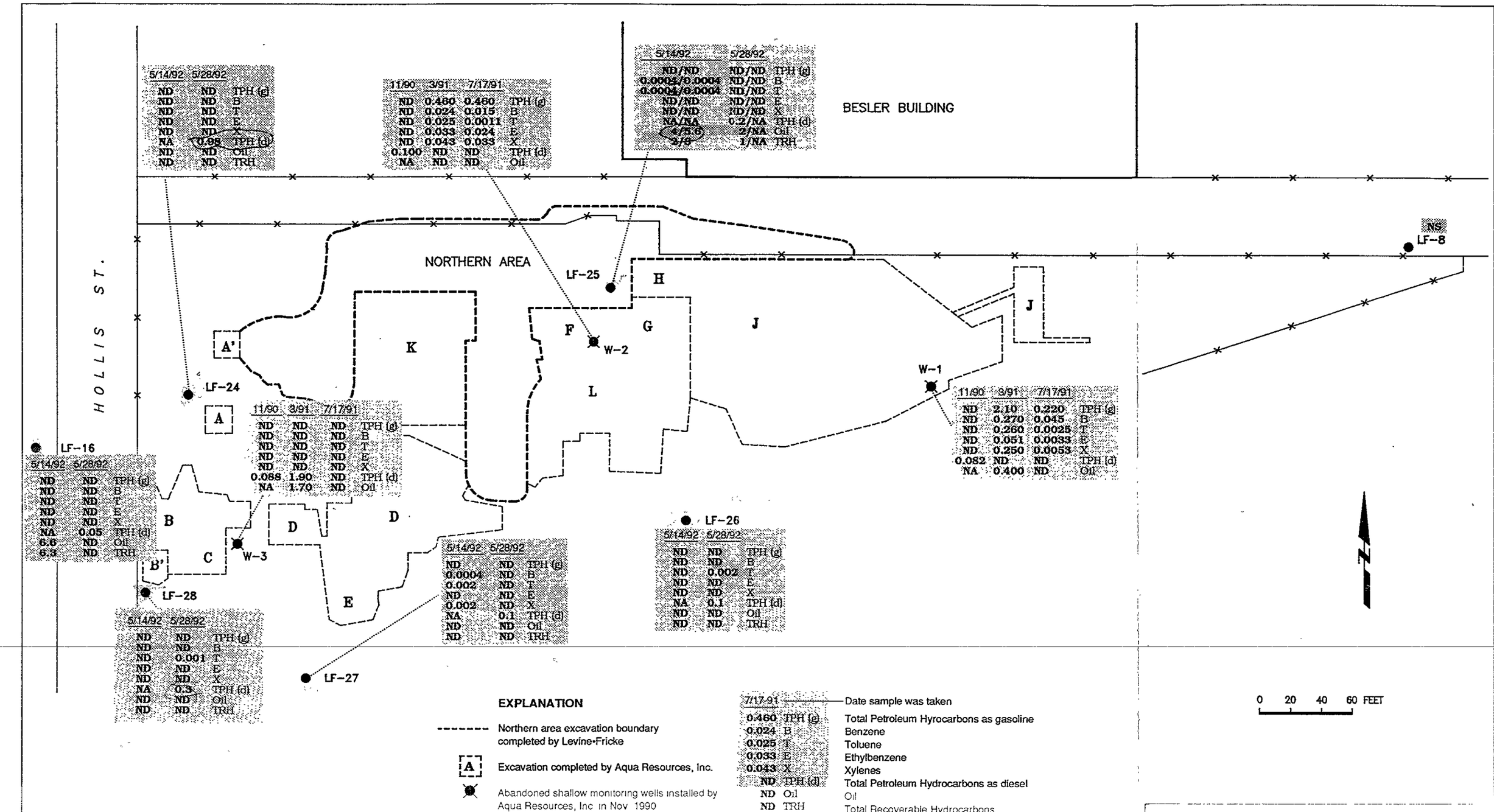
Figure 8 :

APPROXIMATE LOCATIONS OF AERATION BEDS AND STOCKPILES

Project No 1649.07 LEVINE-FRICKE

ENGINEERS HYDROGEOLOGISTS & APPLIED SCIENTISTS

1649S01C JJB EM 101392



EXPLANATION

- Northern area excavation boundary completed by Levine•Fricke
- A — Excavation completed by Aqua Resources, Inc.
- Abandoned shallow monitoring wells installed by Aqua Resources, Inc in Nov 1990
- Shallow monitoring well location
- 0.0004/0.0004 — Duplicate sample

7/17-91 — Date sample was taken

0.460 TPH (g) — Total Petroleum Hyrocarbons as gasoline
0.024 B — Benzene
0.025 T — Toluene
0.033 E — Ethylbenzene
0.043 X — Xylenes
ND TPH (d) — Total Petroleum Hydrocarbons as diesel
ND Oil — Oil
ND TRH — Total Recoverable Hydrocarbons

Chemical compound

Concentration in parts per million (ppm)

- ND — Not detected above method detection limits
- NA — Not analyzed
- NS — Not sampled

Figure 9 :

HISTORICAL GROUND-WATER QUALITY DATA (ppm)
FORMER RANSOME COMPANY PROPERTY

Project No. 1649.07

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

1649S004.WEM:EM 060392

WEM 08 JUN 92 MP/JSM 4AUG92RYL

APPENDIX A

CORRESPONDENCE FROM THE ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY TO RANSOME COMPANY, DATED FEBRUARY 1991

AND

CORRESPONDENCE FROM THE ALAMEDA COUNTY HEALTH CARE SERVICES TO CATELLUS DEVELOPMENT CORPORATION DATED MARCH 5, 1991

AND

CORRESPONDENCE FROM THE REGIONAL WATER QUALITY CONTROL BOARD TO LEVINE*FRICKE, DATED JUNE 24, 1992

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEA
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

4 February 1991

S. Kinear Smith
Ransome Company
P.O. Box 8506
4030 Hollis Street
Emeryville, CA 94662

Subject: Soil and Groundwater Investigation being conducted at the former Ransome Company site, 4030 Hollis Street, Emeryville.

Dear Mr. Smith:

Thank you for the report prepared by Aqua Resources Incorporated, dated 16 January, 1991, and submitted to this office for review. This agency is satisfied in the quality of the soil investigation conducted at this site and approval is granted for the excavation of contaminated regions of the property as proposed in the Aqua Resources report. Please ensure that verification samples are collected in each excavation zone to ensure that no hydrocarbon contamination in excess of 1,000 parts per million remains. The absence of this verification sampling will hinder a final closure of the project in accordance with guidelines established by the Regional Board.

In the Aqua Resources report various options for the treatment of contaminated soil are proposed. The options specified include:

The on-site aeration of gasoline contaminated soil.

The on-site bioremediation of diesel and oil contaminated soil.

The transport of diesel and oil contaminated soil to an off-site location for bioremediation treatment.

The off-site transport of contaminated soil for landfill disposal.

This agency has no objection to the pursuit of these four options, however, please be aware that the involvement of other regulatory agencies may be involved and that prior to this office granting approval for the implementation of a specific treatment process assurance will be required that all appropriate requirements of other agencies are being met.

S. Kinnear Smith
Ransome Company
P.O. Box 8506
4030 Hollis Street
Emeryville, CA 94662
Re. 4030 Hollis, Emeryville
4 February 1991
Page 2 of 3

The on-site aeration of gasoline contaminated soil may require the issuance of a permit from the Bay Area Air Quality Management District. Following the issuance of this permit or the granting of a waiver for the need for such a permit, approval for the implementation of this process will ensue.

The off-site transportation of contaminated soil for treatment at another location or landfill disposal will first require that this soil be characterized in accordance with § 66700 and § 66702 of Title 22 of the California Code of Regulations. Should this soil constitute hazardous waste, transport off-site will require adherence to the uniform hazardous waste manifest provisions of Title 13 of the CCR. An off-site location treating hazardous wastes must be licensed by the state as a hazardous waste treatment, storage and disposal facility.

If testing results determine that this soil constitutes hazardous waste, on-site treatment may proceed provided that a permit for the treatment is obtained from the Department of Health Services or that the Permit by Rule provisions of § 66392 of Title 22 of the CCR are strictly followed. If the soil constitutes non-hazardous waste than no such permit will be required for treatment. The specific classification of this soil must be completed prior to this agency granting approval for the implementation of a specific treatment proposal outlined in the Aqua Resources report.

Approval is granted for the installation of an additional groundwater monitoring well in the vicinity of the former fuel pump island. It is our understanding that this installation will take place following the completion of further soil excavation in this region.

As recommended in the Aqua Resources report, further groundwater monitoring is required at this site. Please be aware that further investigative actions may be required if a groundwater problem necessitating greater clarification is detected during this monitoring program. You can anticipate a minimum of one year of quarterly monitoring as being the minimum necessary to fulfill the requirements of the San Francisco Bay Regional Water Quality Control Board. The frequency of or need for further monitoring will be based upon the data derived during this first year.

S. Kinnear Smith
Ransome Company
P.O. Box 8506
4030 Hollis Street
Emeryville, CA 94662
Re. 4030 Hollis Emeryville
4 February 1991
Page 3 of 3

If you have any questions concerning this matter or the steps which must now be taken, please contact me at (415)271-4320. The contents of this letter have been discussed with Mark Milani of Aqua Resources Incorporated.

Sincerely,

Dennis J. Byrne
Senior Hazardous Materials Specialist

cc: Lester Feldman, SFBRWQCB
Howard Hatayama, DOHS
Rafat Shahid, Assistant Director, Alameda County Department of Environmental Health.
Ric Notini, Catellus Development Corporation
Mark Milani, Aqua Resources Inc.
Amanda Spencer, Levine-Fricke

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

5 March 1991

Rick Notini
Catellus Development Corporation
201 Mission Street
Suite 250
San Francisco, CA 94105

Subject: Remedial Plan for the Yerba Buena Project in Oakland.

Dear Mr. Notini:

Thank you for the remedial plan, dated 11 February 1991, prepared by Levine-Fricke and submitted to this office. A review of this plan has been completed and approval is granted for implementation of the following components:

* The physical excavation of lead and zinc contaminated soils for disposal as hazardous waste.
* The physical excavation of PCB contaminated soil to a residue of no greater than one part per million.
* The installation of a French Drain along the west side of Hollis Street for the collection of ground water.
* The installation of additional ground water monitoring wells.

Approval of the proposed encapsulation of hydrocarbon contaminated soil as described in the remedial plan will be granted upon the completion of the fish bioassay study and submittal of this data for review.

The contents of this letter have been discussed with Amanda Spencer of Levine-Fricke. If you have any questions concerning this matter, please contact me at (415)271-4320.

Sincerely,

Dennis J. Byrne
Senior Hazardous Materials Specialist

cc: Lester Feldman, SFBRWQCB
Tom Gandesbery, SFBRWQCB
Howard Hatayama, DOHS
Rafat Shahid, Assistant Director, Alameda County Department of Environmental Health.
Don Marini, Catellus Development Corp.
Amanda Spencer, Levine-Fricke

STATE OF CALIFORNIA

PETE WILSON, Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION
2101 WEBSTER STREET, SUITE 500
OAKLAND, CA 94612

Phone: (510) 464-1255
FAX: (510) 464-1380

June 24, 1992
File No. 2223.09(LF)

Amanda Spencer
Senior Hydrogeologist
Levine Fricke
1900 Powell Street, 12th Floor
Emeryville, CA 94608

SUBJECT: Catellus - Yerba Buena Project, Emeryville

Dear Ms. Spencer:

This letter is written in follow-up to your meeting of June 22 with Lester Feldman of my staff concerning the subject proposed development project. I understand that Dennis Byrne of Alameda County Health Care Services Agency has been acting as lead in resolving soil and groundwater pollution issues for the sites involved. I also understand that the overall project involves identification and remediation of volatile organics in the groundwater at one location, verification of hydrocarbon cleanup in the groundwater at several locations, the closure of several underground fuel tanks, remediation of hydrocarbon contaminated soils related to former underground tanks, and the relocation of some hydrocarbon contaminated soils within the project boundaries.

As indicated by Mr. Feldman, this Regional Board staff has no objection to the relocation of hydrocarbon contaminated soils within the project area as proposed in the Draft Plan dated March 10, 1992. This Draft Plan should be re-named the Soils Management Plan and be amended to include specific guidance language providing for the maintenance of the proposed encapsulations to protect water quality. As indicated by Mr. Feldman and Mr. Byrne any future activity on the site which necessitates excavation of the soils of concern should be managed in such a way as to mitigate any water quality problem which could arise (e.g., polluted surface runoff).

Additional concerns which should be addressed for the subject site prior to any leased business occupancy or sale include the following:

1. A Notice is to be placed on the recorded deed(s) whenever soils containing elevated levels of pollutants are contained on any affected parcel.

2. An Self-Monitoring Program shall be in place at all times acceptable to the Alameda County Health Agency or the Regional Board staff. This program shall provide for monitoring of all groundwater under active remediation, and shall provide for verification of all completed cleanups. An Annual Report shall be filed with both agencies.

3. Completion of any groundwater cleanup will be considered by the Board based upon a recommendation for Closure by the Alameda County Health Agency per Board guidelines.

Please direct any questions to Lester Feldman of my staff at (510) 464-1332.

Sincerely,

Steven R. Ritchie,
Executive Officer

cc: Dennis Byrne, Alameda County Health Agency
Don Marini, Catellus
Ric Notini, Catellus
Jim Levine, Levine Fricke

SOIL SAMPLING PROCEDURES

Sampling Procedures

Soil samples were collected for chemical analysis to provide data to evaluate the extent of chemicals in soils at the Site. Soil samples were collected in the field by driving a precleaned brass tube into the soil using a clean rubber mallet. Where access was limited or hazardous to Levine·Fricke personnel, soil was collected from the bucket of the excavator. Approximately 3 inches of soil were scraped off the top of the soil in the bucket and a brass tube was driven into the representative soil in the bucket using a rubber mallet. The sample tubes were filled completely to minimize headspace and loss of volatile compounds, if present. The ends of the tubes were covered with aluminum foil, and capped with air-tight plastic caps to prevent possible moisture and chemical loss.

After being sealed and labeled, soil samples were immediately placed in a chilled cooler containing ice for delivery to the analytical laboratory under strict chain-of-custody protocols.

Decontamination Procedures

All equipment used for collecting soil samples during the investigation was properly decontaminated before and after each use, and before initial use at the Site. This was accomplished through steam cleaning and/or washing with Alconox (a laboratory grade detergent) and rinsing with deionized, distilled, or fresh water.

APPENDIX C

GEOTECHNICAL ENGINEERING FIELD SERVICES (BACKFILL AND COMPACTION PROCEDURES)

GEOTECHNICAL ENGINEERING FIELD SERVICES
(BACKFILL AND COMPACTION PROCEDURES)

Geotechnical engineering field services were conducted at the Ransome property ("the Property") at the Yerba Buena Project site in Emeryville and Oakland, California, following excavation of petroleum hydrocarbon-affected soils. Specifically, Levine•Fricke observed backfilling activities conducted at the property in four phases (Phase I, II, III, and IV) during the period from September 1991 through May 1992. A Levine•Fricke field engineer was on site during the four phases to monitor fill placement, compaction activities, and to conduct field density tests.

H. K. Grading Contractors Inc., of Livermore, California, conducted Phase I activities during the period from September 3 through September 13, 1991, under the direction of Aqua Resources, Inc. (ARI). Plant Reclamation of Richmond, California, conducted Phase II, III, and IV of the backfilling activities during the period from October 1991 to May 1992 under the direction of Levine•Fricke personnel.

Backfill material specifications and compaction requirements were presented in ARI's reports entitled "Proposed Excavation Backfill Procedure, 4030 Hollis Street, Emeryville, California," dated July 26, 1991, and "Response to the Levine•Fricke Backfill Letter, Proposed Excavation Backfill Procedure, 4030 Hollis Street, Emeryville, California," dated August 26, 1991.

All backfill materials were submitted to Woodward-Clyde Consultants of Pleasant Hill, California, for laboratory compaction testing ASTM D1557 (see Table C-1). Backfill materials included on-site material (TP1 and TP2), on-site successfully aerated soil excavated stockpiles (AS and BS), and imported backfill material (SP, BM, and IB). Field and laboratory compaction test curves are included in this appendix.

Imported materials were supplied by Rogers Trucking and Equipment, Inc., of South San Francisco, California. Soils were placed in thin lifts not to exceed 8 inches in loose thickness and moisture conditioned to within 3 percent of optimum moisture content. Soils were compacted by a minimum of nine passes of the compactor to achieve at least 90 percent relative compaction as determined by the ASTM D1557 Laboratory

Compaction Test. Field and laboratory compaction test curves are included in this appendix.

Field compaction tests were conducted using a nuclear density/moisture testing instrument after the lifts of fill were placed, moisture conditioned, and compacted. Fill areas were tested to meet the 90 percent relative compaction. Table C-2 presents the field compaction test results. Field compaction test locations were selected on the basis of random sampling, with emphasis on areas with high moisture contents. The fill was recompacted and retested until test results indicated 90% compaction.

Benches measuring 0.5- to 1-foot wide were excavated every 3 vertical feet in the zone where the backfill was compacted, except in areas where the excavation was adjacent to sidewalks, fences, or other surface structures.

For excavations that extended below the ground-water table (approximately 12 feet bgs), clean imported gravel was placed to a depth of approximately 1 to 2 feet above the ground-water level. The actual level of the gravel was determined by the field engineer. The imported gravel was Type B Class II Permeable Material with approximately 70 percent of the material coarser than 1/2 inch. Geotextile fabric was laid on top of the gravel to act as a separator before placing the backfill material.

DRAFT

TABLE C-1
RESULTS OF LABORATORY COMPACTION TESTS*
FIELD GEOTECHNICAL SERVICES
RANSOME SOIL REMEDIATION
EMERYVILLE/OAKLAND, CALIFORNIA

Sample ID	Sample Name	Backfill Material	Color and Description	Maximum Dry Density (pcf)**	Optimum Moisture Content (% Dry Wt.)
ARI PHASE I					
1) Test Pit 1	TP1	On-site Soil	Dark gray silt	103.1	18.7
2) Test Pit 2	TP2	On-site Soil	Light brown	114.7	13.5
3) Stockpile	SP	Imported Clean Fill***	Gray lean clay	117.3	13.7
4) Aeration Stockpile	AS	Aerated Soil	Gray lean sandy clay	123.5	10.7
Levine•Fricke PHASE II					
5) Backfill Material	BM	Imported Clean Fill****	Brown clayey sand	129.8	9.0
PHASE III					
6) Backfill Stockpile	BS	Aerated Soil	Brown sandy clay	122.9	11.5
7) Import Backfill	IB	Imported Clean Fill	Gray-brown clayey sand	132.0	7.9

NOTES:

* Laboratory compaction tests conducted by Woodward-Clyde Consultants of Pleasant Hill, California using Test Method ASTM 1557.

** pcf - pounds per cubic foot

*** Backfill material supplied by Port Costa Materials, Inc. of Port Costa, California.

**** Backfill material supplied by Rogers Trucks & Equipment, Inc. of South San Francisco, California.

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name (1)	Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
AREA A1									
Phase I									
04-Sep-91	1	TP2 (2)	A1	5.5	104.8	15.10	91		90
04-Sep-91	2	SP	A1	5.0	105.9	18.04	90		90
04-Sep-91	3	SP	A1	4.5	107.6	16.26	92		90
05-Sep-91	4	SP	A1	3.5	108.6	15.76	93		90
AREA A2									
Phase I									
05-Sep-91	1	SP	A2	5.0	106.6	16.23	91		90
05-Sep-91	2	SP	A2	4.5	112.0	14.39	95		90
05-Sep-91	3	SP	A2	3.5	110.8	15.91	94		90
06-Sep-91	4	SP	A2	2.5	106.8	17.27	91		90
06-Sep-91	5	SP	A2	1.5	103.3	12.86	90		90
			Top of Existing Fill Elevation**						
AREA B1									
Phase I									
03-Sep-91	1	AS	W-1	4.5	108.6	14.12	88		90
03-Sep-91	2	AS	E-1	4.5	112.8	11.93	91		90
03-Sep-91	3	AS	E-2	4.5	98.00	10.18	79		90
03-Sep-91	4	AS	E-2	4.5	102.3	14.50	83	retest of 3	90
03-Sep-91	5	AS	E-2	4.5	104.3	15.20	84	retest of 3	90
03-Sep-91	6	AS	W-2	4.5	103.6	15.39	84		90
03-Sep-91	7	AS	W-2	4.5	112.3	14.91	91	retest of 6	90
03-Sep-91	8	TP1 (2)	E-2	4.5	99.70	14.35	97	retest of 3	90
03-Sep-91	9	TP1 (2)	W-1	4.5	110.3	13.73	107	retest of 1	90
04-Sep-91	10	SP	E-1	4.0	106.4	16.29	91		90
04-Sep-91	11	SP	E-2	4.0	108.9	16.86	93		90
04-Sep-91	12	SP	W-1	4.0	105.4	16.44	90		90
04-Sep-91	13	SP	W-2	4.0	114.1	16.17	97		90
04-Sep-91	14	SP	W-1	3.5	109.2	15.60	93		90
04-Sep-91	15	SP	W-2	3.5	106.2	17.32	91		90
04-Sep-91	16	SP	E-1	3.5	106.0	16.50	90		90
04-Sep-91	17	SP	E-2	3.5	109.6	16.50	93		90
04-Sep-91	18	SP	E-1	2.5	106.8	15.61	91		90
04-Sep-91	19	SP	E-2	2.5	109.2	15.08	93		90
04-Sep-91	20	SP	W-1	2.5	114.4	15.46	98		90
04-Sep-91	21	SP	W-2	2.5	107.0	16.68	91		90
04-Sep-91	22	SP	E-2	2.0	110.9	16.74	95		90
04-Sep-91	23	SP	E-1	2.0	108.0	17.34	92		90
04-Sep-91	24	SP	W-1	2.0	107.5	13.08	92		90

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name	(1) Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
04-Sep-91	25	SP	W-2	2.0	111.7	15.23	95		90
05-Sep-91	26	SP	E-1	1.5	111.1	16.74	95		90
05-Sep-91	27	SP	W-1	1.5	109.5	17.64	93		90
			Top of Existing Fill Elevation						
AREA B2									
Phase I									
04-Sep-91	1	SP	B2	4.0	105.9	16.20	90		90
04-Sep-91	2	SP	B2	3.5	109.2	17.10	93		90
05-Sep-91	3	SP	B2	2.5	98.10	17.84	84		90
05-Sep-91	4	SP	B2	2.5	111.8	16.55	95	retest of 3	90
05-Sep-91	5	SP	B2	2.0	107.1	16.00	91		90
05-Sep-91	6	SP	B2	1.5	107.1	15.96	91		90
			Top of Existing Fill Elevation						
AREA D									
Phase I									
04-Sep-91	1	SP	N-1	8.0	112.9	14.96	96		90
04-Sep-91	2	SP	N-2	8.0	106.2	16.75	91		90
04-Sep-91	3	SP	S-1	8.0	116.0	12.97	99		90
04-Sep-91	4	SP	S-2	8.0	108.5	16.31	93		90
04-Sep-91	5	SP	N-1	7.5	106.3	16.23	91		90
04-Sep-91	6	SP	N-1	7.5	109.0	15.35	93		90
04-Sep-91	7	SP	N-2	7.5	105.7	17.21	90		90
04-Sep-91	8	SP	N-2	7.5	106.9	17.65	91		90
04-Sep-91	9	SP	N-1	6.5	103.9	17.79	89		90
04-Sep-91	10	SP	N-2	6.5	111.5	16.18	95		90
04-Sep-91	11	SP	N-1	6.5	109.9	15.98	94	retest of 9	90
04-Sep-91	12	SP	N-1	6.5	105.7	16.88	90	retest of 9	90
05-Sep-91	13	SP	N-1	6.0	113.1	12.57	96		90
05-Sep-91	14	SP	N-1	6.0	116.6	12.97	99		90
05-Sep-91	15	SP	S-1	7.0	112.4	15.28	96		90
05-Sep-91	16	SP	S-2	7.0	108.9	16.23	93		90
05-Sep-91	17	SP	C-1	8.0	109.9	14.96	94		90
05-Sep-91	18	SP	C-1	7.0	116.6	14.28	99		90
05-Sep-91	19	SP	S-1	6.0	108.9	16.70	93		90
05-Sep-91	20	SP	C-1	6.0	109.7	16.64	93		90
05-Sep-91	21	SP	S-2	6.0	107.3	16.48	92		90
05-Sep-91	22	SP	C-1	5.0	116.6	14.28	99		90
05-Sep-91	23	SP	N-1	5.0	116.6	12.97	99		90
06-Sep-91	24	SP	S-2	5.0	107.3	16.48	92		90
11-Sep-91	25	SP	C-1	4.0	114.2	14.39	97		90

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name (1)	Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
11-Sep-91	26	SP	S-1	4.0	117.8	13.38	100		90
11-Sep-91	27	SP	N-1	4.0	109.6	13.24	93		90
Phase II									
24-Oct-91	28	BM	S-1	3.0	113.1	14.76	87		90
24-Oct-91	29	BM	N-1	3.0	117.4	13.98	90		90
24-Oct-91	30	BM	S-1	3.0	117.3	15.67	90		90
Phase III									
11-Dec-91	31	BS	N-2	2.5	104.7	13.03	85		90
11-Dec-91	32	BS	C-2	2.5	105.1	14.62	86		90
11-Dec-91	33	BS	S-2	2.5	101.9	9.43	83		90
11-Dec-91	34	BS	N-1	2.5	107.2	14.58	87	retest of 31	90
11-Dec-91	35	BS	C-1	2.5	115.5	13.40	94	retest of 32	90
11-Dec-91	36	BS	S-1	2.5	114.6	12.78	93	retest of 33	90
11-Dec-91	37	BS	N-1	2.5	107.3	14.49	87	retest of 31	90
11-Dec-91	38	BS	N-1	2.5	116.8	13.13	95	retest of 31	90
11-Dec-91	39	BS	N-2	1.5	118.9	11.67	97		90
11-Dec-91	40	BS	C-2	1.5	110.4	11.18	90		90
11-Dec-91	41	BS	S-2	1.5	119.0	12.17	97		90
			Top of Existing Fill Elevation						
AREA J-1									
Phase I									
10-Sep-91	1	SP	E-1	10.0	111.8	15.93	95		90
10-Sep-91	2	SP	E-2	10.0	110.9	15.79	95		90
10-Sep-91	3	SP	C-2	10.0	111.5	14.46	95		90
10-Sep-91	4	SP	E-1	10.0	107.1	15.56	91		90
10-Sep-91	5	SP	E-1	9.0	113.0	14.86	96		90
11-Sep-91	6	SP	C-1	9.0	113.2	13.92	97		90
11-Sep-91	7	SP	W-1	9.0	112.3	13.47	96		90
11-Sep-91	8	SP	C-2	9.0	113.2	13.05	97		90
11-Sep-91	9	SP	E-2	9.0	114.0	15.16	97		90
11-Sep-91	10	SP	E-1	8.0	114.0	12.59	97		90
11-Sep-91	11	SP	E-2	8.0	112.8	14.44	96		90
11-Sep-91	12	SP	W-1	8.0	108.5	13.54	93		90
11-Sep-91	13	SP	C-1	8.0	114.1	14.80	97		90
11-Sep-91	14	SP	E-2	7.5	118.5	14.40	101		90
11-Sep-91	15	SP	C-2	7.5	109.9	16.36	94		90
11-Sep-91	16	SP	W-2	7.5	115.1	13.88	98		90
11-Sep-91	17	SP	E-1	7.5	115.2	13.89	98		90
11-Sep-91	18	SP	C-1	7.5	109.5	15.17	93		90

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name (1)	Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
11-Sep-91	19	SP	W-1	7.5	112.3	14.55	96		90
11-Sep-91	20	SP	E-2	7.0	113.4	13.77	97		90
11-Sep-91	21	SP	C-2	7.0	111.2	13.28	95		90
11-Sep-91	22	SP	W-2	7.0	114.4	14.52	98		90
11-Sep-91	23	SP	E-1	6.0	117.4	14.05	100		90
11-Sep-91	24	SP	C-1	6.0	114.5	13.87	98		90
11-Sep-91	25	SP	W-1	6.0	108.0	14.89	92		90
Phase II									
17-Oct-91	26	BM	E-1	5.5	116.3	11.09	90		90
17-Oct-91	27	BM	C-1	5.5	115.2	12.06	89		90
17-Oct-91	28	BM	W-1	5.5	104.3	10.25	80		90
17-Oct-91	29	BM	C-1	5.5	112.5	10.27	87	retest of 27	90
17-Oct-91	30	BM	C-1	5.5	117.1	10.43	90	retest of 27	90
17-Oct-91	31	BM	W-1	5.5	112.5	9.32	87	retest of 28	90
17-Oct-91	32	BM	W-1	5.5	119.1	11.09	92	retest of 28	90
17-Oct-91	33	BM	E-1	5.0	124.6	12.77	96		90
17-Oct-91	34	BM	C-1	5.0	125.5	11.62	97		90
17-Oct-91	35	BM	W-1	5.0	122.9	11.59	95		90
17-Oct-91	36	BM	E-2	5.0	124.9	11.18	96		90
18-Oct-91	37	BM	C-2	5.0	122.8	10.10	95		90
18-Oct-91	38	BM	W-2	5.0	118.0	11.28	91		90
21-Oct-91	39	BM	E-1	4.5	121.8	10.77	94		90
21-Oct-91	40	BM	C-2	4.5	122.9	11.12	95		90
21-Oct-91	41	BM	C-1	4.0	121.9	12.94	94		90
21-Oct-91	42	BM	W-2	4.0	121.6	11.47	94		90
				Top of Existing Fill Elevation					
AREA J-2									
Phase I									
06-Sep-91	1	SP	N	10.0	106.5	14.96	91		90
06-Sep-91	2	SP	S	10.0	105.4	14.77	90		90
06-Sep-91	3	SP	N	9.0	110.3	15.23	94		90
06-Sep-91	4	SP	S	9.0	103.6	15.23	88		90
06-Sep-91	5	SP	S	9.0	108.9	15.43	93	retest of 4	90
09-Sep-91	6	SP	N	8.0	106.6	15.86	91		90
09-Sep-91	7	SP	S	8.0	112.5	14.35	96		90
09-Sep-91	8	SP	S	7.0	106.3	15.64	91		90
09-Sep-91	9	SP	N	7.0	108.7	17.21	93		90
15-Apr-92	10	IB	N	6.0	126.8	10.91	96		90
15-Apr-92	11	IB	S	6.0	123.3	11.96	93		90
15-Apr-92	12	IB	N	5.0	116.6	13.32	88		90
15-Apr-92	13	IB	S	5.0	126.2	11.56	96		90

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name (1)	Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
15-Apr-92	14	IB	N	5.0	122	12.3	92		90
15-Apr-92	15	IB	N	4.0	124.3	10.66	94		90
15-Apr-92	16	IB	S	4.0	126.2	11.54	96		90
Phase II									
21-Oct-91	10	BM	S	6.0	115.8	13.80	89		90
21-Oct-91	11	BM	S	6.0	120.0	12.29	92		90
21-Oct-91	12	BM	N	5.0	115.5	15.47	89		90
AREA K									
Phase II									
21-Oct-91	1	BM	N-1	8.0	123.2	11.14	95		90
21-Oct-91	2	BM	S-1	8.0	121.6	11.47	94		90
21-Oct-91	3	BM	S-1	7.0	127.7	9.81	98		90
22-Oct-91	4	BM	N-1	6.0	121.7	9.11	94		90
22-Oct-91	5	BM	S-1	5.0	128.0	11.04	99		90
22-Oct-91	6	BM	N-1	4.5	116.3	12.36	90		90
22-Oct-91	7	BM	N-1	4.5	130.6	10.00	100		90
22-Oct-91	8	BM	S-1	4.0	119.7	11.30	92		90
24-Oct-91	9	BM	N-1	3.5	121.5	10.85	94		90
24-Oct-91	10	BM	S-1	3.5	128.2	10.81	99		90
24-Oct-91	11	BM	N-1	3.0	120.7	13.03	93		90
24-Oct-91	12	BM	S-1	2.5	116.5	16.15	90		90
Phase III									
11-Dec-91	13	BS	N-1	2.5	108.2	13.26	88		90
11-Dec-91	14	BS	S-1	2.5	109.5	11.55	89		90
11-Dec-91	15	BS	N-1	2.5	110.8	13.15	90	retest of 13	90
11-Dec-91	16	BS	S-1	2.5	122.2	11.61	99	retest of 14	90
11-Dec-91	17	BS	N-1	1.5	111.9	11.19	91		90
11-Dec-91	18	BS	S-1	1.5	117.5	12.42	96		90

Top of Existing Fill Elevation

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name (1)	Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
AREA L									
Phase II									
23-Oct-91	1	BM	N-1	8.0	118.6	12.09	91		90
23-Oct-91	2	BM	C-1	8.0	116.5	12.11	90		90
23-Oct-91	3	BM	S-1	8.0	114.1	14.12	88		90
23-Oct-91	4	BM	S-1	8.0	119.1	12.00	92	retest of 3	90
23-Oct-91	5	BM	S-1	7.0	120.0	11.83	92		90
23-Oct-91	6	BM	C-1	7.0	121.1	9.23	93		90
23-Oct-91	7	BM	N-1	7.0	118.0	10.04	91		90
24-Oct-91	8	BM	S-1	6.0	123.5	10.04	95		90
24-Oct-91	9	BM	C-1	6.0	121.6	10.71	94		90
24-Oct-91	10	BM	N-1	6.0	118.8	9.66	92		90
24-Oct-91	11	BM	S-1	5.0	121.5	8.95	94		90
24-Oct-91	12	BM	N-1	5.0	120.0	12.90	92		90
15-Apr-92	13	IB	N-1	4.0	125.7	10.12	95		90
15-Apr-92	14	IB	S-1	4.0	133.6	9.24	101		90
NORTHERN AREA S									
05-Feb-92	1	IB	S	4.0	123.5	10.8	96		90
05-Feb-92	2	IB	S	4.0	129.8	10.35	98		90
NORTHERN AREA N									
05-Feb-92	1	IB	N	4.0	125.9	9.88	95		90
05-Feb-92	2	IB	N	4.0	123.6	11.1	94		90
NORTHERN AREA E									
05-Feb-92	1	IB	E	4.0	127.5	10.92	97		90
05-Feb-92	2	IB	E	4.0	121.5	11.97	92		90
19-May-92	3	IB		2.0	131.0	8.95	99		90
19-May-92	4	IB	E	2.0	129.3	8.39	98		90
19-May-92	5	IB	E	2.0	129.3	9.05	98		90
NORTHERN AREA W1									
05-Feb-92	1	IB	W1	4.0	129.2	9.53	98		90
05-Feb-92	2	IB	W1	4.0	127.9	10.32	97		90
19-May-92	3	IB	W1	2.0	123.2	8.73	93		90
19-May-92	4	IB	W1	2.0	128.0	9.61	97		90

TABLE C-2
RESULTS OF FIELD COMPACTION TESTS*
SOIL REMEDIATION ACTIVITIES
FORMER RANSOME PROPERTY
EMERYVILLE, CALIFORNIA

Date	Test Number	Sample Name (1)	Location	Approximate Elevation Below Final Grade (ft.)	Dry Density (pcf)	Moisture Content (% Dry Wt.)	Percent Relative Compaction (% of Max. Dry Density)	Retest	Specified Percent Relative Compaction
NORTHERN AREA W2									
29-May-92	1	IB	W2	2.0	125.2	7.87	95		90
29-May-92	2	IB	W2	2.0	115.1	9.17	87		90
29-May-92	3	IB	W2	2.0	117.0	9.71	89		90
29-May-92	4	IB	W2	2.0	118.4	7.96	90		90
29-May-92	5	IB	W2	2.0	119.2	9.66	90		90
29-May-92	6	IB	W2	2.0	122.3	8.51	93	retest of 2	90
29-May-92	7	IB	W2	2.0	121.5	7.51	92	retest of 3	90
29-May-92	8	IB	W2	2.0	119.6	9.72	91	retest of 4	90

* All tests conducted in the field by a Levine-Fricke geotechnical engineer using a nuclear density/moisture testing instrument after lifts of fill were placed, moisture conditioned, and compacted. Soils were placed in thin lifts not to exceed 8 inches.

** Backfill compacted to engineering fill depth (1.5 ft bgs).

(1) See Table C-1 for explanation of sample type.

(2) Refers to compaction curve only.

BESLER BUILDING

HOLLIS STREET

Area A1

Area A2

Area K

N-1

S-1

Area L

N-1

C-1

S-1

N-1

N-2

Area J1

W-1

W-2

C-1

C-2

E-1

E-2

N

S

Area J2

Area B1

W-1

W-2

E-1

E-2

C-1

S-1

Area D

Area B2

S-2

N

0 20 40 FEET

EXPLANATION

Excavation boundary

Figure C-1 :

SITE PLAN SHOWING
FIELD COMPACTION TEST AREAS

Project No 1649 07 **LEVINE•FRICKE**
ENGINEERS HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1649S013 JJB EM 100992

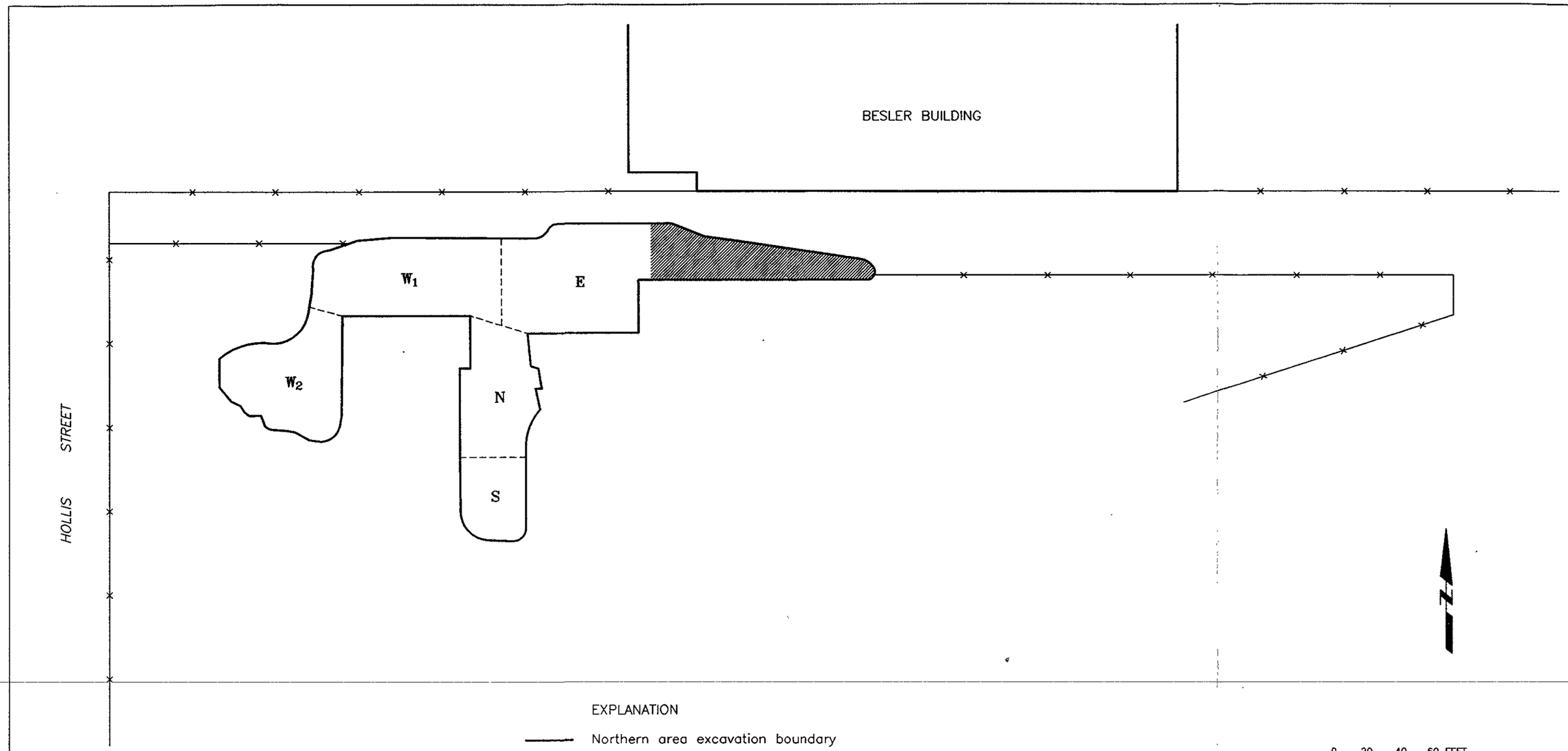


Figure C-2 :
SITE PLAN SHOWING FIELD COMPACTION TEST AREAS FOR NORTHERN AREA

Project No 1649 07 **LEVINE•FRICKE**
ENGINEERS HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1649S014 CHP EM 100992

Field and Laboratory Compaction Test Curves

CONSTRUCTION MATERIALS TESTING, INC.

Job Name: 1020 Harris St
Sample Description:
Source: test pit #1 @ -15'
Client No:

Job No. 90353
Sample No: 1
Date: 8-9-91
Sampled: CC Tested: GS

COMPACTION CURVE

% Retained on 3/4": ____ ASTM D1557 (A) (4" mold) ASTM D1557 B C or D (6" mold)

Trial No.	-6	-4	-2	0
Wet Weight	1830	1865	1856	1825
Wet Den.				
Dry Weight	1556	1551	[illegible]	1566
Moisture				
% Moisture				
Dry Den.				

Group Symbol:

4" MOLD

Wet Den. = .06614 x Wet Wt.

Dry Den. = Wt Den. / 100 + % H_2O

6" MOLD

Wet Den. = .02939 x Wet Wt.

Dry Den. = Wt Den. / 100 + % H_2O

Sample

Maximum Dens.: 103.1 pcf
Optimum Mois.: 18.7 %

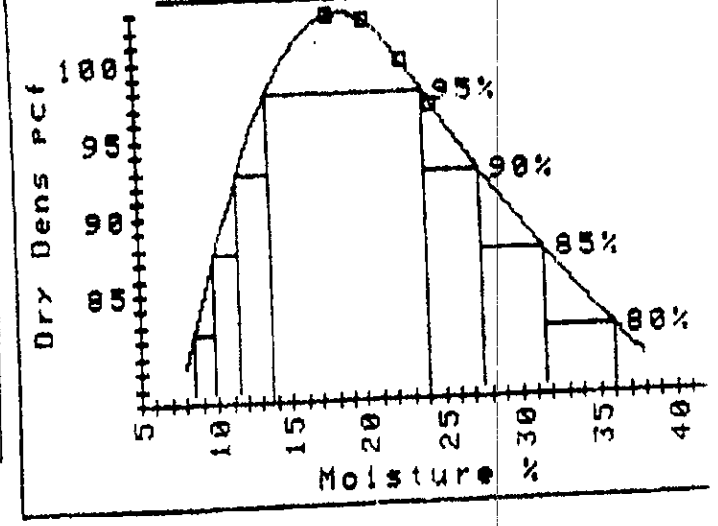
MOISTURE RANGE

	low	high
95%	13.6	24.0
90%	11.5	27.5
85%	9.9	31.5
80%	8.5	35.9

LAB DATA

	dens	mois
1.	102.9	17.9
2.	102.6	20.2
3.	100.0	22.8
4.	97.0	24.5

MOISTURE-DENSITY GRAPH



[redacted]

CONSTRUCTION MATERIALS TESTING, INC.

Job Name: 4030 Hollis St
Sample Description: Light Brn Clay
Source: Test Pit #1 - 6 ft
Client No:

Job No. 90353
Sample No: 2
Date: 8-4-91
Sampled: BC Tested: SP

COMPACTION CURVE

% Retained on 3/4": _____ ASTM D1557 (A) (4" mold) ASTM D1557 B C or D (6" mold)

Trial No.	-50	0	+50	+100
Wet Weight	1826	1938	1977	1944
Wet Den.				
Dry Weight	1661	1721	1725	1664
Moisture				
% Moisture				
Dry Den.				

Group Symbol:

4" MOLD

Wet Den. = .06614 x Wet Wt.

Dry Den. = Wt Den. / (100 + % H_2O)

6" MOLD

Wet Den. = .02939 x Wet Wt.

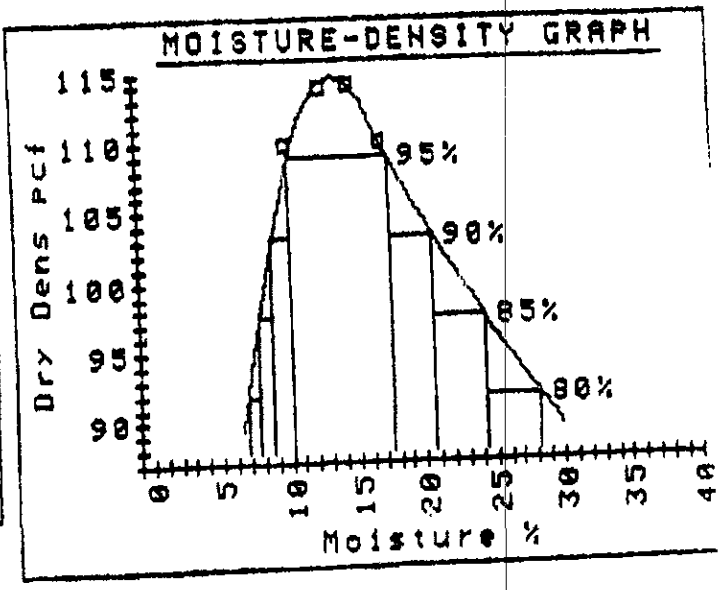
Dry Den. = Wt Den. / (100 + % H_2O)

Sample

Maximum Dens.: 114.7 pcf
Optimum Mois.: 13.5 %

MOISTURE RANGE	low	high
95%	10.1	17.4
90%	8.7	20.6
85%	7.6	24.1
80%	6.7	28.1

LAB DATA	dens	mois
1.	109.9	9.9
2.	113.8	12.6
3.	114.1	14.6
4.	110.1	16.8



CMT CONSTRUCTION MATERIALS TESTING, INC.

Job Name: 403 Hollis st
Sample Description: 01 BRN
Source: stock p, l.
Client No:

Job No. 90353
Sample No: 3
Date: 8-30-91
Sampled: BC Tested: LS m.

COMPACTION CURVE

% Retained on 3/4": _____ ASTM D1557 (A) (4" mold) ASTM D1557 B C or D (6" mold)

Trial No.	0	+50	f100	+150
Wet Weight	1922	2001	2003	1976
Wet Den.				
Dry Weight	1724	1770	1734	1680
Moisture				
% Moisture				
Dry Den.				

Group Symbol:

4" MOLD

Wet Den. = .06614 x Wet Wt.

Dry Den. = Wt Den. / 100 + % H_2O

6" MOLD

Wet Den. = .02939 x Wet Wt.

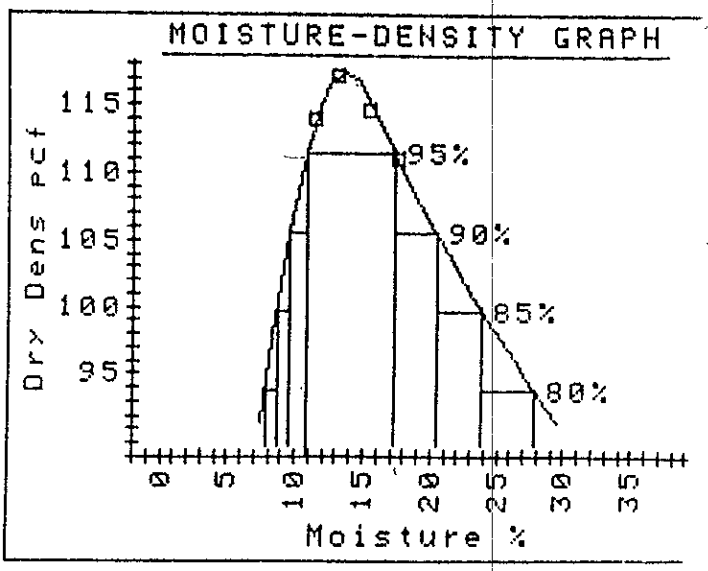
Dry Den. = Wt Den. / 100 + % H_2O

Sample

Maximum Dens.: 117.3 pcf
Optimum Mois.: 13.7 %

MOISTURE RANGE	low	high
95%	10.8	17.3
90%	9.5	20.4
85%	8.6	23.9
80%	7.8	27.8

LAB DATA	dens	mois
1.	114.0	11.5
2.	117.1	13.1
3.	114.7	15.5
4.	111.1	17.6

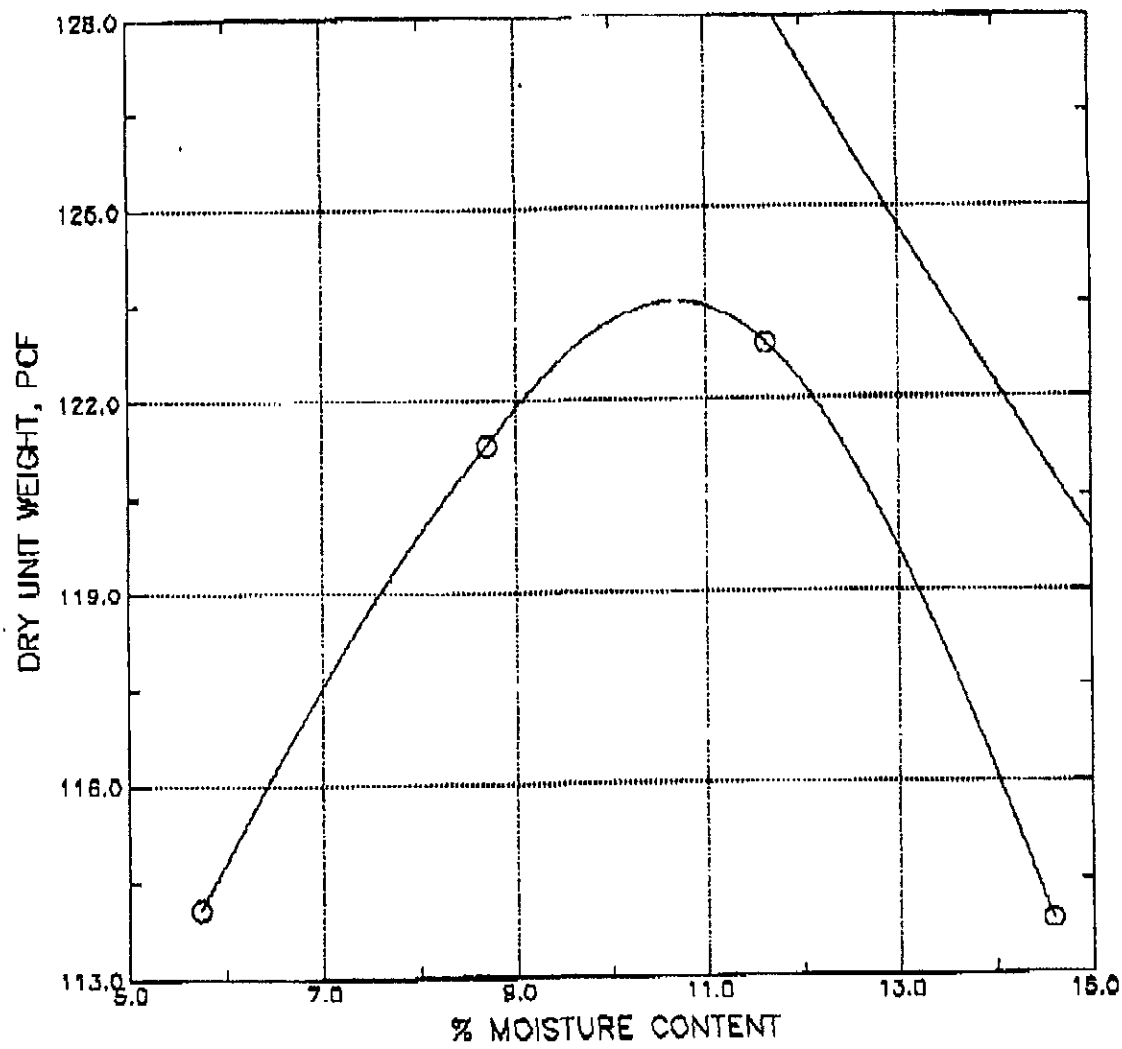


1000-U Detroit Avenue . Concord, California 94518 Telephone (415) 825-2840

Woodward-Clyde Consultants

	Boring No. : AP-1 Sample No. : AP-1 Tested by : R. TARAYA Filename : LFAP-1	Project : LEVINE FRICKE 2035 YERBA BUENA-RANSOME BACKFILL Project No.: 16148A Location : YERBA BEUNA Date: Tue Jul 23 1991

COMPACTION



Sample Description	: GRAY BROWN GRAVELLY SANDY CLAY
Compaction Test Designation	: ASTM D1557-C
Maximum Dry Density	: 123.5 PCF
Optimum Moisture Content	: 10.7 %

Figure 1

Woodward-Clyde Consultants

GEOTECHNICAL LABORATORY TEST DATA

Project : LEVINE FRICKE 2035 YERBA BUENA-RANSOME BACKFILL
Project No. : 16148A
Boring No. : AP-1
Sample No. : AP-1
Location : YERBA BEUNA
Soil Description : GRAY BROWN GRAVELLY SANDY CLAY
Remarks :

Depth :
Test Date : 07/22/91
Test Method : D1557-78C

Filename : LPAP-1
Elevation :
Tested by : R. TANAYA
Checked by : S. CAPPS

COMPACTION TEST

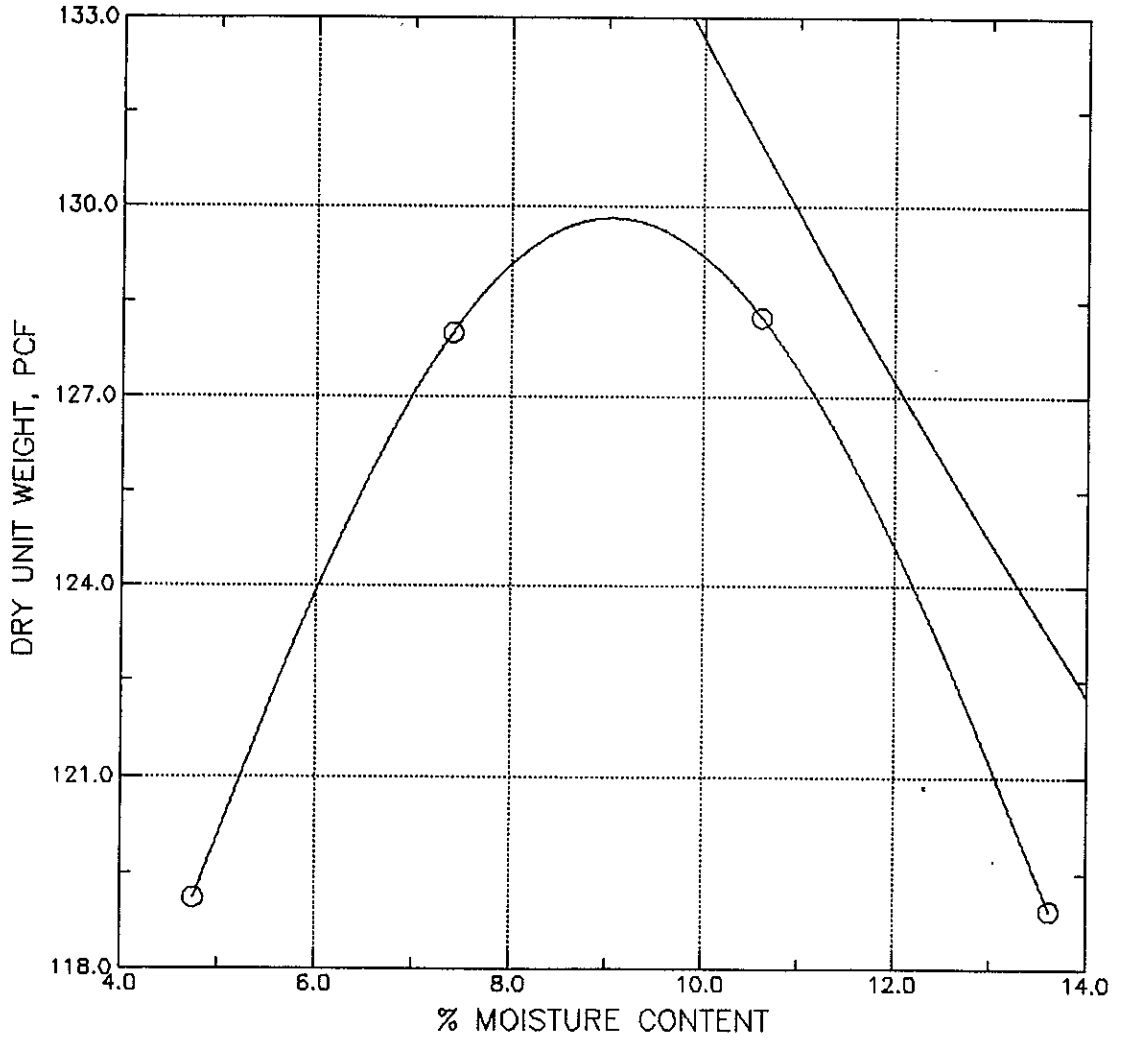
Mold ID : 2
Method Used : ASTM D1557-C
Volume of Mold : 0.0751 ft^3
Mass of Mold : 2769.8 gm
Specific Gravity : 2.7

Moisture Content ID	Mass of Container (gm)	Mass of Container + Moist Soil (gm)	Mass of Container + Dry Soil (gm)	Mass of Mold + Specimen (gm)	Moisture Content (%)	Dry Density (PCF)
	0.00	4112.30	3889.40	6879.10	5.7	114.1
	0.00	4496.80	4137.10	7261.10	8.7	121.3
	0.00	4674.80	4187.90	7441.60	11.6	122.9
	0.00	4438.90	3873.40	7214.60	14.6	113.9

Optimum Dry Density = 123.5 PCF
Optimum Moisture Content = 10.7 %

	Boring No. : 1 Sample No. : 1 Tested by : S. CAPPS Filename : 1649-01	Project : LEVINE FRICKE 1649.01 Project No.: 16148A Location : Date: Tue Oct 15 1991

COMPACTION



Sample Description	: BROWN CLAYEY SAND TO SANDY CLAY WITH SMALL GRAVEL
Compaction Test Designation	: ASTM D1557-A
Maximum Dry Density	: 129.8 PCF
Optimum Moisture Content	: 9.0 %

Figure 1

Tue Oct 15 08:08:13 1991

GEOTECHNICAL LABORATORY TEST DATA

Project : LEVINE FRICKE 1649.01
Project No. : 16148A
Boring No. : 1
Sample No. : 1
Location :
Soil Description : BROWN CLAYEY SAND TO SANDY CLAY WITH SMALL GRAVEL
Remarks :

Depth :
Test Date : 10/14/91
Test Method : D1557-78A

Filename : 1649-01
Elevation :
Tested by : S. CAPPS
Checked by : C. WASON

COMPACTION TEST

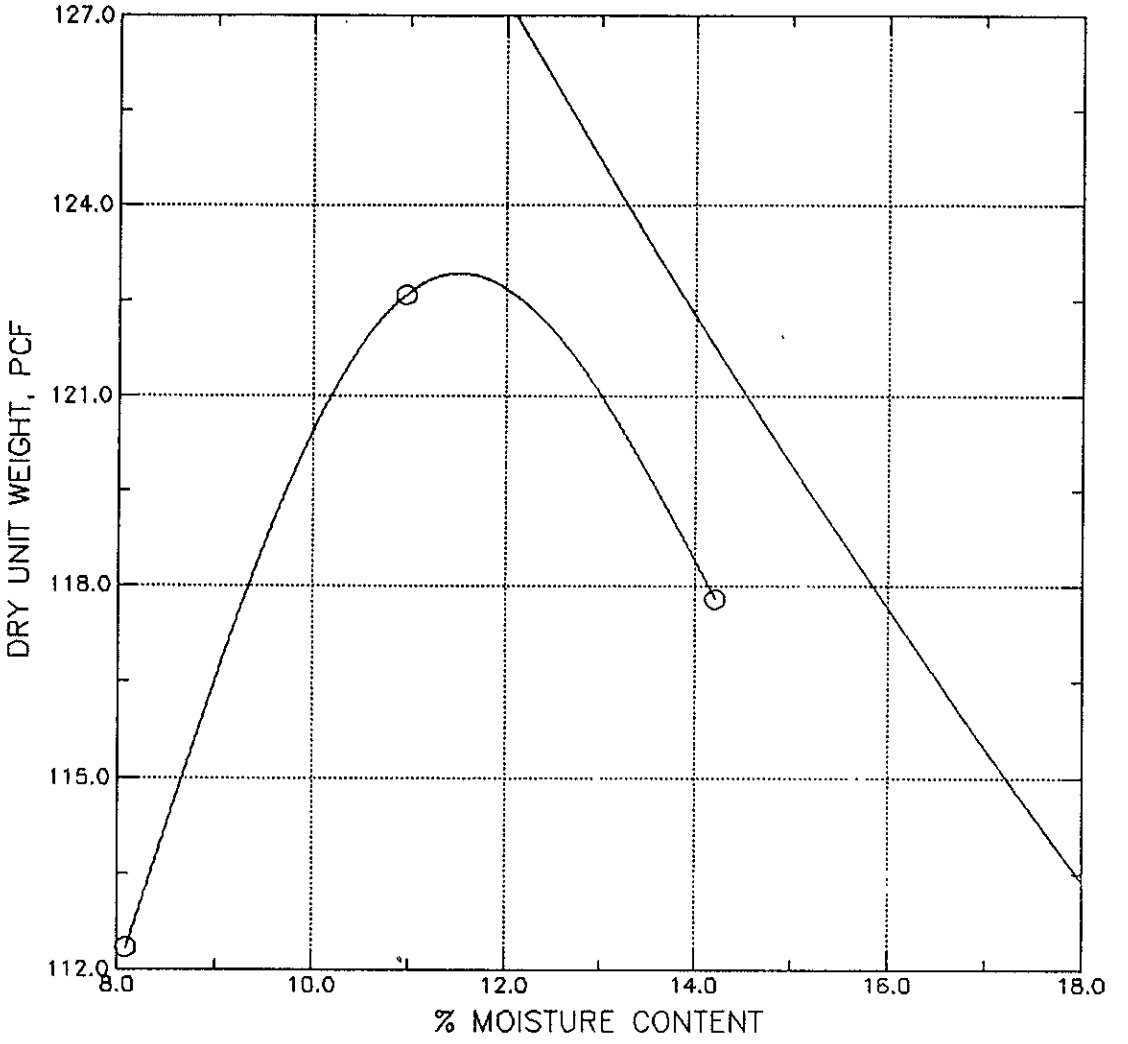
Mold ID : 1
Method Used : ASTM D1557-A
Volume of Mold : 0.0333 ft^3
Mass of Mold : 1882.1 gm
Specific Gravity : 2.7

Moisture Content ID	Mass of Container (gm)	Mass of Container + Moist Soil (gm)	Mass of Container + Dry Soil (gm)	Mass of Mold + Specimen (gm)	Moisture Content (%)	Dry Density (pcf)
	0.00	1882.40	1797.10	3766.60	4.7	119.1
	0.00	2073.70	1930.80	3958.90	7.4	128.0
	0.00	2141.70	1936.20	4025.00	10.6	128.3
	0.00	2022.10	1779.70	3923.00	13.6	118.9

Optimum Dry Density = 129.8 pcf
Optimum Moisture Content = 9.0 %

	Boring No. : BACKFILL Sample No. : STOCKPILE Tested by : D. WEBER Filename : BACKFILL	Project : LEVINE FRICKE 1649.07 Project No.: 16148A Location : YERBA BUENA-RANSONE Date: Thu Dec 05 1991

COMPACTION



Sample Description	: BROWN SANDY CLAY
Compaction Test Designation	: ASTM D1557-A
Maximum Dry Density	: 122.9 PCF
Optimum Moisture Content	: 11.5 %

Figure 1

Thu Dec 05 08:58:07 1991

GEOTECHNICAL LABORATORY TEST DATA

Project : LEVINE FRICKE 1649.07
Project No. : 16148A
Boring No. : BACKFILL
Sample No. : STOCKPILE
Location : YERBA BUENA-RANSONE
Soil Description : BROWN SANDY CLAY
Remarks :

Depth :
Test Date : 12/04/91
Test Method : D1557-78A

Filename : BACKFILL
Elevation :
Tested by : D. WEBER
Checked by : S. CAPPS

COMPACTION TEST

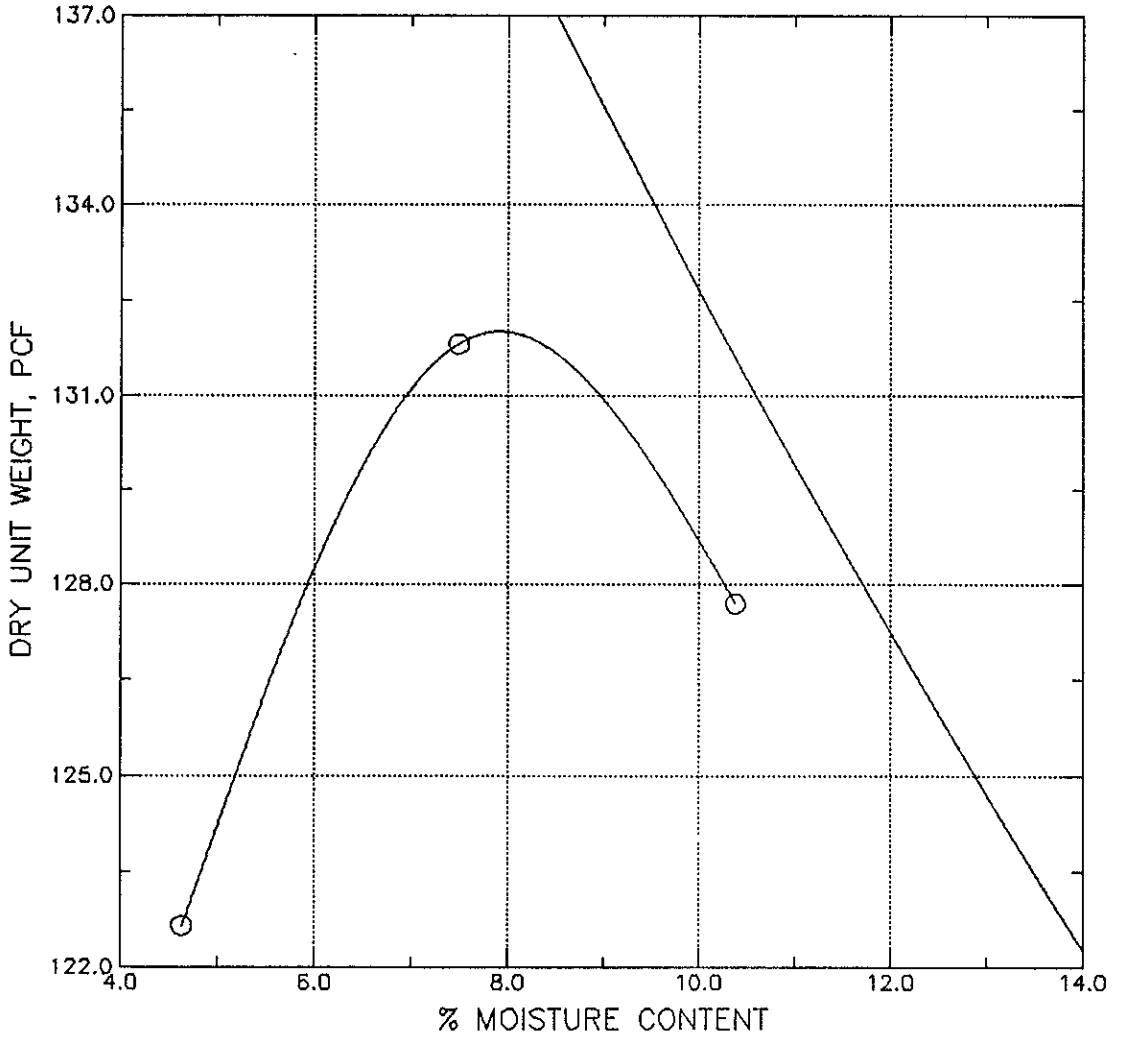
Mold ID : 1
Method Used : ASTM D1557-A
Volume of Mold : 0.0333 ft^3
Mass of Mold : 1888.3 gm
Specific Gravity : 2.7

Moisture Content ID	Mass of Container (gm)	Mass of Container + Moist Soil (gm)	Mass of Container + Dry Soil (gm)	Mass of Mold + Specimen (gm)	Moisture Content (%)	Dry Density (PCF)
	0.00	1840.50	1702.80	3722.40	8.1	112.3
	0.00	2061.40	1857.80	3942.90	11.0	122.6
	0.00	2038.60	1784.90	3920.40	14.2	117.8

Optimum Dry Density = 122.9 PCF
Optimum Moisture Content = 11.5 %

	Boring No. : COLMA Sample No. : COLMA Tested by : C. WASON Filename : COLMA	Project : LEVINE FRICKE LF 1649.07 Project No.: 16148A Location : COLMA Date: Wed Feb 05 1992

COMPACTION



Sample Description	: GRAY BROWN CLAYEY GRAVELLY SILTY SAND
Compaction Test Designation	: ASTM D1557-C
Maximum Dry Density	: 132.0 PCF
Optimum Moisture Content	: 7.9 %

Figure 1

GEOTECHNICAL LABORATORY TEST DATA

Project : LEVINE FRICKE LF 1649.07
Project No. : 16148A
Boring No. : COLMA
Sample No. : COLMA
Location : COLMA
Depth :
Test Date : 02/04/92
Test Method : D1557-78C
Filename : COLMA
Elevation :
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : GRAY BROWN CLAYEY GRAVELLY SILTY SAND
Remarks :

COMPACTION TEST

Mold ID : 2
Method Used : ASTM D1557-C
Volume of Mold : 0.0751 ft^3
Mass of Mold : 2755.3 gm
Specific Gravity : 2.7

Moisture Content ID	Mass of Container (gm)	Mass of Container + Moist Soil (gm)	Mass of Container + Dry Soil (gm)	Mass of Mold + Specimen (gm)	Moisture Content (%)	Dry Density (PCF)
	0.00	3959.80	3784.40	7126.80	4.6	122.6
	0.00	4783.20	4449.90	7582.00	7.5	131.8
	0.00	4785.90	4335.80	7556.70	10.4	127.7

Optimum Dry Density = 132.0 PCF
Optimum Moisture Content = 7.9 %

APPENDIX D

REMEDIATION CERTIFICATE AND CERTIFICATES OF ANALYSIS PORT COSTA MATERIALS, PORT COSTA, CALIFORNIA

PCM

Port Costa Materials, Inc.
Sutter Square
1800 Sutter Street, Suite 570
Concord, CA 94520

415/602-1200
800/323-2922
Fax: 415/687-1848

AQUA RESOURCES, INC
RECEIVED

JAN 21 1992

JOB NO. _____
FILE _____

January 17, 1992

Certified Mail
Return Receipt Requested

Aqua Resources
2030 Addison Street
Berkeley, CA 94704

Enclosed is the Remediation Certificate for Lot #000151A, Ransome Company, 4030 Hollis Street, Emeryville, California.

Also included are the Certificates of Analysis from an Independent Laboratory indicating no detectable hydrocarbons in the remediated product.

Susan King

Susan King
Admin. Assist.

Plant Location: 9000 Carquinez Scenic Drive
P. O. Box 223
Port Costa, CA 94569-0223

415/602-1200
Fax: 415/787-1726

Certificate Number
0110

CERTIFICATE

Remediation of Hydrocarbon Contaminated Soils

Certificate Number: 0110
Dated: January 16, 1992

Supplier :

Aqua Resources
2030 Addison Street
Berkeley, CA 94704

Generator:

Ransome Co.
4030 Hollis Street
Emeryville, California

PORT COSTA MATERIALS, INC., a California corporation ("Company"), located at and the operator of the above "Facility" hereby certifies as follows:

1. The Company has received from the above "Generator" **Ransome Co.**, **3,698.88** tons of hydrocarbon contaminated soil ("HC \Soil") as transported by or on behalf of Generator by **Aqua Resources**, contracted through **H & K Grading Contractors** to such facility, and referred to as lot number 000151A. which HC Soil was received at the Facility on **August 1 through 23, 1991**, (as part of a shipment consisting of **6,990.4** tons in total). The Company operates its Facility and processes such HC Soil pursuant to permits issued by applicable governmental authorities.

2. In receiving and processing the HC Soil and in providing this Certificate, the Company has relied upon and is relying on (a) the representation of the Generator that the HC Soil does not contain any materials classified as, and is not classified as, "hazardous waste" under the applicable provisions of the Federal and California law and has been managed and may be treated as other than "hazardous waste" and (b) the Generator has independent written certifications from applicable governmental agencies or certified independent testing laboratories that the HC Soil does not contain any materials classified as, and is not classified as, "hazardous waste" under said applicable law.

3. The HC Soil has been treated by being introduced into the manufacturing process at the Facility (in which it may be blended with a mixture of natural shale) feeding into a rotary kiln in which at high temperature the contaminants are consumed by *thermal processing and inert materials are produced.* The HC Soil was processed in this manner during the periods of October 9, 1991, October 11 through 26, 1991 and November 8 thru 10, 1991, and all of the HC Soil covered by this Certificate was completely processed on November 10, 1991. In the treatment of the HC Soil, releases and emissions have been in accordance with the requirements of the applicable operating permits of the Facility.

4. Upon completion of the treatment, the HC Soil has been remediated, and the end product is an inert substance which does not constitute a "hazardous waste" under the applicable provisions of the Federal and California law.

5. The Company shall indemnify, defend and hold harmless the Generator from and against any enforcement actions by any governmental authority in the event that any of the representations by the Company set forth in this Certificate are materially inaccurate.

This Certificate is executed on this 16th day of January, 1992

PORT COSTA MATERIALS, INC.

By: _____
G. W. Ogle
Vice President Operations

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84365
CLIENT: Port Costa Materials
CLIENT JOB NO.: 11/08/91

DATE RECEIVED: 11/13/91
DATE REPORTED: 11/20/91
DATE SAMPLED : 11/08/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND<10	ND<10
2	0800	ND<10	ND<10
3	1200	ND<10	ND<10
4	2400	ND<10	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 1 %
RPD Diesel = 12 %
MS/MSD Average Recovery =110/107 %: Duplicate RPD = 3

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84365
CLIENT: Port Costa Materials
CLIENT JOB NO.: 11/08/91

DATE RECEIVED:11/13/91
DATE REPORTED:11/20/91
DATE SAMPLED :11/08/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND<50
2	0800	ND<50
3	1200	ND<50
4	2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 96%
Duplicate RPD : 0

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84366
CLIENT: Port Costa Materials
CLIENT JOB NO.: 11/09/91

DATE RECEIVED: 11/13/91
DATE REPORTED: 11/20/91
DATE SAMPLED : 11/09/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND<10	ND<10
2	0800	ND<10	ND<10
3	1200	ND<10	ND<10
4	1600	ND<10	ND<10
5	2000	ND<10	ND<10
6	2400	ND<10	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline =12
RPD Diesel = 1
MS/MSD Average Recovery =110/107 %: Duplicate RPD =3

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84366
CLIENT: Port Costa Materials
CLIENT JOB NO.: 11/09/91

DATE RECEIVED:11/13/91
DATE REPORTED:11/20/91
DATE SAMPLED : 11/09/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND<50
2	0800	ND<50
3	1200	ND<50
4	1600	ND<50
5	2000	ND<50
6	2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery:96/96%
Duplicate RPD :0

Richard Srna, Ph.D.

Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84367
CLIENT: Port Costa Materials
CLIENT JOB NO.: 11/10/91

DATE RECEIVED: 11/13/91
DATE REPORTED: 11/20/91
DATE SAMPLED : 11/10/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND<10	ND<10
2	0800	ND<10	ND<10
3	1200	ND<10	ND<10
4	1600	ND<10	ND<10
5	2000	ND<10	ND<10
6	2400	ND<10	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 12
RPD Diesel = 1
MS/MSD Average Recovery = 110/107%: Duplicate RPD = 3

Richard Srna, Ph.D.

Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84367
CLIENT: Port Costa Materials
CLIENT JOB NO.: 11/10/91

DATE RECEIVED:11/13/91
DATE REPORTED:11/20/91
DATE SAMPLED :11/10/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND<50
2	0800	ND<50
3	1200	ND<50
4	1600	ND<50
5	2000	ND<50
6	2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 64/65%
Duplicate RPD : 2

Richard Srna, Ph.D.

Ghaneh Salimpour
Laboratory Director

Superior Precision Analytical, Inc.
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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84108
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/10/91

DATE RECEIVED: 10/11/91
DATE REPORTED: 10/18/91
DATE SAMPLED : 10/~~10~~09/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	10/10/91 1600	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 3
RPD Diesel = 12
MS/MSD Average Recovery = 93%: Duplicate RPD = 4

Richard Srna, Ph.D.
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84108
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/10/91

DATE RECEIVED:10/11/91
DATE REPORTED:10/18/91
DATE SAMPLED : 10/~~10~~09/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	10/10/91 1600	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 84%
Duplicate RPD : 0

Richard Srna, Ph.D.
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84121
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/11/91

DATE RECEIVED: 10/14/91
DATE REPORTED: 10/18/91
DATE SAMPLED : 10/11/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration (mg/Kg) Oil & Grease
1	1200	ND<50
2	1600	ND<50
3	2000	ND<50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 76/71%
Duplicate RPD : 7

Richard Srna, Ph.D.
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84121
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/11/91

DATE RECEIVED: 10/14/91
DATE REPORTED: 10/18/91
DATE SAMPLED : 10/11/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	1200	ND<10	ND<10
2	1600	ND<10	ND<10
3	2000	ND<10	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 3
RPD Diesel = 12
MS/MSD Average Recovery = 95/91%: Duplicate RPD = 4

Richard Srna, Ph.D.

(for)
Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84120
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/12/91

DATE RECEIVED: 10/14/91
DATE REPORTED: 10/21/91
DATE SAMPLED : 10/12/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	0800	ND <10	ND <10
3	1200	ND <10	ND <10
4	1600	ND <10	ND <10
5	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 2
RPD Diesel = 9
MS/MSD Average Recovery = 95%: Duplicate RPD = 2

Richard Srna, Ph.D.
Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84120
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/12/91

DATE RECEIVED:10/14/91
DATE REPORTED:10/21/91
DATE SAMPLED : 10/12/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND <50
2	0800	ND <50
3	1200	ND <50
4	1600	ND <50
5	2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 68%
Duplicate RPD : 7

Richard Srna, Ph.D.
Laboratory Director

Superior Precision Analytical, Inc.
825 Arnold Drive, Suite 114 ▪ Martinez, California 94553 ▪ (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84119
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/13/91

DATE RECEIVED: 10/14/91
DATE REPORTED: 10/21/91
DATE SAMPLED : 10/13/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	0800	ND <10	ND <10
3	1200	ND <10	ND <10
4	1600	ND <10	ND <10
5	2000	ND <10	ND <10
6	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 3
RPD Diesel = 12
MS/MSD Average Recovery = 93%: Duplicate RPD = 4

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84119
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/13/91

DATE RECEIVED:10/14/91
DATE REPORTED:10/21/91
DATE SAMPLED : 10/13/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND <50
2	0800	ND <50
3	1200	ND <50
4	1600	ND <50
5	2000	ND <50
6	2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 68%
Duplicate RPD : 7

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84127
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/14/91

DATE RECEIVED: 10/15/91
DATE REPORTED: 10/21/91
DATE SAMPLED : 10/14/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	0800	ND <10	ND <10
3	1200	ND <10	ND <10
4	200	ND <10	ND <10
5	2000	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 3
RPD Diesel = 12
MS/MSD Average Recovery = 93%: Duplicate RPD = 4

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84127
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/14/91

DATE RECEIVED:10/15/91
DATE REPORTED:10/21/91
DATE SAMPLED : 10/14/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND <50
2	0800	ND <50
3	1200	ND <50
4	200	ND <50
5	2000	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 68%
Duplicate RPD : 7

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84143
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/15/91

DATE RECEIVED: 10/16/91
DATE REPORTED: 10/28/91
DATE SAMPLED : 10/15/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	10/15/91 0400	ND <10	ND <10
2	10/15/91 0800	ND <10	ND <10
3	10/15/91 1200	ND <10	ND <10
4	10/15/91 1600	ND <10	ND <10
5	10/15/91 2000	ND <10	ND <10
6	10/15/91 2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline and Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 3
RPD Diesel = 2
MS/MSD Average Recovery = 114%: Duplicate RPD = 4

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84143
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/15/91

DATE RECEIVED:10/16/91
DATE REPORTED:10/28/91
DATE SAMPLED :10/15/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	10/15/91 0400	ND <50
2	10/15/91 0800	ND <50
3	10/15/91 1200	ND <50
4	10/15/91 1600	ND <50
5	10/15/91 2000	ND <50
6	10/15/91 2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 68%
Duplicate RPD : 7

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84147
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/16/91

DATE RECEIVED:10/17/91
DATE REPORTED:10/25/91
DATE SAMPLED : 10/16/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	1600	ND <50
2	2000	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 68%
Duplicate RPD : 7

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84147
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/16/91

DATE RECEIVED: 10/17/91
DATE REPORTED: 10/25/91
DATE SAMPLED : 10/16/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	1600	ND <10	ND <10
2	2000	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 3
RPD Diesel = 2
MS/MSD Average Recovery = 114%: Duplicate RPD = 4

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84158
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/17/91

DATE RECEIVED: 10/18/91
DATE REPORTED: 10/28/91
DATE SAMPLED : 10/17/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	1600	ND <10	ND <10
3	2000	ND <10	ND <10
4	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 5
RPD Diesel = 10
MS/MSD Average Recovery = 114%: Duplicate RPD = 4

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84172
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/18/91

DATE RECEIVED: 10/21/91
DATE REPORTED: 10/28/91
DATE SAMPLED : 10/18/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	0800	ND <10	ND <10
3	1200	ND <10	ND <10
4	1600	ND <10	ND <10
5	2000	ND <10	ND <10
6	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 5
RPD Diesel = 10
MS/MSD Average Recovery = 117%: Duplicate RPD = 6

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84172
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/18/91

DATE RECEIVED: 10/21/91
DATE REPORTED: 10/28/91
DATE SAMPLED : 10/18/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration (mg/Kg) Oil & Grease
1	0400	ND <50
2	0800	ND <50
3	1200	ND <50
4	1600	ND <50
5	2000	ND <50
6	2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 78%
Duplicate RPD : 9

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84173
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/19/91

DATE RECEIVED: 10/21/91
DATE REPORTED: 10/28/91
DATE SAMPLED : 10/19/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	0800	ND <10	ND <10
3	1200	ND <10	ND <10
4	1600	ND <10	ND <10
5	2000	ND <10	ND <10
6	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 10
RPD Diesel = 11
MS/MSD Average Recovery = 108%: Duplicate RPD = 8

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84173
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/19/91

DATE RECEIVED:10/21/91
DATE REPORTED:10/28/91
DATE SAMPLED : 10/19/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND <50
2	0800	ND <50
3	1200	ND <50
4	1600	ND <50
5	2000	ND <50
6	2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 78%
Duplicate RPD : 9

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84174
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/20/91

DATE RECEIVED: 10/21/91
DATE REPORTED: 10/28/91
DATE SAMPLED : 10/20/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	1600	ND <10	ND <10
3	2000	ND <10	ND <10
4	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 5
RPD Diesel = 10
MS/MSD Average Recovery = 117%: Duplicate RPD = 6

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84174
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/20/91

DATE RECEIVED:10/21/91
DATE REPORTED:10/28/91
DATE SAMPLED : 10/20/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND <50
2	1600	ND <50
3	2000	ND <50
4	2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 68%
Duplicate RPD : 7

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84583
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/21/91

DATE RECEIVED: 12/10/91
DATE REPORTED: 12/17/91
DATE SAMPLED : 10/21/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/kg) Gasoline Range	Diesel Range
1	10/21/91 0400	ND<10	ND<10
2	10/21/91 2000	ND<10	ND<10
3	10/21/91 2400	ND<10	ND<10

mg/kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/kg
Method Detection Limit for Diesel in Soil: 10 mg/kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 5
RPD Diesel = 3
MS/MSD Average Recovery = 116%: Duplicate RPD = 0

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Ghaneh Salimpour
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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84583
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/21/91

DATE RECEIVED:12/10/91
DATE REPORTED:12/17/91
DATE SAMPLED : 10/21/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/kg) Oil & Grease
1	10/21/91 0400	ND<50
2	10/21/91 2000	ND<50
3	10/21/91 2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/kg

QAQC Summary: MS/MSD Average Recovery: 67/65%
Duplicate RPD : 3

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84185
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/22/91

DATE RECEIVED: 10/23/91
DATE REPORTED: 11/02/91
DATE SAMPLED : 10/22/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration (mg/Kg) Oil & Grease
1	0800	ND <50
2	1200	ND <50
3	1600	ND <50
4	2000	ND <50
5	2400	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 78%
Duplicate RPD : 9

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 84185
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/22/91

DATE RECEIVED: 10/23/91
DATE REPORTED: 11/02/91
DATE SAMPLED : 10/22/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0800	ND <10	ND <10
2	1200	ND <10	ND <10
3	1600	ND <10	ND <10
4	2000	ND <10	ND <10
5	2400	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 14
RPD Diesel = 4
MS/MSD Average Recovery = 114%: Duplicate RPD = 3

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84197
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/23/91

DATE RECEIVED: 10/24/91
DATE REPORTED: 11/04/91
DATE SAMPLED : 10/23/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration (mg/Kg) Oil & Grease
1	0400	ND <50
2	0800	ND <50
3	1200	ND <50
4	2000	ND <50

mg/Kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 78%
Duplicate RPD : 9

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84197
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/23/91

DATE RECEIVED: 10/24/91
DATE REPORTED: 11/04/91
DATE SAMPLED : 10/23/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND <10	ND <10
2	0800	ND <10	ND <10
3	1200	ND <10	ND <10
4	2000	ND <10	ND <10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 14
RPD Diesel = 4
MS/MSD Average Recovery = 114%: Duplicate RPD = 2

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84206
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/24/91

DATE RECEIVED: 10/25/91
DATE REPORTED: 11/05/91
DATE SAMPLED : 10/24/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND<10	ND<10
2	2400	ND<10	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 7%
RPD Diesel = 2%
MS/MSD Average Recovery = 102/103%: Duplicate RPD = 1

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Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84227
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/25/91

DATE RECEIVED:10/28/91
DATE REPORTED:11/05/91
DATE SAMPLED : 10/25/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND<50
2	0800	ND<50
3	1200	ND<50
4	1600	ND<50
5	2000	ND<50
6	2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 86/79%
Duplicate RPD : 9

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Lynda Deschambeault (for)
Laboratory Director

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84206
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/24/91

DATE RECEIVED: 10/25/91
DATE REPORTED: 11/05/91
DATE SAMPLED : 10/24/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration (mg/Kg) Oil & Grease
1	0400	ND<50
2	2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 74/81%
Duplicate RPD : 9%

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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84229
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/26/91

DATE RECEIVED: 10/28/91
DATE REPORTED: 11/05/91
DATE SAMPLED : 10/26/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/Kg) Gasoline Range	Diesel Range
1	0400	ND<10	ND<10
2	2000	ND<10	ND<10
3	2400	ND<10	ND<10

mg/Kg - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 10 mg/Kg
Method Detection Limit for Diesel in Soil: 10 mg/Kg

QAQC Summary:

Daily Standard run at 200mg/L: RPD Gasoline = 13
RPD Diesel = 5
MS/MSD Average Recovery = 103/102%: Duplicate RPD = 1

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825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 84229
CLIENT: Port Costa Materials
CLIENT JOB NO.: 10/26/91

DATE RECEIVED:10/28/91
DATE REPORTED:11/05/91
DATE SAMPLED : 10/26/91

ANALYSIS FOR TOTAL OIL AND GREASE
by STANDARD METHODS 5520F

LAB #	Sample Identification	Concentration(mg/Kg) Oil & Grease
1	0400	ND<50
2	2000	ND<50
3	2400	ND<50

mg/kg - parts per million (ppm)

Method Detection Limit for Oil and Grease in Soil: 50 mg/Kg

QAQC Summary: MS/MSD Average Recovery: 86/79%
Duplicate RPD : 9

Richard Srna, Ph.D.
Laboratory Director

APPENDIX E

FIELD PROCEDURES
SOIL BORING INSTALLATION

FIELD PROCEDURES
SOIL BORING INSTALLATION

On November 7 and 8, 1992, LRA Engineering of Sacramento, California, a licensed well-drilling contractor, drilled 12 soil borings (SB1 through SB14) under the direction of a Levine•Fricke engineer (Figure 5). Soil borings were drilled using a truck-mounted drill rig equipped with 8-inch-outside-diameter hollow augers to depths of 10 or 12 feet below ground surface (bgs).

During drilling, soil samples were collected for chemical analysis by driving an 18-inch-long split-spoon sampler ahead of the auger into undisturbed soil. The sampler was lined with three clean, 2-inch-diameter, 6-inch-long brass tubes. Soil samples were collected at 2, 6, and 10 feet bgs in the 10-foot deep borings and at 4, 8, and 12 feet bgs in the 12-foot deep borings.

Soil samples were immediately covered with aluminum foil, capped with tight-fitting plastic caps, sealed with tape, labeled, and placed in an ice-chilled cooler for transportation to the analytical laboratory. The samples were submitted for chemical analysis under strict chain-of-custody procedures to Precision Analytical Laboratory, Inc. of Richmond, California.

All drilling and sampling equipment was steam cleaned before use at each drilling location. Soil cuttings from each borehole were stockpiled on site.

APPENDIX F

H & H MANIFESTS

ate of California—Health and Welfare Agency

Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD981356746 | Manifest Document No. 001011 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
CATELLUS DEVELOPMENT CORPORATION
201 Mission Street, Suite 250, San Francisco, CA. 94105
4. Generator's Phone (415) 974-4617

A. State Manifest Document Number 91509030
B. State Generator's ID

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: CAD044711106
C. State Transporter's ID: 380949
D. Transporter's Phone: (415) 543-4835

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

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: CAD044711106
G. State Facility's ID
H. Facility's Phone

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	004	TM	00500	G	State / EPA/Other
b.					State / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above: FUEL OIL AND WATER
PROFILE #A1529

K. Handling Codes for Wastes Listed Above: a. T1 b. c. d.

15. Special Handling Instructions and Additional Information
JOB #9942
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR
JOB SITE: Hollis Street & 40th
Emeryville, California

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

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

GENERATOR

Printed/Typed Name	Signature	Month	Day	Year
William Madison - Levine-Fricke		01	17	91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROBERT S. HANSEN		01	17	91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

S 8022A (12/90)
A 8700-22

Yellow: GENERATOR RETAINS

State of California—Health and Welfare Agency

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See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of 1	Information in the shaded areas is not required by Federal law.
C A D 9 8 3 5 8 5 7 4 6	0 0 0 0 2		

GENERATOR

3. Generator's Name and Mailing Address
CATELLUS DEVELOPMENT CORPORATION
201 Mission Street, Suite 250, San Francisco, CA. 94105
4. Generator's Phone (415) 974-4617

A. State Manifest Document Number: 91509031
B. State Generator's ID:

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
C. State Transporter's ID: 310949
D. Transporter's Phone: (415) 543-4835

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

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
G. State Facility's ID: C A D 0 0 4 7 7 1 1 6 8
H. Facility's Phone: (415) 543-4835

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	0 0 1	T T	0 5 0 0 0	G	State 114.1[illegible] EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above:
FUEL, OIL AND WATER
PROFILE #A1529

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

15. Special Handling Instructions and Additional Information
JOB #9942
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR
JOB SITE: Hollis Street & 40th
Emeryville, California

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

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Printed/Typed Name	Signature	Month	Day	Year
William Madison-Levine-Fricke		0 1	1 2	9 2

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROBERT S. HANSEN		0 1	1 2	9 2

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
William Madison-Levine-Fricke				

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

HS 8022A (12/90)
PA 8700—22

Yellow: GENERATOR RETAINS

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

State of California—Health and Welfare Agency

Please print or type. *Form designed for use on elite (12-pitch typewriter).*

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CAD981315817 | Manifest Document No. 001012 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address
CATELLUS DEVELOPMENT CORPORATION
201 Mission Street, Suite 250, San Francisco, CA. 94105
4. Generator's Phone (415) 974-4617

A. State Manifest Document Number: 1509032
B. State Generator's ID:

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: CAD041771616
C. State Transporter's ID: 300090
D. Transporter's Phone: (415) 543-4835

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

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: CAD041771616
G. State Facility's ID:
H. Facility's Phone:

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	010	TP	01500	G	State: EPA/Other: [illegible]
b.					State: EPA/Other:
c.					State: EPA/Other:
d.					State: EPA/Other:

J. Additional Descriptions for Materials Listed Above
FUEL, OIL AND WATER
PROFILE #A1520

K. Handling Codes for Wastes Listed Above
a. T1 b.
c. d.

15. Special Handling Instructions and Additional Information
JOB #9942
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR
JOB SITE: Hollis Street & 40th
Emeryville, California

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

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Printed/Typed Name	Signature	Month	Day	Year
William Madison-Livermore	[signature]	01	12	91

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROBERT S. HANSEN	[signature]	01	12	91

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

DHS 8022A (12/90)
CA 8700—22

Yellow: GENERATOR RETAINS

State of California—Health and Welfare Agency

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See instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law.
CA D 9 8 3 5 8 5 7 4 6	0 0 0 0 4		

3. Generator's Name and Mailing Address
CATELLUS DEVELOPMENT CORPORATION
201 Mission Street, Suite 250, San Francisco, CA. 94105
4. Generator's Phone (415) 974-4617

A. State Manifest Document Number: 9159060
B. State Generator's ID:

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: CA D 0 0 4 7 7 1 1 6 8
C. State Transporter's ID: 100989
D. Transporter's Phone: (415) 543-4835

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

9. Designated Facility Name and Site Address:
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: CA D 0 0 4 7 7 1 1 6 8
G. State Facility's ID: CA D 0 0 4 7 7 1 1 6 8
H. Facility's Phone: (415) 543-4835

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	010	TT	05000	G	State: EPA/Other:
b.					State: EPA/Other:
c.					State: EPA/Other:
d.					State: EPA/Other:

J. Additional Descriptions for Materials Listed Above:
FUEL, OIL AND WATER
PROFILE #61539

K. Handling Codes for Wastes Listed Above:
a. T01 b.
c. d.

15. Special Handling Instructions and Additional Information:
JOB #9942
24 Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR
JOB SITE: Hollis Street & 40th
Emeryville, California

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Printed/Typed Name	Signature	Month	Day	Year
William Madison-Levine-Fricke		01	12	1991

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ROBERT S. HANSEN		01	12	1991

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

8022A (12/90)
87[illegible]-22

Yellow: GENERATOR RETAINS

IN CALIFORNIA, CALL 1-800-852-7550

te of California—Health and Welfare Agency
ase print or type. Form designed for use on elite (12-pitch typewriter).

See Instructions on back of page 6.

Department of Health Services
Toxic Substances Control Program
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C A D 9 8 1 3 5 8 5 7 4 6 | Manifest Document No. 0 1 0 1 0 1 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

GENERATOR

3. Generator's Name and Mailing Address
CATELLUS DEVELOPMENT CORP.
201 Mission Street, Suite 250, San Francisco, CA. 94105
4. Generator's Phone (415) 974-4617

A. State Manifest Document Number: 91508378
B. State Generator's ID:

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 0
C. State Transporter's ID: 710650
D. Transporter's Phone: (415) 543-4835

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

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 0
G. State Facility's ID: C A D 0 0 4 7 7 1 1 6 0
H. Facility's Phone: (415) 543-4835

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
a. OIL AND WATER NON-RCRA HAZARDOUS WASTE LIQUID	0 0 1	T T	02600	G	State EPA/Other
b.					State EPA/Other
c.					State EPA/Other
d.					State EPA/Other

J. Additional Descriptions for Materials Listed Above
FUEL, OIL AND WATER
PROFILE #A1537

K. Handling Codes for Wastes Listed Above
a. T1 | b.
c. | d.

15. Special Handling Instructions and Additional Information
JOB #10208
24-Hr. Emergency Contact: H & H #(415) 543-4835
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR
JOB SITE: CATELLUS DEVELOPMENT
Hollis Street & 40th
Emeryville, California

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

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Printed/Typed Name	Signature	Month	Day	Year
William Mahoney for Catella		0 1 3	1 0 1 4	1 9 1 2

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
ESTEBAN M. PENALVER		0 1 3	1 0 1 4	1 9 1 2

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Month	Day	Year

DO NOT WRITE BELOW THIS LINE.

S 8022A (12/90)
8700—22

Yellow: GENERATOR RETAINS

APPENDIX G

AERATION BED CONSTRUCTION AND SAMPLING PROCEDURES

AERATION BED CONSTRUCTION AND SAMPLING PROCEDURES

Construction

Aeration beds 1, 3, 4, 5, and 6 were constructed by lining graded and bermed areas with two layers of 6-mil visquine. Aeration bed 2 was constructed by ARI in June 1991 (SP-10; Figure 4) using 6 inches of sand covered with one layer of 6-mil visquine and topped with another 6 inches of sand. Soil was generally placed on aeration beds in 12-inch to 18-inch loose lifts using front loaders operated by Plant Reclamation.

An agricultural disc was used to turn the soil on bed 1 for aeration; however, the discs became clogged with soil and did not effectively turn the soil. Two excavators with "grappler" extensions were used to turn and mix the soil on the remaining aeration beds. Soil on the aeration beds was turned and mixed two to three times before final soil samples were collected.

Sampling

Soil samples were collected from the aeration beds using a "grid approach": one soil sample was collected from every 50 cubic yards of aerated soil. Levine·Fricke personnel collected one to two soil samples (depending on the size of the grid) from random locations within each cell at depths ranging from 6 to 20 inches below the top surface of the aerated soils. A total of 197 soil samples was collected from the 6 aeration beds. Of the first 50 samples collected (SS-1 through SS-50) in May 1992, only 30 were analyzed (SS1 through SS-30). Based on the results for these samples, soils were turned once more to further aerate the soil.

When PID readings of the aerated soils indicated that the concentrations of volatile organic compounds (VOCs) had dropped significantly, the remaining 168 samples (SS-51 through SS-218) were collected. This sampling occurred during the period from July 17 to August 28, 1992. Laboratory analytical results for samples collected from the aerated soils are summarized in Table 8.

Soil samples were collected in accordance with procedures described in Appendix B. Samples were delivered by courier to Precision Analytical Laboratory, Inc. for analysis of total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and xylenes using EPA Methods 8015/8020. Thirty samples also were analyzed for TPH as diesel and oil using Modified EPA Method 8015.

APPENDIX H

SW-846 ANALYSIS FOR SOIL SAMPLES COLLECTED FROM AERATION BEDS

SW-846 ANALYSIS FOR SOIL SAMPLES COLLECTED FROM AERATION BEDS

Aeration bed sample results were analyzed using guidelines outlined in Chapter 9 of the Environmental Protection Agency Office of Solid Waste Management Document SW-846, Test Methods for Evaluating Solid Waste (hereafter referred to as "EPA SW-846"). The results of this analysis indicate that a sufficient number of samples have been collected from the aeration beds to adequately characterize the aerated soils. A description of this method and the results of this analysis are presented below.

The statistical approach presented in EPA SW-846 suggests a random sampling process. The application of the simple random sampling process described in EPA SW-846 for aeration beds of petroleum-affected soils consists of the following protocol:

1. Divide the lateral and vertical extent of the stockpile into an imaginary three dimensional block of uniformly sized cells.

2. Assign a series of consecutive numbers to the cells.

3. Compute the mean and variance of the available representative laboratory analytical results of soil samples of the excavated petroleum-affected soils using equations listed in Table 9-1 of EPA SW-846.

4. Compute the appropriate number of samples to be collected using equation 8 of Table 9-1 in EPA SW-846.

5. Select the cells to be sampled through the use of a random-number generator/table.

Based on the SW-846 analysis of analytical results for the soils aerated as directed by Levine·Fricke personnel, it was determined that a sufficient number of soil samples had been collected to characterize the aerated soils. Calculations and results of SW-846 analysis on soils aerated by Levine·Fricke personnel are presented below and in Table H-1.

Statistical Analysis of Soil Sampling Results Using EPA SW-846

Statistical analysis (EPA SW-846) was used to assess the number of additional samples (N) required to characterize the soil concentrations with an 80% confidence level.

Equation 8 of Table 9-1 (EPA SW-846):

$N = t_{0.2}^2 s^2 / (c-x)^2$

Parameters:

N Appropriate number of samples to collect from a soil waste

s Standard deviation of sample

s^2 Variance of sample

x Mean measurements generated by sample

t t value tabulated for various degrees of freedom confidence intervals and probabilities

n Degrees of freedom

c concentration criterion for constituent in soils proposed for use as backfill

Where, for example, for TPHg in aerated soils (using data presented in Table H-1):

s^2 = 70.56

x = 2.79

$t_{0.2}$ = (0.842 for n > 120 and a probability of 0.20)

c = 10 ppm

$N = t_{0.2}^2 s^2 / (c-x)^2 = (0.842)^2 (70.56) / (10 - 2.79)^2$

= less than 1

No additional samples are required to characterize the quality (with an 80% confidence level) of TPHg-affected soils proposed for use as backfill at the Ransome Site.

TABLE H-1

STATISTICAL ANALYSIS OF AERATED SOILS
RANSOME PROPERTY, EMERYVILLE, CALIFORNIA

	Compound				
	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes
Count	196	196	196	196	196
Average	2.79E+00	3.68E-03	3.09E-03	7.43E-03	4.01E-02
Standard Deviation	8.4	0.009	0.003	0.027	0.33
80% UCL	3.79E+00	4.76E-03	3.41E-03	1.06E-02	7.94E-02
Maximum Value	1.10E+02	1.20E-01	3.00E-02	3.20E-01	4.60E+00
N	<1.0	<1.0	<1.0	<1.0	<1.0

Count = Number of soil samples

Average = Average concentration, presented in parts per million (50% of detection limits used as the concentration for samples with below method detection limit results).

UCL = Upper confidence level

Maximum Value = Maximum detected concentration, presented in parts per million

N = Additional samples to be collected from a solid waste using the methods described in EPA SW-846 (with an 80 percent confidence level)

TPHg = Total petroleum hydrocarbons as gasoline