CITY OF EMERYVILLE

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June 18, 2002

Stephen Hill
California Regional Water Quality Control Board, San Francisco Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Barbara Cook
Department of Toxic Substances Control Board
700 Heinz Street, Suite 200
Berkeley, CA 94710

Subject: Ryerson-Tull Facility, 1465 65th Street, Emeryville

Dear Ms. Cook and Mr. Hill:

Please find enclosed the Closure Plan and two addenda thereto for the subject facility. The Conditional Approval will be sent under a separate transmittal from Susan Colman. Please call me at (510)596-4356 if you have any questions. Thank you.

Sincerely,

IGNACIO DAYRIT
Project Manager

cc: Susan Hugo
Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Lynn Nakashima
DTSC
700 Heinz Street, Suite 200
Berkeley, CA 94710

Betty Graham
California Regional Water Quality
Control Board, San Francisco Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Treadwell&Rollo

26 March 2002
Project 3212.02

Opus West Corporation
c/o Jon K. Wactor, Esq.
Luce, Forward, Hamilton & Scripps, LLP
121 Spear Street, Suite 200
San Francisco, California 94105

Subject: Closure Plan
Ryerson-Tull Steel Property
1465 65th Street
Emeryville, California

Dear Mr. Wactor:

Treadwell & Rollo, Inc.'s Closure Plan for the proposed development at 1465 65th Street in Emeryville, California is attached.

Our scope of services for this task included preparing a Closure Plan according to the requirements of the City of Emeryville and in accordance with the terms and conditions outlined in our revised proposal with Opus West Corporation dated 11 December 2001. In preparing this plan, we have endeavored to observe that degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographical area

We appreciate the opportunity of assisting you with this project.

If you have any questions, please contact us.

Sincerely yours,
TREADWELL & ROLLO, INC.

Jeffrey F. Ludlow, R.G.
Senior Project Manager

Philip G. Smith, R.E.A. II
Principal Geologist

32120205.JFL

Attachment

CLOSURE PLAN
RYERSON–TULL STEEL PROPERTY
1465 65TH STREET
Emeryville, California

Opus West Corporation
San Francisco, California

26 March 2002
Project No. 3212.02

Treadwell&Rollo
Environmental and Geotechnical Consultants

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CLOSURE PLAN
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1465 65TH STREET
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1.0 INTRODUCTION

Treadwell & Rollo, Inc. presents this Closure Plan for the property at 1465 65th Street in Emeryville, California (Figure 1). Opus West Corporation (Opus) proposes to purchase the site for development as a four-story apartment building and associated four-story parking garage. The purpose of this plan is to summarize the soil and groundwater data and risk evaluation presented in our 21 January 2002 Phase II Environmental Site Assessment (ESA) and propose site mitigation measures for approval by the City of Emeryville, the lead agency for the site cleanup.

1.1 Site Location and Description

The site is at the southwest corner of 65th and Hollis Street in Emeryville and is owned by Joseph T. Ryerson & Son, Inc., which wholesales steel products from the site. The approximately 4.5 acre site is covered in the northern part by a steel and concrete warehouse approximately 160,000 square feet in size, and in the southern part by an asphalt-paved outdoor storage and parking area (Figure 2). The current site improvements will be demolished to make way for site redevelopment.

The property is located within an area of Emeryville composed predominantly of recently developed commercial and retail businesses. Historically, the area has a history of industrial activity. Several adjacent properties are discussed in detail in Section 2.3.

1.2 Proposed Site Development and Construction Overview

Opus proposes to construct 5 four-story apartment buildings clustered together with central landscaped courtyards and a swimming pool on the northern part of the site, and an above ground multi-story parking garage on the southern part of the site, as illustrated on Figure 3.

For the apartment buildings and garage, spread footing foundation excavations will extend to approximately 3 feet below existing site grade except in the southwest corner of the site where they will extend to approximately 6 feet below existing site grade. Excavations for the swimming pool and elevator pits will extend to approximately 6 to 8 feet below existing site grade. Approximately 70,000 square feet of area between the apartment buildings will be constructed as courtyards. The landscaped areas in these courtyards will have the top two feet of soil replaced with clean fill from an offsite source. For geotechnical purposes, select non-expansive fill may be imported and placed beneath portions of the building pads on the eastern side of the site.

2.0 SUMMARY OF SITE ENVIRONMENTAL INVESTIGATIONS

Several phases of environmental investigations have been completed recently at the site by Treadwell & Rollo, and previously by others. These include investigations for underground storage tank (UST) closure and monitoring, and to assess soil and groundwater quality at suspected on-site contamination source areas and at up and down-groundwater gradient areas of the site. These are on file with the City of Emeryville and the County of Alameda.

2.1 Previous Investigations

In 1993 one 10,000-gallon diesel UST, associated product lines and pump island was removed by SEMCO from the site at the location indicated on Figure 2. Confirmation soil samples were obtained from the tank excavation and the spoils pile. One groundwater sample was obtained from the excavation pit. Both soil and water samples were analyzed for Total Petroleum Hydrocarbons as diesel (TPHd), and benzene, toluene, ethylbenzene and xylenes (BTEX). The compounds TPHd and toluene were both detected at relatively low concentrations in soil. The water sample was found to contain TPHd (SEMCO, 1993). Laboratory analytical results are summarized in Table 1.

Also in 1993, a Phase 1 Subsurface Investigation was completed by Hydro Environmental Technologies, Inc. (HETI) to assess the extent of petroleum hydrocarbons in the subsurface soil and groundwater in the vicinity of the removed UST earlier that year. The investigation included drilling three soil borings, converting the borings to monitoring wells, and obtaining soil and groundwater samples. The well locations are illustrated on Figure 2 as RMW-1 through RMW-3. TPHd was not detected in the soil samples collected from each boring. Approximately 0.02 feet of floating product was observed in well RMW-3, and low concentrations of benzene and toluene were detected in the groundwater sample from well RMW-2. The groundwater table was measured at 4.23 feet to 4.94 feet below the top of the well casings (HETI, 1993). The groundwater sample analytical results are summarized in Tables 2a and 2b.

A quarterly groundwater monitoring of wells RMW-1 through RMW-3 was completed by HETI on 21 December 1993. HETI estimated groundwater flow to be north-northwest. Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and BTEX compounds. Low levels of TPHg were detected in RMW-1 and RMW-2 likely resulting from heavier petroleum hydrocarbons in the sample such as diesel and/or oil, consistent with data collected during subsequent sampling events and the suspected contaminants. BTEX compounds were not detected. Approximately 0.02 feet of floating product was measured on the groundwater table in well RMW-3 (HETI, 1993).

A 1995 site investigation by Erler & Kalinowski, Inc. (EKI) detailed soil and groundwater sample analytical results, and conclusions and recommendations for the site and adjacent properties north, south and east of the site. Their investigation included drilling and sampling borings S-9 through S-13, P-1 and P-5, and constructing monitoring wells MW-2 through MW-4 at locations illustrated on Figure 2. These borings and wells were drilled at suspected sources of hazardous materials releases and at up and down groundwater-gradient areas of the site. Soil analysis detected concentrations of lead, chromium, beryllium, copper, nickel, and zinc (Table 4). The only metal detected in groundwater at the site was zinc (Table 6). Soil analyses were non-detect for TPHd and relatively low for Total Recoverable Petroleum Hydrocarbons (TRPH) (Table 3). TPHd was detected in one grab groundwater sample (Table 6).

Total Extractable Petroleum Hydrocarbons (TEPH) were detected in groundwater samples from each of the six wells, as summarized in Table 2a. Polychlorinated biphenyls (PCBs) were detected in one soil sample collected from boring MW-3 at a low concentration. No source was found for that detection. Polycyclic Aromatic Hydrocarbons (PAHs) and BTEX compounds were not detected in soil or groundwater at the site. Several volatile organic compounds (VOCs) were detected in soil and groundwater samples (Tables 2a, 2b, 3 and 5). This investigation estimated groundwater flow to be west-southwest, toward San Francisco Bay (EKI, 1995).

In November 2001 a Phase I ESA was completed by SECOR International, Inc. (SECOR) for the site. The report summarized prior and current development of the site, presented the results of a regulatory agency database search and identified several environmental issues at the site. The environmental issues identified include historical on- and off-site activities that may have affected both site and regional soil and groundwater (SECOR, 2001).

On 21 January 2002, Treadwell & Rollo completed a Phase II ESA report for the site. During that investigation, Treadwell & Rollo drilled and sampled soil and groundwater from 15 soil borings and collected additional groundwater samples from the 6 existing groundwater-monitoring wells for chemical analysis. The Treadwell & Rollo soil boring locations are illustrated on Figure 4, the data are summarized in Tables 2 through 6. We observed clayey silt, silt, and clayey silty sand fill in the upper one to four feet of the soil borings. Below this unit we observed clayey silt, silty clay and clay with minor amounts of sand to the total depth drilled of approximately 13 feet bgs. Groundwater was encountered in the wells from approximately 3.25 feet bgs to 5.0 feet bgs (Table 7) and was estimated to flow southwest beneath the site. Relatively low petroleum hydrocarbon and metal concentrations were detected in the soil samples. VOCs and PCBs were not detected in the soil samples. Metals were detected in the soil samples at concentrations well below hazardous waste levels. However, similar to the previous groundwater investigations by others, elevated petroleum hydrocarbons (oil) and VOC concentrations were detected in all the groundwater samples, except one, indicating that the site is located in an area with generalized groundwater contamination.

We also surveyed the site building for asbestos-containing building materials (ACM) and lead-based paint (LBP), considering the results of a previous survey completed by The Cohen Group. Friable ACM was identified in the building pipe and boiler insulation, cement flue and vinyl floor tiles. Non-friable ACM was identified in the asphalt coating on the building corrugated roof and wall interior and exteriors. LBP was identified throughout the site building. However, most of the paint was in good condition (not flaking or peeling).

2.2 Summary of Regional Soil and Groundwater Quality Conditions

The project site is located in an area of Emeryville with a history of industrial activities with associated releases of petroleum hydrocarbons and hazardous materials. Therefore, the background groundwater quality in the area is poor. However, many of these release sites have since been redeveloped for residential, commercial, retail and other non-industrial activities. The 1995 EKI report and 2001 SECOR report discussed environmental conditions at several adjacent and neighboring properties located up- and cross-gradient of the site that reported chemical releases. Appendix A contains a figure of neighboring site sampling locations and tabulated data from the 1995 EKI report. A summary of the neighboring properties is presented below.

Former RIX Industries Property – 6460 Hollis Street

The former RIX Industries property site is located east, upgradient from the subject site, directly across Hollis Street (Figure 2). A file review conducted by EKI indicated that ten USTs were formerly located at the RIX Industries site. Five of the tanks, located inside the RIX building, were closed-in-place in August 1994. The remaining tanks, located within the yard of the property, were removed in December 1994. According to EKI, all have received closure from the Alameda County Department of Environmental Health (ACDEH). Tank contents reportedly included chlorinated solvents, sec-butyl alcohol, isopropyl alcohol, methyl ethyl ketone, ethylsilicate, diesel, mineral spirits, and sec-butanol. Subsurface investigations at the RIX Industries site discovered the presence of chlorinated solvents, industrial solvents, alcohols, and petroleum hydrocarbons in soil and groundwater. Concentrations of petroleum hydrocarbons are reported by EKI to have decreased since the closure of the USTs. SECOR reviewed regulatory

agency files and found that the ACDEH and the California Regional Water Quality Control Board (RWQCB) concluded that the RIX property is a low risk soil and groundwater case and can be closed with an approved long-term risk management plan. The former RIX Industries property was redeveloped as commercial office space.

Former Henry Horn & Sons Property – 1301 65th Street

The former Henry Horn & Sons (Horn) property is located directly across Hollis Street and upgradient from the northeast corner of the site (Figure 2). In 1988, a 2,000-gallon gasoline UST was removed from the Horn property. Confirmation soil samples contained low levels of gasoline. A groundwater monitoring well was installed downgradient from the tank and sampled on a quarterly basis. Gasoline and BTEX compounds have been historically detected at the Horn property. The 1995 EKI report states that ACDEH plans to close the Horn property case. The former Horn property was redeveloped as commercial office space.

Former Capital Refining Company / Lowenberg Property – 65th and Hollis Streets

The former Capital Refining Company property is adjacent to the southern property line of the subject site (Figure 2). This property is cross to up-gradient from the subject site, depending on seasonal variations in groundwater flow. According to the EKI report, this site was historically used as an oil refinery from at least 1911 to approximately 1949. EKI detected elevated heavy petroleum hydrocarbon concentrations in soil and groundwater samples collected from this property. The former Lowenberg property, at the eastern part of the former refinery, had two leaking USTs. According to EKI, soil samples collected from the UST excavation sidewalls and groundwater samples collected from wells on the site contained elevated TPHg and BTEX concentrations. Additionally, SECOR reported that elevated VOC concentrations were detected in wells on this adjacent property. This adjacent property was redeveloped for commercial use. Prior to redevelopment, a Construction Risk Management Plan and Post-Construction Risk Management Plan were prepared for the site development.

Federal Express Property – 1600 63rd Street

The Federal Express property is located across 64th Street and south of the site (Figure 2). A file review performed by EKI in 1995 at ACDEH offices indicated that a leak from a 10,000-gallon UST was discovered in 1988. Three groundwater monitoring wells were subsequently installed. Groundwater samples were found to contain TPHg. According to EKI, it is unclear whether further characterization or remediation of the site has occurred. The Federal Express property is cross-gradient from the subject site.

Former Grove Valve and Regulator Property – 6529 Hollis Street

The former Grove Valve and Regulator (Grove) property is directly north of the subject site across 65th Street (Figure 2). The Grove property is predominantly cross- and, to a lesser extent, up-gradient from the subject site depending on seasonal variations in groundwater flow. According to EKI, a preliminary soil and groundwater investigation was conducted by Grove in February 1992. Total oil and grease was detected in soil with the highest concentrations detected in samples collected along 66th Street. According to EKI, the only VOC detected in soil was tetrachloroethene (PCE), which is likely associated with regional groundwater contamination. The three monitoring wells installed on the Grove property have all detected several VOCs including PCE. The source of the VOCs detected in groundwater has not been determined. The former Grove property has been redeveloped for commercial and retail use.

2.3 Discussion of Soil and Groundwater Conditions at the Ryerson Site

Since 1988, over 80 soil and groundwater samples have been collected from the site for chemical analysis during several phases of environmental investigations. Based on these data, as discussed above, significant releases of petroleum hydrocarbons and hazardous materials were not identified at the site that would likely cause regulatory requirements for long-term monitoring and remediation. The elevated heavy petroleum hydrocarbon data in groundwater samples from the southern part of the site and the elevated VOCs in groundwater samples from the southern and eastern parts of the site likely result from release from historic off-site activities as discussed in Section 2.2. Also discussed in Section 2.2, the adjacent former industrial

properties have recently been redeveloped for commercial and retail use, which would change the land use that likely caused the releases. Additionally, the VOCs detected in groundwater samples from site wells (Table 2b) appear to have stabilized and/or decreased during the groundwater monitoring period that started in 1995.

The relatively low heavy petroleum hydrocarbons from site soil samples likely result from minor releases of oils historically used at the site. The presence of these heavy petroleum hydrocarbons does not warrant specific remedial action but will be properly managed, as discussed in Section 4.0, if encountered during soil excavation tasks. Groundwater flow direction beneath the site was calculated by several consultants and found to flow in various directions including northwest, west-southwest and southwest. Based on these flow directions and the site area topography, the groundwater flow direction may vary season to season but in general flows west towards San Francisco Bay.

3.0 RISK EVALUATION

Considering the site soil and groundwater data, a risk evaluation was completed for the future site construction workers and future site occupants. The following presents a summary of the health risk evaluation for future construction workers and future site occupants of the apartment building considering the building construction (concrete slab foundation) and the chemicals detected in soil and groundwater below the site. This evaluation does not include health risks to the future building maintenance and landscape workers since the site will be covered with concrete/asphalt and/or clean imported soil.

3.1 Selection of Chemicals of Concern (COCs)

COCs were identified by reviewing the chemicals detected in the soil and groundwater samples, as presented in the tables, whose toxicity could cause deleterious health affects to exposed future site occupants. The COCs for this risk evaluation are the VOCs, BTEX, SVOCs and metals summarized in Tables 8, 9 and 11 attached.

3.2 Exposure Assessment

Following the selection of COCs, an exposure assessment was conducted to identify potential routes of exposure. In order for an exposure scenario to be complete, there must be a source of chemicals, a mechanism for transporting the chemicals to the exposure point, and receptors (humans) present at the exposure point. The exposed population for each of the potential pathways includes future apartment and garage building construction workers and residents.

3.2.1 Analysis of Potential for Exposure to Chemicals in Soil

Soil dust inhalation, dermal contact, and ingestion are potential exposure scenarios for chemicals in the soil. However, since the entire site will be capped with a concrete slab, asphalt parking areas, and landscaped courtyards, the future site occupants will not be in contact with the site soil. Therefore, there is no soil dust inhalation, dermal contact and ingestion exposure pathway for the future site residents to the chemicals in the site soil. However, since the development construction workers will be in contact with the soil, this exposure pathway will be evaluated for the construction worker risk estimate. This construction worker exposure scenario assumes that no site-specific health and safety protocols and engineering controls (worker protective clothing, dust control and personal hygiene controls) will be implemented. Therefore, the construction worker exposures and associated risks and hazards presented in this evaluation are over-estimates of actual site risk once suitable personal protection procedures are implemented. Consequently, implementation of health and safety protocols and engineering controls during construction would reduce the construction worker risk to acceptable levels. To ensure protection of human health and safety in the event that subgrade soil is encountered after development is completed, a Risk Management Plan (RMP) will be developed as discussed in Section 4.3.

3.2.2 Analysis of Potential for Exposure to Chemicals in Groundwater

Groundwater beneath the site will not be used for drinking water, irrigation or commercial purposes at the site. Additionally, the City of Emeryville has determined that groundwater in the general area will not be used as a drinking water source. Therefore, there is no complete exposure pathway to future site occupants to the chemicals in the site groundwater.

3.2.3 Analysis of Potential for Exposure to Chemical Vapors from Soil and Groundwater

The final exposure scenario for the future site residents is for the COCs that have a vapor pressure sufficient to migrate vertically from soil and groundwater through the vadose zone soil and building slab, and into the site structure. Since VOCs and BTEX compounds are COCs for soil and groundwater, this exposure pathway was evaluated as part of the future site occupant risk estimate. Additionally, this exposure pathway was evaluated for the future construction worker risk estimate. The risk evaluation showed no significant risk levels to future on- site residents from vapor migration and an easily mitigatable risk to construction workers.

3.3 Risk Estimate

To assess the potential adverse health effects resulting from the COCs in soil and groundwater beneath the site, excess cancer risks and noncarcinogenic hazard quotients were estimated for the future site construction workers and occupants. To estimate these risks, we used the Risk Based Screening Level (RBSL) process established by the California Regional Water Quality Control Board (RWQCB, 2001). This process was developed to estimate risks based on an indoor air quality scenario for a residential exposure scenario, and direct dermal contact and vapor inhalation for the construction worker exposure scenario assuming site-specific data. These data include a fine-grained soil and exposure point or maximum detected concentrations for each COC outlined in Tables 8, 9 and 11.

For the future residential exposure scenario, using the above site-specific data on the Tier 1 Lookup Tables of the RBSL process, as summarized on attached Table 10, the excess cancer risk for future site occupants is 8.10×10^{-7} or 8.10 chances in 10 million. The noncancer hazard index is 8.18×10^{-4}. These values are both significantly below the target or regulatory accepted cancer risk of 1×10^{-6} and target hazard index of 1, as recommended by the U.S Environmental Protection Agency (RWQCB, 2001).

For the future unprotected construction worker exposure scenario, the excess cancer risk is 4.20×10^{-6} or 4.20 chances in 1 million. The noncancer hazard index is 4.35×10^{-2}. The excess cancer risk for the construction worker is greater than the risk of 1×10^{-6} recommended by the U.S. EPA. (RWQCB, 2001). Chromium contributes the greatest risk (3.46×10^{-6}) to the total excess cancer risk because the chromium soil screening level assumes chromium exists as a 1/6 ratio of chromium VI and chromium III. As mentioned above, however, the construction worker risk evaluation will be an over-estimate of risk due to the implementation of site-specific health and safety protocols and engineering controls to reduce potential dust emissions and direct worker contact with soil. These protocols and controls, including worker protective clothing, dust control and personal hygiene control, will significantly reduce construction worker exposures. Chemicals detected in the groundwater were not evaluated in the risk evaluation of the construction worker as the exposure duration would be too short for risk estimation using the RBSL process. As with the soil, site-specific health and safety protocols and engineering controls will be implemented to reduce potential worker contact with groundwater.

4.0 PROPOSED SITE MITIGATION MEASURES

4.1 Building Mitigation Plan

Several types of regulated materials were identified at the site that will require proper abatement and disposal. These materials include ACM, LBP, containers of cutting and lubrication oils used as part of the site operations, and drums of soil cuttings and purged groundwater from the

environmental investigations at the site. Following is summary of the plans to be prepared to properly handle these materials as part of the site development.

An ACM abatement plan will be prepared to outline proper procedures to remove the friable ACM in the office and utility areas of the site building prior to building demolition. The abatement plan will also outline proper demolition procedures for the building wall and roof coating with non-friable ACM to comply with California OSHA standards related to working with ACM and to mitigate fiber release. The abatement plan will also outline proper procedures to remove the minimal amounts of flaking LBP that were observed on the site building and disposal profiling of building material with intact LBP. Proper worker training and health and safety requirements will be presented in this plan.

To remove the containers of oils and drums of groundwater and soil, bids will be solicited from at least two contractors licensed to handle, haul and dispose hazardous materials. Also, several areas of accumulated dry oil stains (approximately 15,000 square feet) were observed on the building concrete floor slab. To separate this oil from the slab prior to slab demolition, the oil will be dry-scraped, stored in proper containers and disposed of at an appropriate licensed facility. The containers and accumulated oil stains will be removed prior to building demolition to prevent these materials from being disposed with the debris resulting from the building demolition.

4.2 Construction Hazardous Materials Risk Management Plan

Since the development activities will disturb underlying soil and groundwater that is affected by the chemicals discussed in Section 2.0, a Construction Risk Management Plan will be prepared. This plan will outline proper soil and groundwater handling procedures to reduce worker and public exposure to the chemicals of concern. The plan will also describe site capping (i.e. building slabs, asphalt paved parking lots and/or clean imported fill) to isolate the affected soil from the future site occupants. For excavated soil not used on site, the plan will include proper soil profiling and disposal procedures, and contingency procedures for unexpected hazardous materials found during construction.

The proposed construction activities will disturb the underlying fill during excavation activities for the foundation and other subgrade improvements such as utilities and elevator pits. Dust control measures to reduce worker and public exposure will be detailed in the plan. These measures are typically performed by the excavation contractor and may include moisture-conditioning the soil, using dust suppressants or by covering the exposed soil with plastic sheeting.

Also to be detailed in the plan are dewatering procedures to properly handle and dispose of the groundwater that is encountered in excavations. Since groundwater is on average approximately 4 feet below existing site grade, it will likely need to be pumped from the swimming pool excavation, elevator pits, and possibly during construction of the building foundation in the southwestern corner of the site. Typically, groundwater with minimal contamination is disposed of in the local sanitary sewer system. Since groundwater beneath the site is contaminated with petroleum hydrocarbons and VOCs, it will likely require some degree of pre-treatment prior to disposal into the East Bay Municipal Utility District (MUD) sewer system under a Special Discharge Permit. Another possible disposal option is to discharge the pumped groundwater into the storm water system under an existing NPDES permit for the Emeryville area. Either option will require treating the groundwater for the organic chemicals detected in the site groundwater samples prior to discharge.

On the basis of our risk evaluation, there are potential health and safety risks to construction workers associated with chemicals detected at the site. The routes of potential chemical exposure could be through three pathways: (1) dermal contact with the soil, (2) inhalation of dusts and/or vapors, and (3) ingestion of the soil. Impacted groundwater may also be encountered in limited quantities during site construction. The potential pathways of impacted groundwater exposure are similar to the soil exposure pathways and will be addressed in the project health and safety plan.

The most likely potential for human exposure to the chemicals in the soil will be during soil excavation and grading operations. Because on-site materials may contain chemicals in excess of

Proposition 65 guidelines, proper health and safety procedures, as well as warning requirements will be implemented during construction.

4.3 Site Operations and Maintenance Hazardous Materials Risk Management Plan

The objective of these site maintenance requirements is to ensure that the long-term site mitigation measures, specifically capping the soil, will remain effective during the site's use and occupancy period. The owner and operator will maintain this plan, maintenance work plans, and maintenance records in a readily accessible on-site location and shall be responsible for informing any employee or contractor performing below grade construction of the environmental conditions, soil management concerns, and health and safety requirements stipulated in this plan.

These measures will also be enforced during any post-development construction activities such as utility line repair, building expansion, and other activities that may disturb the underlying contaminated soil and groundwater. To maintain the integrity of the cap and to protect future site workers who may disturb the cap, the following procedures must be adhered to by the owner and/or operator of the site:

1. Prepare a specific work plan that includes a description of the proposed construction activities, soil management plan, and health and safety plan.
2. Direct any contractor or employee who disturbs the encapsulating layer and is engaged in any excavation or earth movement at the property to comply with any applicable local, State, and Federal regulations.
3. Direct any contractor or employee engaged in any activities that involve penetrating the caping layer to repair the disturbed area as soon as is practical.
4. Control dust by wetting and protect exposed or excavated soil from storm run-on and run-off during the period of excavation, soil movement, or exposure.
5. Determine by appropriate testing whether any excess material removed from the site is hazardous pursuant to State or Federal hazardous criteria. This material must be managed in accordance with any applicable regulations.
6. Prevent passers-by from coming into contact with the soil.

5.0 SUMMARY

Since 1988, over 80 soil and groundwater samples have been collected from the site for chemical analysis during several phases of environmental investigations. Based on these data, significant releases of petroleum hydrocarbons and hazardous materials were not identified at the site that would likely cause regulatory requirements for long-term monitoring and remediation. The petroleum hydrocarbons and VOCs detected in groundwater samples collected from the site likely result from past releases from historic off-site industrial activities. However, many of these neighboring industrial properties have been redeveloped for commercial and retail use, they are no longer continuing sources of industrial contamination and therefore general area-wide concentrations are likely to decline over time. Additionally, the sampling data show that the historic trend of site groundwater VOC concentrations are stabilizing and/or decreasing since 1995.

The relatively low concentrations of heavy petroleum hydrocarbons detected in site soil samples likely result from minor releases of oils historically used at the site. The presence of these heavy petroleum hydrocarbons does not warrant specific remedial action but will be properly managed according to the Risk Management Plans, as discussed in Section 4.0, if encountered during soil excavation. Considering the site soil and groundwater data, a risk evaluation was completed for the future site construction workers and future site occupants. The evaluation results do not indicate a risk to future site occupants above regulatory-accepted risk levels considering the site data and development plan. Therefore, special building mitigation measures are not necessary for the proposed structures. Potential health risks to construction workers will be readily mitigated by implementing the site-specific health and safety protocols and engineering controls during construction to be outlined in the Risk Management Plans.

Based on the discussion above, we recommend that the City of Emeryville approve this Closure Plan with no further site investigation or mitigation measures other than what is outlined in this plan. The City should also note that the County is processing the closure of the fuel UST that was formerly located on the site.

6.0 LIMITATIONS

Activities undertaken as part of this assessment were conducted on behalf of Opus West Corporation, involved in the development of the project site, and they are the only intended beneficiaries of our work. The work was performed to assess the possible presence of a significant release of petroleum hydrocarbons and hazardous materials at the subject site based on the scope of services performed. No other party should rely on the information contained in this report without the written consent of Treadwell & Rollo, Inc. The findings and discussions presented in this report are professional opinions based on the specific activities conducted.

Opinions presented herein apply to site conditions existing at the time of our assessment, and cannot necessarily be taken to apply to site changes or conditions of which we are not aware and have not had the opportunity to evaluate.

The assessment did not include testing for the presence of PCBs in transformers or other electrical equipment, or naturally-occurring environmental hazards (e.g., radon). The assessment did not address non-chemical hazards, such as the potential for seismic hazards at the site.

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TABLES

Table 1
Diesel Underground Storage Tank Removal
Sample Results by Others
1465 65th Street
Emeryville, California

Sample ID	Sample Date	Matrix	Results of Analysis					
			Benzene	Toulene	Ethylbenzene	Xylenes	TPH as Diesel	STLC Ba
West End 8' 6"	3/11/93	Soil	<0.003	<0.003	<0.003	<0.009	<10	NA
East End 9' 6"	3/11/93	Soil	<0.003	<0.003	<0.003	<0.009	<10	NA
Comp Soils	3/11/93	Soil	<0.003	**0.007**	<0.003	<0.009	**26**	**0.5**
Excavation Pit Water	3/11/93	Water	<0.3	<0.3	<0.3	<0.9	**850**	NA
Indoor Air Cancer-Based RBSL	2001	Soil	0.18	0.31	NC	NC	NA	NV
Indoor Air Noncancer-Based RBSL	2001	Soil	NA	NA	NA	210 sat	NA	NV
Indoor Air Cancer-Based RBSL	2001	Water	5.8E+03	NC	NC	NC	NA	NV
Indoor Air Noncancer-Based RBSL	2001	Water	NA	5.3E+05 sol	1.7E+05 sol	1.6E+05 sol	NA	NV

Notes
All soil results are reported in milligrams per kilogram (mg/kg)
All water results are reported in micrograms per Liter (ug/L)
Bold indicates detection above laboratory reporting limit
<0.003 and ND = Not detected at or above the indicated laboratory reporting limit
Comp Soils = Excavated Stockpiled Soil Sample
STLC Ba = Soluble Barium Based on the Waste Extraction Test
TPH = Total Petroleum Hydrocarbons
NA = not applicable
NC = noncarcinogen
NV = not volatile
RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)
sat=Saturation threshold (the calculated RBSL exceeds the saturation threshold of the chemical)
sol = Solubility threshold (the calculated RBSL exceeds the solubility threshold of the chemical)
Source: Tank Removal Report, SEMCO, March 1993.

Table 2a
Groundwater Monitoring Well Analytical Results
By Others and Treadwell Rollo
TPH and BTEX
1465 65th Street
Emeryville, Califonia

Sample ID	Sample Date	TPHg	TPPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TEPH as Diesel	TEPH as Motor Oil	TEPH	Metals EPA 6000 Series		
												Arsenic	Lead	Chromium
RMW-1	8/11/93	--	--	<0.5	<0.5	<0.5	<0.5	<50	--	--	--	--	--	--
	9/14/93	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/2/93	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/24/93	57	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--
	3/24/95	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	210	<5	<5	<10
	12/19/01	--	--	<0.5	<0.5	<0.5	<0.5	--	61b	<250	--	--	--	--
RMW-1GWDUP	12/19/01	--	--	<0.5	8.0	<0.5	<0.5	--	80g	280	--	--	--	--
RMW-2	8/11/93	--	--	1.3	<0.5	<0.5	0.59	<50	--	--	--	--	--	--
	9/14/93	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/2/93	--	--	--	--	--	--	--	--	--	--	--	--	--
	11/24/93	50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--	--
	3/24/95	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	150	7.6	<5	<10
	12/18/01	--	--	<0.5	<0.5	<0.5	<0.5	--	<50	<250	--	--	--	--
RMW-3	8/11/93	NS: Floating free-phase hydrocarbons 0.01 feet												
	9/14/93	NS: Floating free-phase hydrocarbons 0.02 feet												
	11/2/93	NS: Floating free-phase hydrocarbons 0.04 feet												
	11/24/93	NS: Floating free-phase hydrocarbons 0.02 feet												
	3/27/95	--	11,000	<10	<10	<10	<10	--	--	--	97,000	<5	<5	<10
	12/18/01	--	--	<0.5	<0.5	<0.5	1.4	--	--	--	--	--	--	--

Table 2a
Groundwater Monitoring Well Analytical Results
By Others and Treadwell Rollo
TPH and BTEX
1465 65th Street
Emeryville, Califonia

Sample ID	Sample Date	TPHg	TPPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPHd	TEPH as Diesel	TEPH as Motor Oil	TEPH	Metals EPA 6000 Series		
												Arsenic	Lead	Chromium
MW-2	3/23/95	--	71	<0.5	<0.5	<0.5	<0.5	--	--	--	260	<5	<5	<10
	12/17/01	--	--	<0.5	<0.5	<0.5	<0.5	--	<50	<250	--	--	--	--
MW-3	3/23/95	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	150	13	<5	<10
	12/17/01	--	--	<0.5	<0.5	<0.5	<0.5	--	<50	<250	--	--	--	--
MW-4	3/23/95	--	<50	<0.5	<0.5	<0.5	<0.5	--	--	--	190	<5	<5	<10
	12/19/01	--	--	<2.5	<2.5	<2.5	<2.5	--	<50	<250	--	--	--	--
FB-GW	12/19/01	--	--	<0.5	<0.5	<0.5	<0.5	--	<50	<250	--	--	--	--
Indoor Air Cancer-Based RBSL	2001	NA	NA	5.8E+03	NC	NC	NC	NA	NA	NA	NA	NV	NV	NV
Indoor Air Noncancer-Based RBSL	2001	NA	NA	NA	5.3E+05 sol	1.7E+05 sol	1.6E+05 sol	NA	NA	NA	NA	NV	NV	NV

Notes
All results are reported in micrograms per liter (ug/L)
< 0.5 or ND = not detected at or above the indicated laboratory reporting limit
Bold indicates detection above laboratory reporting limit
-- = Not Analyzed
NS - Not Sampled
FB-GW - Field Blank of Distilled Water
RMW-1GWDUP = Duplicate Groundwater sample from well RMW-1
TPHg Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015
TPPH = Total Purgeable Petroleum Hydrocarbons
TEPHd = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015
TEPH Total Extractable Petroleum Hydrocarbons
NA - not applicable
NC - noncarcinogen
NV - not volatile
RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)
sol - Solubility threshold (the calculated RBSL exceeds the solubility threshold of the chemical)
T&R data collected on 18 an 19 December 2001
Source Final Site Investigation Report for the 64th and 65th Street Properties, Emeryville, California, EKI, 5 September 1995.

Table 2b
Groundwater Monitoring Well Analytical Results
By Others and Treadwell Rollo
VOC and PAH
1465 65th Street
Emeryville, California

Sample ID	Sample Date	1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	Vinyl chloride	PAHs: Bis(2-ethylhexyl) Phthalate	PAHs: All Other PAHs
RMW-1	3/24/95	<1.2	1.4	<1.2	16	10	53	<2.5	ND	ND
RMW-1GWDUP	12/19/01	<0.5	1.3	1.5	12	8.5	31	<0.5	--	--
	12/19/01	<0.5	2.0	1.3	18	13	48	<0.5	--	--
RMW-2	3/24/95	<0.5	0.96	<0.5	12	8.4	26	<1	ND	ND
	12/18/01	<0.5	1.5	<0.5	9.8	4.4	27	<0.5	--	--
RMW-3	3/27/95	11	<0.5	1.4	25	22	36	3.7	ND	ND
	12/18/01	1.5	<0.5	<0.5	20	28	12	2.4	340	ND
MW-2	3/23/95	<1.2	<1.2	<1.2	60	46	2.5	<2.5	ND	ND
	12/17/01	<0.5	<0.5	<0.5	12	0.99	<0.5	<0.5	--	--
MW-3	3/23/95	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND	ND
	12/17/01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
MW-4	3/23/95	<1.2	<1.2	<1.2	28	16	54	<2.5	ND	ND
	12/19/01	<2.5	<2.5	<2.5	29	12	57	<2.5	--	--
FB-GW	12/19/01	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--
Indoor Air Cancer-Based RBSL	2001	2.24E+04	4.70E+04	NC*	NC	NC	1.28E+04	1.17E+02	NV	NV
Indoor Air Noncancer-Based RBSL	2001	1.54E+06	NA	NA	1.29E+05	1.50E+05	NA	NA	NV	NV

Notes
All results are reported in micrograms per liter (ug/L)
<0.5 and ND = Not detected at or above the indicated laboratory reporting limit
Bold indicates detection above laboratory reporting limit
RMW-1GWDUP = Duplicate Groundwater Sample from RMW-1
VOCs - Volatile Organic Compounds
DCA = Dichloroethane
DCE = Dichloroethene
TCE = Trichloroethene
PAH = Polycyclic Aromatic Hydrocarbons
PAHs determined by EPA method 8270 by Treadwell & Rollo for 2001 sampling event
NA = not applicable
NC = noncarcinogen
NV = not volatile
RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)
* 1,1-DCE is classified by the U.S.E.P.A. as a Class C carcinogen. According to S. DiZio of the California Department of Toxic Substances (DTSC), the State of California, Department of Health Services Office of Drinking Water regulates 1,1-DCE as a non-carcinogen for setting the Maximum Contaminant Level (MCL) Therefore, 1,1,-DCE was evaluated as a non-carcinogen.
Treadwell & Rollo data was collected on 18 and 19 December 2001
Source Final Site Investigation Report for the 64th and 65th Street Properties, Emeryville, California, EKI, 5 September 1995

Table 3
Soil Sample Analytical Results
By Others and Treadwell Rollo
VOC, TPH, PAH, and PCB
1465 65th Street, Emeryville, California

Sample ID	Sample Date	Sample Depth (Ft bgs)	Detected VOCs					Total Petroleum Hydrocarbons			PAHs	PCBs	
			1,1-DCA	PCE	1,1,1-TCA	Carbon Disulfide	Total Xylenes	TRPH	TEPH-diesel	TEPH-motor oil		PCB-1260	PCBs
RS1-A	12/6/88	5	ND	ND	ND	0.05	ND	--	--	--	--	--	--
RS1-B	12/6/88	10	ND	ND	ND	0.064	ND	--	--	--	--	--	--
RS2-A	12/6/88	5	ND	ND	ND	0.0064	ND	--	--	--	--	--	--
RS3-A	12/6/88	5	ND	ND	ND	ND	ND	--	--	--	--	--	--
RS4-A	1/4/89	5	**0.0034**	**0.0067**	ND	ND	ND	--	--	--	--	--	--
P-5-2-5	7/5/95	2.5	ND	ND	ND	ND	ND	--	--	--	--	--	--
MW-2	3/8/95	6	<0.005	<0.005	<0.005	ND	ND	**16**	--	--	ND	<0.020	--
MW-3	3/7/95	4	<0.005	<0.005	<0.005	ND	ND	<15	--	--	ND	**0.032**	--
MW-4	3/6/95	8	<0.005	<0.005	<0.005	ND	ND	<15	--	--	ND	<0.020	--
S-9	3/6/95	4.5	**0.024**	**0.81**	**0.97**	ND	ND	<15	--	--	ND	<0.020	--
S-10	3/6/95	4.5	<0.005	<0.005	<0.005	ND	ND	<15	--	--	ND	<0.020	--
S-11	3/8/95	5.5	<0.005	<0.005	<0.005	ND	ND	**16**	--	--	ND	<0.020	--
S-12	3/8/95	2.5	<0.005	<0.005	<0.005	ND	ND	<15	--	--	ND	<0.020	--
S-13	3/8/95	3.5	<0.005	<0.005	<0.005	ND	ND	**18**	--	--	ND	<0.020	--
CPT 10a-2.5-5	12/13/01	2.5 & 5	--	--	--	--	--	--	**55g**	**300**	--	--	--
DP-1-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	**2.2g,b**	**8.4**	--	--	--
DP-1-8	12/14/01	8	--	--	--	--	--	--	**1.7g,b**	**5.9**	--	--	--
DP-2-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	<1.0	<5.0	--	--	--
DP-2-1.5	12/14/01	1.5	<0.5	<0.5	<0.5	--	**8.1**	--	--	--	--	--	--
DP-3-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	<1.0	<5.0	--	--	<0.050
DP-3-8	12/14/01	8	--	--	--	--	--	--	**1.4b**	<5.0	--	--	--
DP-4-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	**1.2b**	<5.0	--	--	--
DP-4-1.5	12/14/01	1.5	<0.5	<0.5	<0.5	--	**9.6**	--	--	--	--	--	--
DP-5-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	**5.4g**	**37**	--	--	<0.05
DP-6-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	**3.0g**	**11**	--	--	<0.125j,o
DP-6-1.5	12/14/01	1.5	<0.5	<0.5	<0.5	--	<0.5	--	--	--	--	--	--
DP-7-1.5-5	12/13/01	1.5 & 5	<0.5	<0.5	<0.5	--	<0.5	--	**1.2b**	<5.0	--	--	--
DP-7-1.5	12/13/01	1.5	<0.5	<0.5	<0.5	--	<0.5	--	--	--	--	--	--
DP-8-2-5	12/13/01	2 & 5	--	--	--	--	--	--	**1.5b**	<5.0	--	--	--
DP-8-2	12/13/01	2	<0.5	<0.5	<0.5	--	<0.5	--	--	--	--	--	--
DP-8-8	12/13/01	8	--	--	--	--	--	--	<1.0	<5.0	--	--	--
DP-9-1.5-5	12/13/01	1.5 & 5	--	--	--	--	--	--	**2.6b,g**	**5.9**	--	--	<0.125j,o
DP-9-1.5	12/13/01	1.5	<0.5	<0.5	<0.5	--	<0.5	--	--	--	--	--	--
DP-9-8	12/13/01	8	--	--	--	--	--	--	**1.7b**	<5.0	--	--	--
DP-10-1.5-5	12/13/01	1.5 & 5	--	--	--	--	--	--	**1.2b**	<5.0	--	--	--
DP-11-1.5-5	12/13/01	1.5 & 5	--	--	--	--	--	--	**18g**	**110**	--	--	--
DP-12-1.5-5	12/13/01	1.5 & 5	--	--	--	--	--	--	**4.3g**	**36**	--	--	--
DP-12-8	12/13/01	8	--	--	--	--	--	--	**1.2b**	<5.0	--	--	--
DP-13-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	**2.7b,g**	**6.3**	--	--	--
DP-14-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	<1.0	<5.0	--	--	--
DP-15-1.5-5	12/14/01	1.5 & 5	--	--	--	--	--	--	**2.3g,b**	**11**	--	--	<0.050
DP-15-1.5	12/14/01	1.5	<0.5	<0.5	<0.5	--	<0.5	--	--	--	--	--	--
Indoor Air Cancer-Based RBSL	2001	NA	3.20E+00	1.1E+00	NC	NC	NC	NA	NA	NA	NA	NV	NV
Indoor Air Noncancer-Based RBSL	2001	NA	2.17E+02	NA	3.3E+02	NA	210 sat	NA	NA	NA	NA	NV	NV

Notes
All results are reported in milligrams per kilogram (mg/kg)
<0.5 and ND = not detected at or above the indicated laboratory reporting limit
Bold indicates detection above laboratory reporting limit
Ft bgs = feet below ground surface
-- = not analyzed
1,1-DCA = 1,1-Dichloroethane
1,1,1-TCA = 1,1,1-Trichloroethane
PCE = Tetrachloroethene
PAHs = Polycyclic Aromatic Hydrocarbons
VOCs = Volatile Organic Compounds
TEPH = Total Extractable Petroleum Hydrocarbons by EPA method 8015 modified
TRPH = Total Recoverable Petroleum Hydrocarbons by EPA method 418.1
NA = not applicable
NC = noncarcinogen
NV = not volatile
RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)
sat = Saturation threshold (The calculated RBSL exceeds the saturation threshold of the chemical)

Table 4
Soil Sample Analytical Results
By Others and Treadwell Rollo
Metals and Asbestos
1465 65th Street
Emeryville, California

Sample ID	Sample Date	Sample Depth (ft bgs)	Total Lead	CAM 17 Metals																Asbestos
				Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
		EPA Method	6010	204.2	7060	6010	6010	6010	6010	6010	6010	239.2	7470	6010	6010	7740	6010	7841	6010	6010	PLM
RS1-A	12/6/88	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RS1-B	12/6/88	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RS2-A	12/6/88	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RS3-A	12/6/88	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
RS4-A	1/4/89	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
P-5-2-5	7/5/95	2.5	--	--	<5	--	**0.51**	--	**37**	--	**16**	**17**	--	--	**25**	--	--	--	--	**25**	--
MW-2	3/8/95	6	--	--	<5	--	--	--	**26**	--	--	<5	--	--	--	--	--	--	--	--	--
MW-3	3/7/95	4	--	--	<5	--	--	--	**33**	--	--	**6.7**	--	--	--	--	--	--	--	--	--
MW-4	3/6/95	8	--	--	<5	--	--	--	**36**	--	--	**8.1**	--	--	--	--	--	--	--	--	--
S-9	3/6/95	4.5	--	--	<5	--	--	--	**18**	--	--	**5.6**	--	--	--	--	--	--	--	--	--
S-10	3/6/95	4.5	--	--	<5	--	--	--	**35**	--	--	**5.9**	--	--	--	--	--	--	--	--	--
S-11	3/8/95	5.5	--	--	<5	--	--	--	**45**	--	--	<5	--	--	--	--	--	--	--	--	--
S-12	3/8/95	2.5	--	--	<5	--	--	--	**34**	--	--	<5	--	--	--	--	--	--	--	--	--
S-13	3/8/95	3.5	--	--	<5	--	--	--	**39**	--	--	**5.1**	--	--	--	--	--	--	--	--	--
DP-1-1.5-5	12/14/01	1.5 & 5	--	<2.5	<2.5	**220**	**0.5**	<0.5	**31**	**13**	**16**	**7.8**	<0.06	<2.5	**50**	<2.5	<1.0	<2.5	**31**	**33**	ND
DP-2-1.5-5	12/14/01	1.5 & 5	**5.9**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-3-1.5-5	12/14/01	1.5 & 5	**6.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
DP-4-1.5-5	12/14/01	1.5 & 5	--	<2.5	<2.5	**96**	**0.59**	**0.51**	**22**	**5.3**	**14**	**6.9**	<0.06	<2.5	**23**	<2.5	<1.0	<2.5	22	320	--
DP-4-8	12/14/01	8	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-6-1.5-5	12/14/01	1.5 & 5	**13**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-7-1.5-5	12/13/01	1.5 & 5	--	<2.5	**6.5**	**250**	**0.66**	<0.5	**22**	**36**	**16**	**21**	**0.074**	<2.5	**96**	<2.5	<1.0	<2.5	34	53	--
DP-8-2-5	12/13/01	2 & 5	**29**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
DP-9-1.5-5	12/13/01	1.5 & 5	--	<2.5	**4.5**	**200**	**0.74**	<0.5	**25**	**26**	**19**	**10**	<0.06	<2.5	**35**	<2.5	<1.0	<2.5	46	30	--
DP-9-8	12/13/01	8	**4.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-10-1.5-5	12/13/01	1.5 & 5	**4.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND
CPT 10a-2.5-5	12/13/01	2.5 & 5	**17**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-11-1.5-5	12/13/01	1.5 & 5	--	<2.5	**6.8**	**190**	**0.72**	<0.5	**26**	**10**	**18**	**17**	**0.065**	<2.5	**67**	<2.5	<1.0	<2.5	**48**	**86**	--
DP-11-8.5	12/13/01	8.5	**5.5**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-12-1.5-5	12/13/01	1.5 & 5	--	<2.5	**3.8**	**120**	<0.5	**3.1**	**20**	**5.8**	**20**	**32**	**0.14**	<2.5	**42**	<2.5	<1.0	<2.5	**22**	**890**	--
DP-12-8	12/13/01	8	**7.4**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-13-1.5-5	12/14/01	1.5 & 5	**6.7**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-14-1.5-5	12/14/01	1.5 & 5	**3.1**	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
DP-15-1.5-5	12/14/01	1.5 & 5	11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Indoor Air Cancer-Based RBSL	2001	NA	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NA
Indoor Air Noncancer-Based RBSL	2001	NA	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NA

Notes

All results are reported in milligrams per kilogram (mg/kg)

<2.5 or ND = Not detected at or above the indicated laboratory reporting limit

Bold *indicates detection above laboratory reporting limit*

ft bgs = feet below ground surface

-- = not analyzed

PLM = Polarized Light Microscopy

NA = not applicable

NV = not volatile

RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)

All methods for Treadwell & Rollo analysis historical methods listed in applicable reports

Table 5
Grab Groundwater Analytical Results
By Others and Treadwell Rollo
VOC
1465 65th Street, Emeryville, California

Sample ID	Sample Date	Detected VOCs								
		1,1-DCA	1,2-DCA	1,1-DCE	cis-1,2-DCE	trans-1,2-DCE	TCE	PCE	1,1,1-TCA	Carbon Disulfide
RS-1	12/6/88	ND	ND	ND	ND	ND	ND	ND	ND	13
RS-2	12/6/88	2.4	ND	ND	ND	ND	ND	ND	ND	17
RS-3	12/6/88	37	ND	ND	ND	63	14	14	ND	ND
RS-4	1/4/89	240	3.9	40	ND	5.8	<0.5	<0.5	0.7	<0.5
P-1	7/5/95	<2	ND	<2	17	15	16	ND	<2	ND
P-5	7/5/95	44	ND	<4	<4	12	<4	ND	<4	ND
DP-1-GW	12/17/01	0.67	<0.5	1.1	11	1.7	5.8	<1.0	<0.5	--
DP-8-GW	12/14/01	5.8	<5.0	92	<5.0	<5.0	<5.0	44	8.6	--
DP-9-GW	12/17/01	<0.5	<0.5	75	<0.5	<0.5	<0.5	120	17	--
DP-11-GW	12/17/01	1.8	<0.5	<0.5	3.9	3.5	4.2	<0.5	<0.5	--
DP-12-GW	12/14/01	<0.5	0.54	<0.5	5.7	2.5	17	<0.5	<0.5	--
DP-13-GW	12/17/01	<0.5	1.1	<0.5	1.1	8.3	18	<0.5	<0.5	--
TRIP (trip blank)	12/14/101	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
Indoor Air Cancer-Based RBSL	2001	2.24E+04	4.70E+04	NC*	NC	NC	1.28E+04	3.21E+03	NC	NC
Indoor Air Noncancer-Based RBSL	2001	1.54E+06	NA	NA	1.29E+05	1.50E+05	NA	NA	1.3E+06 sol	NA

Notes
All results are reported in micrograms per liter (ug/L)
<10 or ND = Not detected at or above the indicated laboratory reporting limit
Bold indicates detection above laboratory reporting limit
DCA= Dichloroethane
DCE = Dichloroethene
PCE = Tetrachloroethene
TCA = Trichloroethane
TCE = Trichloroethene
VOC = Volatile Organic Compound
NA = not applicable
NC = noncarcinogen
NV = not volatile
RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)
* 1,1-DCE is classified by the U.S.E.P.A. as a Class C carcinogen. According to S. DiZio of the California Department of Toxic Substances(DTSC), the State of California, Department of Health Services Office of Drinking Water regulates 1,1-DCE as a non-carcinogen for setting the Maximum Contaminant Level(MCL). Therefore, 1,1,-DCE was evaluated as a non-carcinogen.
Treadwell & Rollo Samples collected on 12/14/01 and 12/17/01
Source Data obtained from Erler & Kalinowski report dated 5 September 1995
sol = Solubility threshold (the calculated RBSL exceeds the saturation threshold of the chemical)

Table 6
Grab Groundwater Analytical Results
By Others and Treadwell Rollo
Metals, BTEX and TPH
1465 65th Street
Emeryville, California

Sample ID	Sample Date	Arsenic or 13 Priority Metals EPA 6000/7000 Series			TEPH as Diesel	TEPH as Motor Oil	Benzene	Toluene	Ethylbenzene	Total Xylenes
		Arsenic	Nickel	Zinc						
P-1	7/5/95	<5	--	--	--	--	<2	<2	<2	<2
P-5	7/5/95	<5	<5	26	4,100	--	<4	<4	<4	<4
DP-1-GW	12/17/01	--	--	--	120b	<250	<0.5	1.6	<0.5	0.61
DP-8-GW	12/14/01	--	--	--	580	3,700	<5.0	<5.0	<5.0	<5.0
DP-9-GW	12/17/01	--	--	--	310b	370	6.5	5.4	<5.0	<5.0
DP-12-GW	12/14/01	--	--	--	210	1,400	<0.5	3.3	1.0	5.2
DP-11-GW	12/17/01	--	--	--	1,500b,g	710	<0.5	3.1	1.5	6.6
DP-13-GW	12/17/01	--	--	--	460b,g	520	<0.5	3.4	2.7	17
Indoor Air Cancer-Based RBSL	2001	NV	NV	NV	NA	NA	5.80E+03	NC	NC	NC
Indoor Air Noncancer-Based RBSL	2001	NV	NV	NV	NA	NA	NA	5.3E+05 sol	1.7E+05 sol	1.6E+05 sol

Notes

All results are reported in micrograms per liter (ug/L)

Bold indicates detection above laboratory reporting limit

-- = Not Analyzed

TEPH = Total Extractable Petroleum Hydrocarbons

b = diesel range compounds are significant; no recognizable pattern

g = oil range compounds are significant

NS = Not Sampled

NA = not applicable

NC = noncarcinogen

NV = not volatile

RBSL = Residential Scenario Risk-Based Screening Level for Fine-Grained Soil (RWQCB 2001)

sol = Solubility threshold (the calculated RBSL exceeds the solubility threshold of the chemical)

Priority metals include arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, tin, thalium, and zinc. Only arsenic and those metals detected in groundwater samples are included in the table.

Source: Data for samples P-1 and P-5 obtained from Erler & Kalinowski report dated 5 September 1995

Table 7
Groundwater Elevation
Groundwater Monitoring Wells
1465 65th Street
Emeryville, California

Well ID	Date Measured	Top of Casing Elevation (Ft MSL)	Depth to Water (Ft BTOC)	Groundwater Elevation (Ft MSL)
MW-2	3/24/95	19.45	3.03	16.42
	7/7/95	19.45	4.20	15.25
	12/17/01	19.45	3.49	15.96
MW-3	3/24/95	15.24	2.72	12.52
	7/7/95	15.24	6.22	9.02
	12/17/01	15.24	3.26	11.98
MW-4	3/6/95	14.02		
	3/24/95	14.02	4.57	9.45
	7/7/95	14.02	5.77	8.25
	12/17/01	14.02	5.02	9.00
RMW-1	8/11/93	14.38	4.87	9.51
	9/14/93	14.38	4.94	9.44
	11/2/93	14.38	5.13	9.25
	11/24/93	14.38	5.07	9.31
	3/24/95	14.38	3.61	10.77
	7/7/95	14.38	4.18	10.20
	12/17/01	14.38	4.0	10.38
RMW-2	8/11/93	14.55	4.64	9.91
	9/14/93	14.55	4.64	9.91
	11/2/93	14.55	4.85	9.70
	11/24/93	14.55	4.84	9.71
	3/24/95	14.55	3.35	11.20
	7/7/95	14.55	3.70	10.85
	12/17/01	14.55	3.78	10.77
RMW-3	8/11/93	14.15		
	9/14/93	14.15	4.25*	9.90
	11/2/93	14.15	4.53*	9.62
	11/24/93	14.15	4.35*	9.80
	3/24/95	14.15	2.95	11.20
	7/7/95	14.15	3.70	10.45
	12/17/01	14.15	3.34**	10.81

Notes
Ft BTOC = feet below top of casing
Ft MSL = feet above mean sea level as referenced in the 1995 EKI report
NM = Not measured
Depth to water data for all dates except 12/17/01 by EKI and summarized in their 1995 report
* = Corrected depth to water measurement made by HETI due to separate product phase on the water table
** = Heavy Petroleum Hydrocarbon sheen observed on the groundwater purged from the well

Table 8
Soil Risk Estimates for a Residential Scenario
1465 65th Street, Emeryville, California

Chemicals	Maximum Soil Concentration (mg/kg)	Indoor Air Cancer-Based RBSL (mg/kg)	Indoor Air Noncancer-Based RBSL (mg/kg)	Soil Cancer Risk	% Contribution to Soil Total Risk	Soil Noncancer Hazard	% Contribution to Soil Total Hazard
Carbon Disulfide	0.064	NC	--	NC	NC	--	--
1,1-Dichloroethane	0.024	3.2E+00	2.17E+02	7.59E-09	1%	2.21E-05	4%
Tetrachloroethene	0.81	1.1E+00	--	7.17E-07	99%	--	--
1,1,1-Trichloroethane	0.97	NC	3.3E+02	NC	NC	5.88E-04	96%
Xylenes	9.6	NC	210 sat	NC	NC	< sat	< sat
Arsenic	6.8	NV	NV	NV	NV	NV	NV
Barium	250	NV	NV	NV	NV	NV	NV
Beryllium	0.74	NV	NV	NV	NV	NV	NV
Cadmium	3.1	NV	NV	NV	NV	NV	NV
Chromium	45	NV	NV	NV	NV	NV	NV
Cobalt	36	NV	NV	NV	NV	NV	NV
Copper	20	NV	NV	NV	NV	NV	NV
Lead	32	NV	NV	NV	NV	NV	NV
Mercury	0.14	NV	NV	NV	NV	NV	NV
Nickel	96	NV	NV	NV	NV	NV	NV
Vanadium	48	NV	NV	NV	NV	NV	NV
Zinc	890	NV	NV	NV	NV	NV	NV
PCB-1260	0.032	NV	NV	NV	NV	NV	NV
			Total	**7.24E-07**		**6.10E-04**	

Notes
mg = milligram
kg = kilogram
NC = Noncarcinogen
NV = Not volatile - Because chemical is not considered a volatile organic compound
RBSL = Risk-Based Screening Level (RWQCB 2001)
sat = Saturation threshold (the calculated RBSL exceeds the saturation threshold of the chemical)
< Maximum concentration less than the saturation limit
-- = Not available

RBSL were calculated using a target risk of 1x10-6 for chemicals with carcinogenic health effects and a target hazard index of 0.2 for chemicals with noncarcinogenic health effects for a residential exposure scenario of 30 years exposure from soil to indo

Reference

California Regional Water Quality Control Board. 2001. Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater. Volume 1: Summary Tier 1 Lookup Tables. Volume 2: Background Documentation For the Deve

Table 9
Groundwater Risk Estimates for a Residential Scenario
1465 65th Street, Emeryville, California

Chemicals	Maximum Groundwater Concentration (ug/L)	Indoor Air Cancer-Based RBSL (ug/L)	Indoor Air Noncancer-Based RBSL (ug/L)	Groundwater Cancer Risk	% Contribution to Groundwater Total Risk	Groundwater Noncancer Hazard	% Contribution to Groundwater Total Hazard
Benzene	6.5	5.8E+03	--	1.12E-09	1%	--	--
Toluene	8.0	NC	5.3E+05 sol	NC	NC	< sol	--
Ethylbenzene	2.7	NC	1.7E+05 sol	NC	NC	< sol	--
Xylenes	17	NC	1.6E+05 sol	NC	NC	< sol	--
Carbon Disulfide	17	NC	--	NC	NC	--	--
1,1-Dichloroethane	240	2.24E+04	1.54E+06	1.07E-08	13%	3.12E-05	15%
1,2-Dichloroethane	3.9	4.7E+04	--	8.30E-11	0%	--	--
1,1-Dichloroethene	92	NC*	--	NC	NC	--	--
cis-1,2-Dichloroethene	60	NC	1.29E+05	NC	NC	9.30E-05	45%
trans-1,2-Dichloroethene	63	NC	1.50E+05	NC	NC	8.40E-05	40%
Tetrachloroethene	120	3.21E+03	--	3.74E-08	44%	--	--
1,1,1-Trichloroethane	17	NC	1.3E+06 sol	NC	NC	< sol	--
Trichloroethene	57	1.28E+04	--	4.45E-09	5%	--	--
Vinyl chloride	3.7	1.17E+02	--	3.16E-08	37%	--	--
Arsenic	13	NV	NV	NV	NV	NV	NV
Zinc	26	NV	NV	NV	NV	NV	NV
Bis(2-ethylhexyl)phthalate	340	NV	NV	NV	NV	NV	NV
			Total	**8.54E-08**		**2.08E-04**	

Notes
ug = microgram
L = Liter
NC = Noncarcinogen
NV = Not volatile - Because chemical is not considered a volatile organic compound
RBSL = Risk-Based Screening Level (RWQCB 2001)
sol = Solubility threshold (the calculated RBSL exceeds the solubility threshold of the chemical)
< = Maximum concentration less than the solubility limit
-- = Not available

RBSL were calculated using a target risk of 1x10-6 for chemicals with carcinogenic health effects and a target hazard index of 0.2 for chemicals with noncarcinogenic health effects for a residential exposure scenario of 30 years exposure from groundwater

* 1,1-Dichloroethene (1,1-DCE) is classified by the U.S. Environmental Protection Agency as a Class C carcinogen. According to S. DiZio of the California Department of Toxic Substances (DTSC), the State of California, Department of Health Services Office

Reference

California Regional Water Quality Control Board. 2001. Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater. Volume 1 Summary Tier 1 Lookup Tables. Volume 2: Background Documentation For the Deve

Table 10
Summary of Risk Estimates for a Residential Scenario
1465 65th Street, Emeryville, California

	Total Cancer Risk	Total Noncancer Hazard
Soil	7.24E-07	6.10E-04
Groundwater	8.54E-08	2.08E-04
Total Soil and Groundwater	**8.10E-07**	**8.18E-04**

Table 11
Soil Risk Estimates for a Construction Worker Scenario
1465 65th Street, Emeryville, California

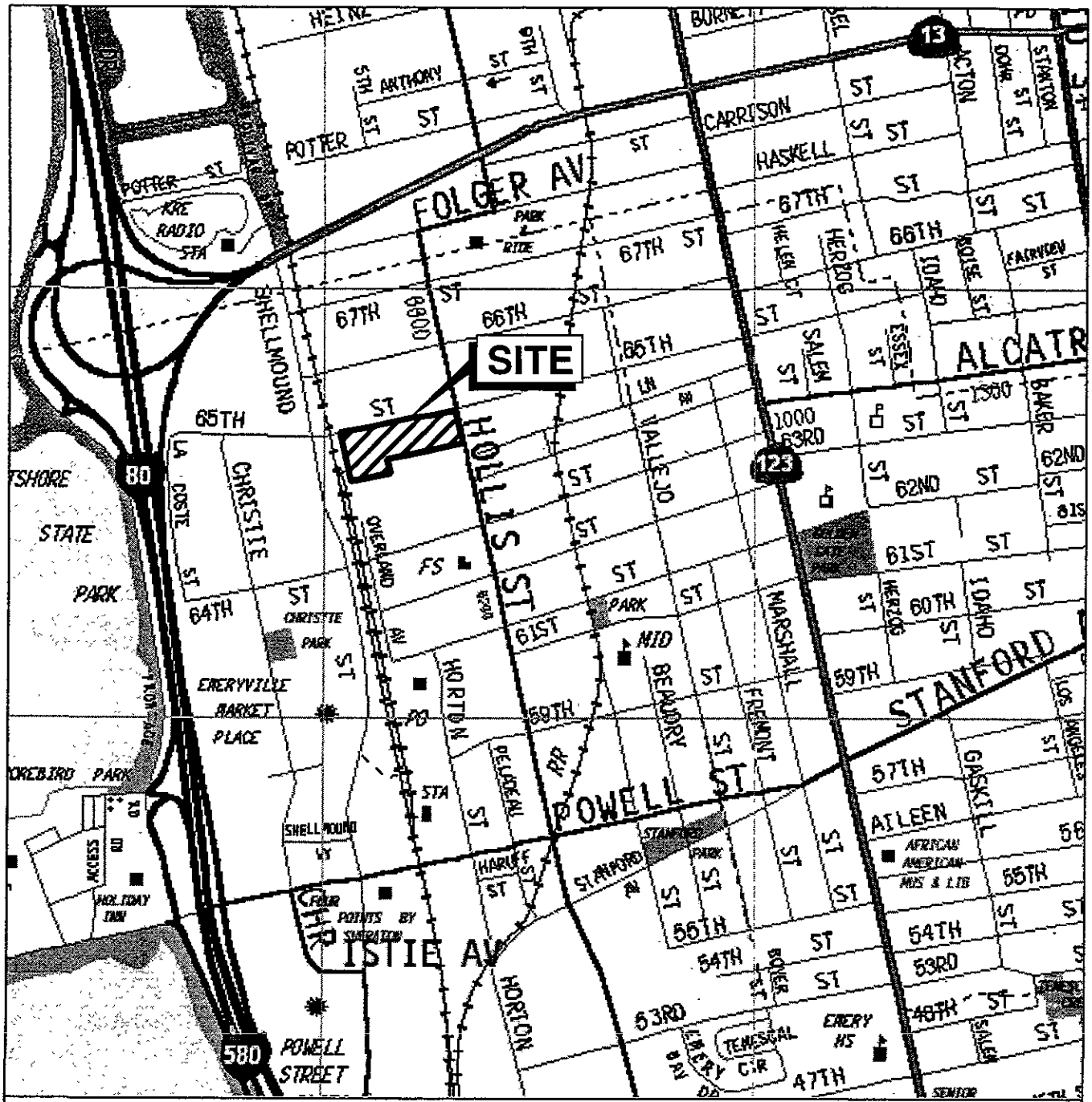
Chemicals	Maximum Soil Concentration (mg/kg)	Direct Exposure Cancer-Based RBSL (mg/kg)	Direct Exposure Noncancer-Based RBSL (mg/kg)	Soil Cancer Risk	% Contribution to Soil Total Risk	Soil Noncancer Hazard	% Contribution to Soil Total Hazard
Arsenic	6.8	1.3E+01	1.3E+02	5 23E-07	12%	1.05E-02	24%
Barium	250	NC	2.4E+03	NC	NC	2.08E-02	48%
Beryllium	0.74	1.1E+02	9.5E+01	6.73E-09	0%	1.56E-03	4%
Cadmium	3.1	3.3E+01	2.6E+02	9.39E-08	2%	2.38E-03	5%
Chromium*	45	1.3E+01	1.1E+04	3.46E-06	82%	8.18E-04	2%
Cobalt	36	NC	3.2E+04	NC	NC	2.25E-04	1%
Copper	20	NC	2.0E+04	NC	NC	2.00E-04	0%
Lead	32	--	--	--	--	--	--
Mercury	0.14	NC	1.6E+02	NC	NC	1.75E-04	0%
Nickel	96	1.0E+03	1.1E+04	9.60E-08	2%	1.75E-03	4%
Vanadium	48	NC	3.7E+03	NC	NC	2.59E-03	6%
Zinc	890	NC	1.6E+05	NC	NC	1.11E-03	3%
Carbon Disulfide	0.064	--	--	--	--	--	--
1,1-Dichloroethane	0.024	3.0E+02	4.6E+03	8.00E-11	0%	1.04E-06	0%
PCB-1260	0.032	7.0E+00	5.6E+00	4.57E-09	0%	1.14E-03	3%
Tetrachloroethene	0.81	8.2E+01	2.4E+03	9.88E-09	0%	6.75E-05	0%
1,1,1-Trichloroethane	0.97	NC	6.0E+03	NC	NC	3.23E-05	0%
Xylenes	9.6	NC	1.1E+04	NC	NC	1.75E-04	0%
			Total	**4.20E-06**		**4.35E-02**	

Notes
mg = milligram
kg = kilogram
NC = Noncarcinogen
RBSL = Risk-Based Screening Level (RWQCB 2001)
-- = Not available
* Chromium RBSL, assumes 1/6 ratio Cr6/Cr3.
RBSL were calculated using a target risk of 1x10-6 for chemicals with carcinogenic health effects and a target hazard index of 0.2 for chemicals with noncarcinogenic health effects for a construction worker exposure scenario from soil of direct exposure.

Reference

California Regional Water Quality Control Board. 2001. Application of Risk-Based Screening Levels and Decision Making to Sites With Impacted Soil and Groundwater. Volume 1: Summary Tier 1 Lookup Tables. Volume 2: Background Documentation For the Deve

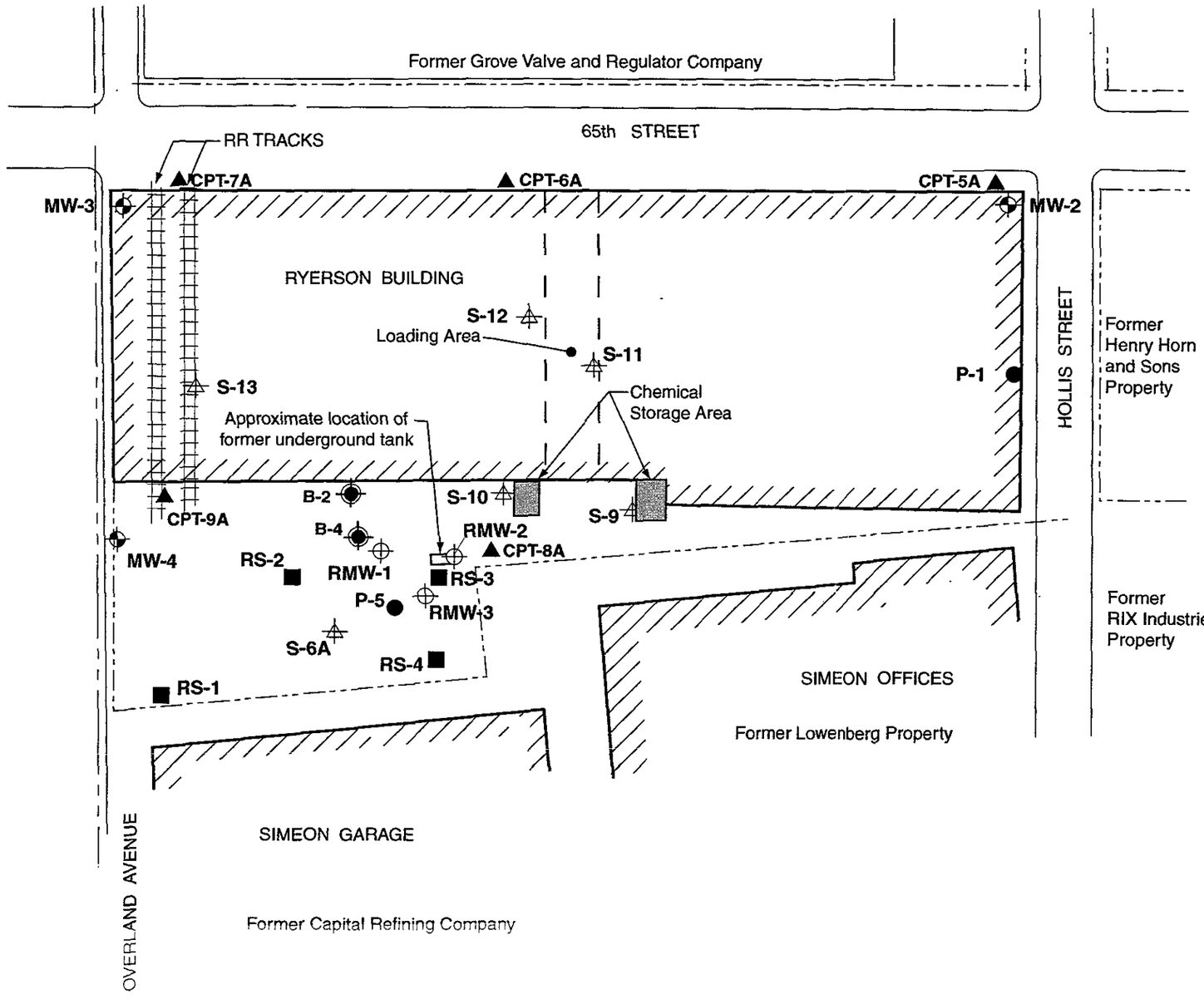
FIGURES



Base map: The Thomas Guide
Alameda County
2002

No scale

1465 65TH STREET Emeryville, California	SITE LOCATION MAP	
Treadwell&Rollo	Date 12/18/01	Project No. 3212.02	Figure 1



EXPLANATION

- **B-2** ⊕ Approximate location of geotechnical boring by Treadwell & Rollo, March 1995
- **CPT-7A** ▲ Approximate locating of geotechnical cone penetration test by Treadwell & Rollo, March 1995
- **MW-2** ⊕ Monitoring well installed by EKI, September 1995
- **S-12** ⊕ Shallow soil boring installed by EKI, September 1995
- **RMW-1** ⊕ Monitoring well installed by Hydro-Environmental, August 1993
- **RS-2** ■ Soil and grab groundwater sampling location collected by others (unknown), December 1988- January 1989
- **P-5** ● Soil/grab groundwater sampling location collected by EKI, July 1995

0 100 Feet

Approximate scale

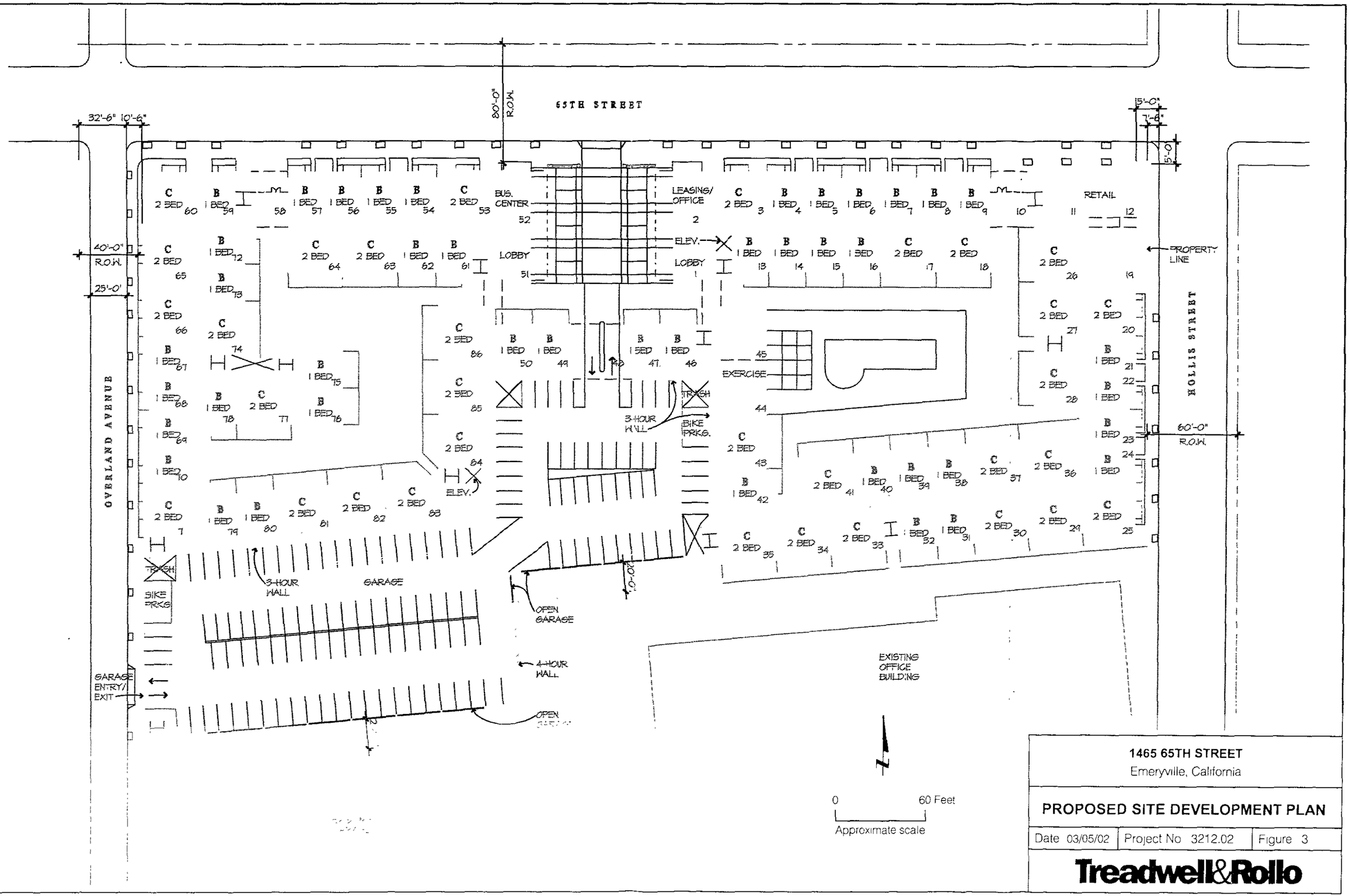
Reference: First level Plan, 65th & Hollis, Emeryville, Ca, Thompson/Opus West, B.A.R Architects, dated 5 September 2001

1465 65th STREET
Emeryville, California

PREVIOUS SAMPLING LOCATION PLAN AND HISTORICAL SURROUNDING OCCUPANTS LOCATIONS

Date 02/22/02 | Project No 3212.02 | Figure 2

Treadwell&Rollo



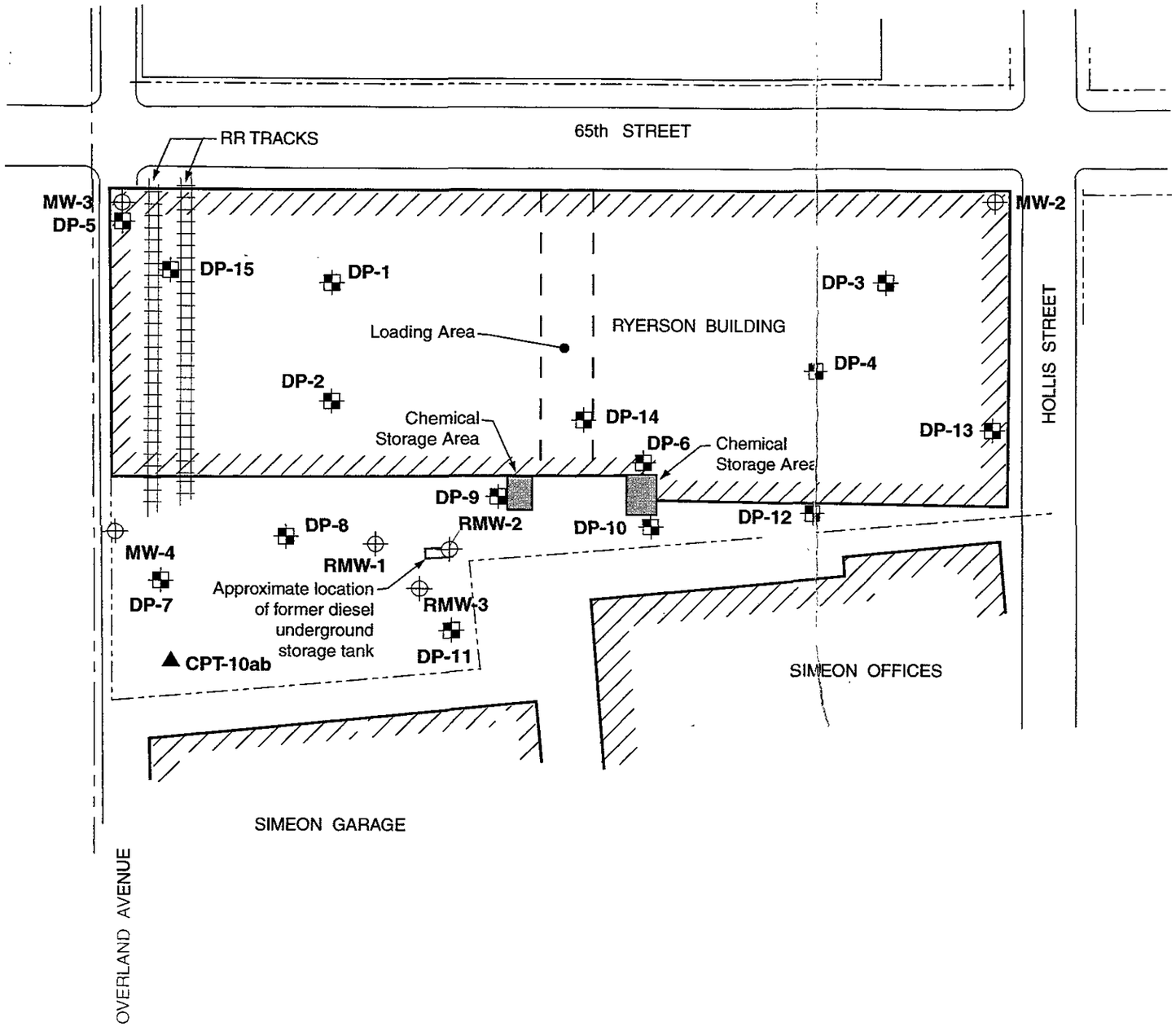
Proposed Site Development Plan.dwg

1465 65TH STREET
Emeryville, California

PROPOSED SITE DEVELOPMENT PLAN

Date 03/05/02	Project No 3212.02	Figure 3

Treadwell&Rollo



EXPLANATION

- Existing Structures
- CPT-10ab ▲ Environmental CPT location, December 13, 2001
- DP-1 ⊕ Environmental Direct Push Boring location, December 13 & 14, 2001
- MW-2 ⊕ Groundwater monitoring well installed by others

0 100 Feet

Approximate scale

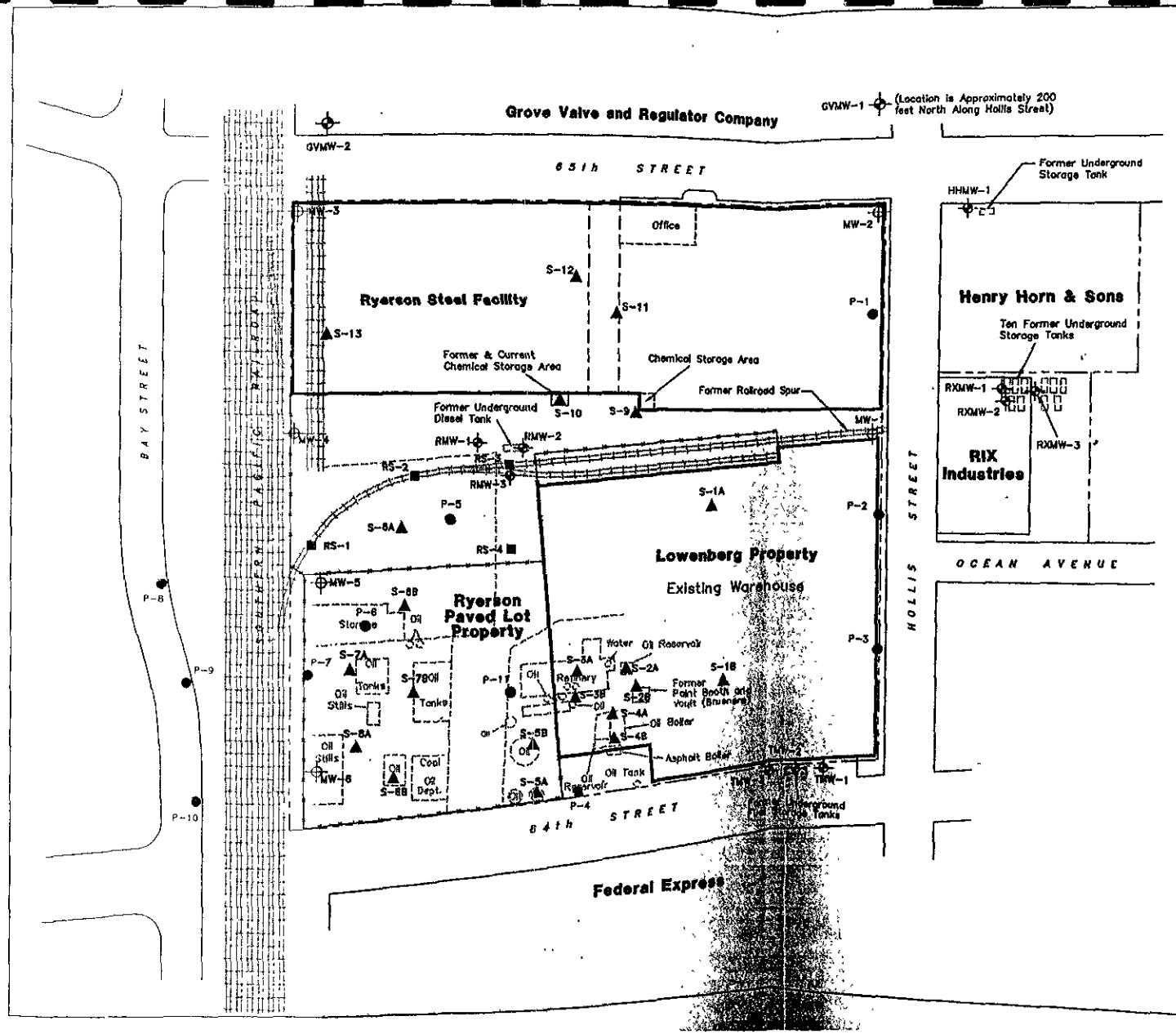
1465 65th STREET
Emeryville, California

TREADWELL & ROLLO
SAMPLING LOCATION PLAN

Date 01/04/02 | Project No. 3212.02 | Figure 4

Treadwell&Rollo

Reference First level Plan, 65th & Hollis, Emeryville, Ca, Thompson/Opus West, B.A R Architects, dated 5 September 2001.



Notes:

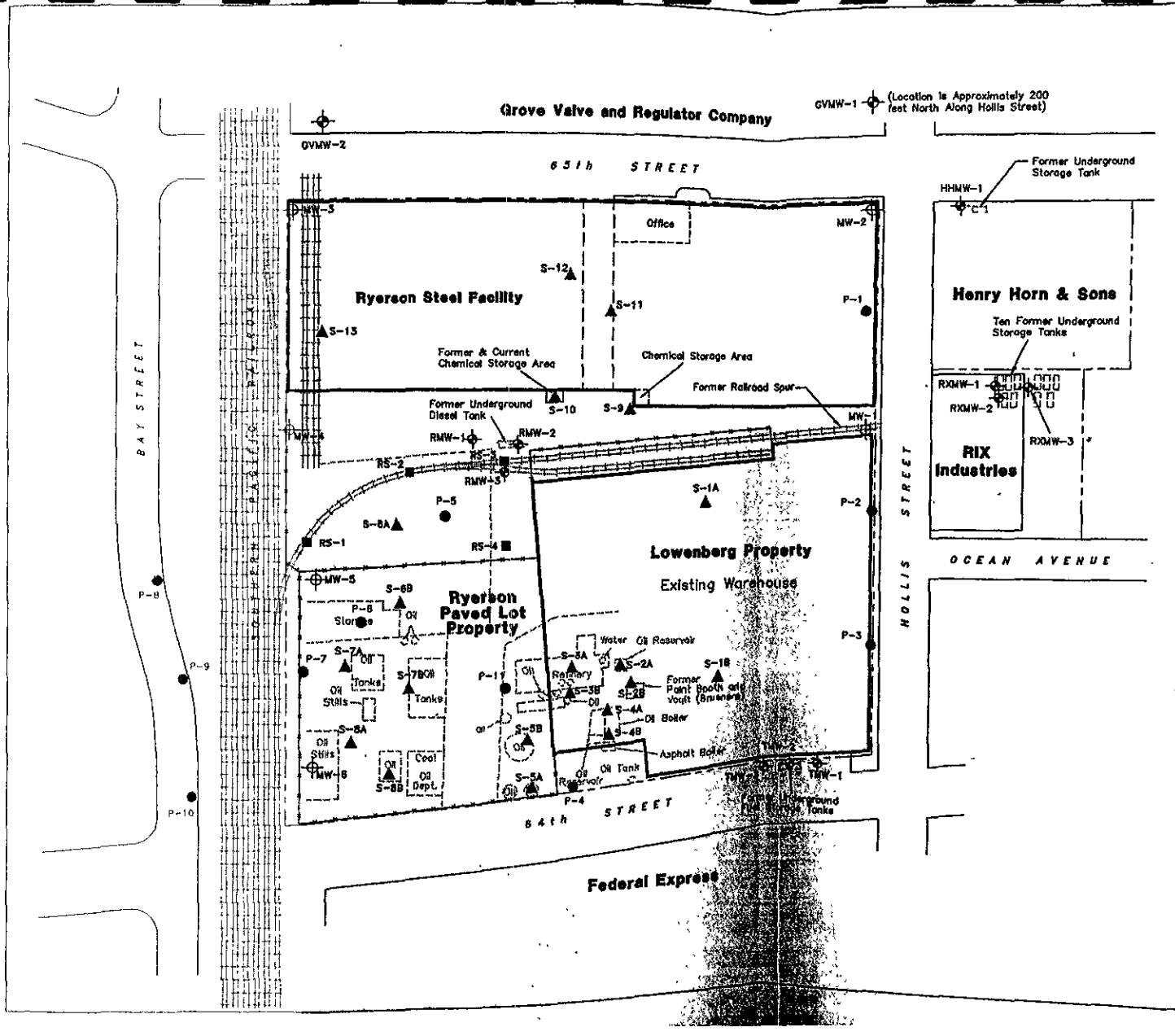
1. All locations are approximate.
2. Basemap taken from Sanborn maps dated 1911 and 1967.

Erler & Kalinowski, Inc.

Site Plan

64th & 65th Street Properties
Emeryville, CA
September 1995
EKI 940018.06
Figure 2

APPENDIX A
Figure of Neighboring Site Sample Locations and Tabulated Data



Notes:

1. All locations are approximate.
2. Basemap taken from Sanborn maps dated 1911 and 1967.

Erler & Kalinowski, Inc.

Site Plan

64th & 65th Street Properties
Emeryville, CA
September 1995
EKI 940018.06
Figure 2

Table 1

Summary of Groundwater Sampling Results for Halogenated VOCs on Adjacent Properties
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sample ID	Date Sampled	VOCs by EPA Method 8010 (a)										
		1,1-DCA (ug/L)	1,2-DCA (ug/L)	1,1-DCE (ug/L)	Total 1,2-DCE (ug/L)	TCE (ug/L)	PCE (ug/L)	1,1,1-TCA (ug/L)	vinyl chloride (ug/L)	chloroform (ug/L)	CCl4 (ug/L)	Freon 11 (ug/L)
Rix Industries												
RXMW-1	7/8/92	36	450(b)	ND(c)	ND	ND	ND	ND	ND	ND	ND	ND
	11/11/94	33	ND	ND	ND	ND	ND	ND	ND	ND	* (d)	NA
	2/13/95	32	1.1	1	99	21	ND	0.7	ND	1.9	*	ND
RXMW-2	7/8/92	22	ND	ND	45	20	52	ND	46	ND	ND	ND
	11/11/94	17	ND	ND	11	41	34	ND	ND	ND	*	NA
	2/13/95	9.6	3.2	2	28	54	49	4.8	ND	2.7	*	3.6
RXMW-3	7/8/92	30	ND	ND	630	300	2,200	81	ND	ND	980	ND
	11/11/94	47	ND	29	327	290	110	12	67	ND	*	NA
	2/13/95	52	8.5	48	6.6	140	54	28	ND	4.3	*	30
Grove Valve and Regulator												
GVMW-1	3/2/92	ND	ND	ND	45	103	ND	ND	ND	ND	ND	ND
	4/3/95	ND	ND	ND	27	79	ND	ND	ND	ND	ND	ND
GVMW-2	3/2/92	3	ND	ND	2	4	ND	0.6	ND	ND	ND	ND
	4/3/95	2	ND	ND	0.9	5	ND	ND	ND	ND	ND	ND
GVMW-3	3/2/92	0.5	ND	2	18	1,300	ND	0.5	5	0.5	ND	ND
	4/3/95	ND	ND	1	29	800	2	ND	9	ND	ND	ND

NOTES:

(a) Only compounds detected in groundwater samples are included in table.
(b) Hageman-Aguiar, Inc 1992 reported 1,2-DCA at a concentration of 450 ug/L, but in 1995, Hageman-Aguiar reported 1,2-DCA as "ND".
(c) "ND" indicates that none of the compounds analyzed by the method listed were present above laboratory detection limits.
(d) An asterisk ("*") indicates that results for CCl4 analysis were not included in the summary tables in Hageman-Aguiar (1995).

Table 1

Summary of Groundwater Sampling Results for Halogenated VOCs on Adjacent Properties
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

ABBREVIATIONS:

VOCs = Volatile Organic Compounds
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
CCl4 = Carbon Tetrachloride
Total 1,2-DCE = cis and trans-1,2-Dichloroethene
TCE = Trichloroethene
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane

SOIL

Table 2
Summary of VOC, Petroleum Hydrocarbon, and BTEX Concentrations Detected in Soil Samples Collected in Prior On-Site Investigations
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sampling Location (a)	Sampling Date	Sample Depth (ft bgs) (b)	Volatile Organic Compounds (mg/kg)			Petroleum Hydrocarbons and BTEX (mg/kg)					
			1,1-DCA	PCE	Carbon Disulfide	TEPH	TPPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Ryerson Railroad Spur											
RS1-A	12/6/88	5	ND (c)	ND	0.05	NA (d)	NA	NA	NA	NA	NA
RS1-B	12/6/88	10	ND	ND	0.064	NA	NA	NA	NA	NA	NA
RS2-A	12/6/88	5	ND	ND	0.0064	NA	NA	NA	NA	NA	NA
RS3-A	12/6/88	5	ND	ND	ND	NA	NA	NA	NA	NA	NA
RS4-A	1/4/89	5	0.0034	0.0067	ND	NA	NA	NA	NA	NA	NA
Former Lowenberg Tanks											
Excavation Sidewall Samples											
Trench-1	2/23/90	6	NA	NA	NA	2000	220	0.39	2	<0.19 (e)	5.6
Trench-2	2/23/90	5	NA	NA	NA	1500	270	0.22	1.2	<0.19	6.9
Trench-3	2/23/90	6	NA	NA	NA	740	200	0.37	1.4	0.55	5.4
Trench-4	2/23/90	5	NA	NA	NA	810	77	0.99	0.36	0.83	2
Well TMW-1	4/12/90	1.5	NA	NA	NA	<5	16	0.59	0.11	<0.001	0.73
Well TMW-1	4/12/90	5.25	NA	NA	NA	230	3900	75	85	43	120
Well TMW-2	4/12/90	1.5	NA	NA	NA	<5	19	0.33	0.08	<0.001	0.56
Well TMW-2	4/12/90	5.25	NA	NA	NA	16	220	7.3	8.6	2.7	6.6
Well TMW-3	4/12/90	3.25	NA	NA	NA	<5	<0.05	<0.001	<0.001	<0.001	<0.001
Well TMW-3	4/12/90	5.25	NA	NA	NA	<5	<0.05	<0.001	<0.001	<0.001	<0.001

Table 4

SOIL

Summary of VOC, Petroleum Hydrocarbon, and BTEX Concentrations Detected in Soil Samples Collected in Prior On-Site Investigations
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sampling Location (a)	Sampling Date	Sample Depth (ft bgs) (b)	Volatile Organic Compounds (mg/kg)			Petroleum Hydrocarbons and BTEX (mg/kg)					
			1,1-DCA	PCE	Carbon Disulfide	TEPH	TPPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Former Ryerson Tank											
Excavation Samples											
West End	3/11/93	8.5	NA	NA	NA	<10	NA	<0.003	<0.003	<0.003	<0.009
East End	3/11/93	9.5	NA	NA	NA	<10	NA	<0.003	<0.003	<0.003	<0.009
Stockpile	3/11/93	- (f)	NA	NA	NA	26	NA	<0.003	0.007	<0.003	<0.009
Well RMW-1	8/6/93	5	NA	NA	NA	ND	NA	NA	NA	NA	NA
Well RMW-2	8/6/93	5	NA	NA	NA	ND	NA	NA	NA	NA	NA
Well RMW-3	8/6/93	5	NA	NA	NA	ND	NA	NA	NA	NA	NA

NOTES:

(a) Data obtained from the following reports (see reference list in report for complete citation):
Ryerson Railroad Spur: The Traverse Group, 9 March 1989; Former Lowenberg Tanks: ENSR, January 1991.
Former Ryerson Tank: SEMCO, 1993.
(b) "ft bgs" indicates feet below ground surface.
(c) "ND" indicates that the compound was not detected and the detection limits were not presented in the reports available to EKI.
(d) "NA" indicates that the sample was not analyzed by the method indicated.
(e) Less than symbol ("<") denotes that compound was not present above the laboratory detection limit indicated.
(f) "-" indicates that the sampling depth is not applicable.

ABBREVIATIONS:

VOCs = Volatile Organic Compounds
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes
1,1-DCA = 1,1-Dichloroethane
PCE = Tetrachloroethene
TEPH = Total Extractable Petroleum Hydrocarbons
TPPH = Total Purgeable Petroleum Hydrocarbons

FIGURES

Table 3

Summary of VOC, Petroleum Hydrocarbon, and BTEX Concentrations Detected in Groundwater Samples Collected in Prior On-Site Investigations
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

GW

Sampling Location and Date (a)	Volatile Organic Compounds (ug/L)								Petroleum Hydrocarbons and BTEX (ug/L)					
	1,1-DCA	1,2-DCA	1,1-DCE	trans-1,2-DCE	TCE	PCE	1,1,1-TCA	Carbon Disulfide	TEPH	TPPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Ryerson Railroad Spur														
RS-1 (12/6/1988)	ND (b)	ND	ND	ND	ND	ND	ND	13	NA (c)	NA	NA	NA	NA	NA
RS-2 (12/6/88)	2.4	ND	ND	ND	ND	ND	ND	17	NA	NA	NA	NA	NA	NA
RS-3 (12/6/88)	37	ND	ND	63	14	14	ND	ND	NA	NA	NA	NA	NA	NA
RS-4 (1/4/89)	240	3.9	40	5.8	<0.5 (d)	<0.5	0.7	<0.5	NA	NA	NA	NA	NA	NA
Former Lowenberg Tanks														
Excavation Water (e, f) 2/23/90	NA	NA	NA	NA	NA	NA	NA	NA	410,000	14,000	140	140	140	1,100
Well TMW-1														
4/13/90	NA	NA	NA	NA	NA	NA	NA	NA	<100	560	10	<2	10	30
11/30/90	NA	NA	NA	NA	NA	NA	NA	NA	<50	ND	3.2	<1	3.2	<1
4/12/91	NA	NA	NA	NA	NA	NA	NA	NA	NA	150	3.2	<0.5	2	<0.5
8/16/91	NA	NA	NA	NA	NA	NA	NA	NA	NA	150	4.8	<0.5	3.7	2.6
10/6/92	NA	NA	NA	NA	NA	NA	NA	NA	110	230	6.1	<0.5	3.1	<0.5
1/4/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	430	9.9	<0.5	<0.5	<0.5
3/28/95	NA	NA	NA	NA	NA	NA	NA	NA	330	100	4.8	<0.5	1.8	3.2
Well TMW-2														
4/13/90	NA	NA	NA	NA	NA	NA	NA	NA	<100	140	10	<2	2	7
11/30/90	NA	NA	NA	NA	NA	NA	NA	NA	<50	ND	3.8	<1	ND	<1
4/12/91	NA	NA	NA	NA	NA	NA	NA	NA	NA	160	16	<0.5	1.7	<0.5
8/16/91	NA	NA	NA	NA	NA	NA	NA	NA	NA	130	7.7	<0.5	1.3	1.1
10/6/92	NA	NA	NA	NA	NA	NA	NA	NA	90	170	18	<0.5	2.5	<0.5

HISTWATR.XLS

FIGURES

Table 3

Summary of VOC, Petroleum Hydrocarbon, and BTEX Concentrations Detected in Groundwater Samples Collected in Prior On-Site Investigations
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sampling Location and Date (a)	Volatile Organic Compounds (ug/L)								Petroleum Hydrocarbons and BTEX (ug/L)					
	1,1-DCA	1,2-DCA	1,1-DCE	trans-1,2-DCE	TCE	PCE	1,1,1-TCA	Carbon Disulfide	TEPH	TPPH	Benzene	Toluene	Ethyl-benzene	Total Xylenes
Well TMW-2 (cont.)														
1/4/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	260	26	<0.5	2	<0.5
Well TMW-3														
4/13/90	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	<2	<2	<2	<2
11/30/90	NA	NA	NA	NA	NA	NA	NA	NA	NA	ND	<1	<1	<1	<1
4/12/91	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5
8/16/91	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5
10/6/92	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5
1/4/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	<50	<0.5	<0.5	<0.5	<0.5
Former Ryerson Tank														
Excavation Water (e)														
3/16/93	NA	NA	NA	NA	NA	NA	NA	NA	850	NA	<0.3	<0.3	<0.3	<0.9
Well RMW-1														
8/11/93	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	<0.5	<0.5	<0.5	<0.5
11/24/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	57	<0.5	<0.5	<0.5	<0.5
Well RMW-2														
8/11/93	NA	NA	NA	NA	NA	NA	NA	NA	<50	NA	1.3	<0.5	<0.5	0.59
11/24/93	NA	NA	NA	NA	NA	NA	NA	NA	NA	50	<0.5	<0.5	<0.5	<0.5
Well RMW-3														
8/11/93	NA	NA	NA	NA	NA	NA	NA	NA	NA (g)	NA (g)	NA (g)	NA (g)	NA (g)	NA (g)
11/24/93	NA	NA	NA	NA	NA	NA	NA	NA	NA (h)	NA (h)	NA (h)	NA (h)	NA (h)	NA (h)

HISTWATR.XLS

Table 3
Summary of VOC, Petroleum Hydrocarbon, and BTEX Concentrations Detected in
Groundwater Samples Collected in Prior On-Site Investigations
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

NOTES:

(a) Data obtained from the following reports:
Ryerson Railroad Spur: The Traverse Group, 9 March 1989.
Former Lowenberg Tanks: ENSR, January 1991; ENSR, 9 October 1991; ENSR, 7 June 1991; SEACOR, 21 May 1993.
Former Ryerson Tank: SEMCO, 1993; Hydro-Environmental Technologies, Inc., 21 December 1993.
See reference list in report for complete citation.
(b) "ND" indicates that the compound was not detected and the detection limits were not presented in the reports available to EKI.
(c) "NA" indicates that the sample was not analyzed by the method indicated.
(d) Less than symbol ("<") denotes that compound was not present above the laboratory detection limit indicated.
(e) "Excavation Water" indicates that a grab groundwater sample was collected from the open tank excavation on the date listed.
(f) Tank excavation pit filled with approximately seven feet of water. Approximately 15,000 gallons of water were pumped and removed with a vacuum truck (ENSR, January 1991).
(g) The sample was not analyzed for petroleum hydrocarbons or BTEX because 0.01 feet of floating hydrocarbon product was present in the well.
(h) The sample was not analyzed for petroleum hydrocarbons or BTEX because 0.02 feet of floating hydrocarbon product was present in the well.

ABBREVIATIONS:

VOCs	= Volatile Organic Compounds	TCE	= Trichloroethene
BTEX	= Benzene, Toluene, Ethylbenzene, and Xylenes	PCE	= Tetrachloroethene
1,1-DCA	= 1,1-Dichloroethane	1,1,1-TCA	= 1,1,1-Trichloroethane
1,2-DCA	= 1,2-Dichloroethane	TEPH	= Total Extractable Petroleum Hydrocarbons
1,1-DCE	= 1,1-Dichloroethene	TPPH	= Total Purgeable Petroleum Hydrocarbons
trans-1,2-DCE	= trans-1,2-Dichloroethene		

Table 4
Summary of Soil and Groundwater Sampling Depths and Analyses
in the Final Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sample ID	Sample Location	Sample Depth Interval (ft bgs) (a)	Date Sample Collected	TEPH (EPA 8015m)	VOCs (EPA 8240)	Arsenic (EPA 7080)	Priority Metals (b)	PAHs (EPA 8100)	Total Organic Carbon
Soil									
P-5-2.5	P-5	2-2.5	7/5/95		X		X		
P-6-2.5	P-6	2.5-3	7/5/95		X		X		
P-7-2.5	P-7	2.5-3	7/5/95	X	X				
P-7-11	P-7	11-11.5	7/5/95						X
P-8-5.5	P-8	5.5-6	7/7/95	X					
P-8-18	P-8	18-18.5	7/7/95						X
P-9-6	P-9	6-6.5	7/7/95	X					
P-9-12	P-9	12-12.5	7/7/95						X
P-10-2.5	P-10	2.5-3	7/7/95	X					
P-10-11	P-10	11-11.5	7/7/95						X
P-11-2	P-11	2-2.5	7/7/95	X	X			X	
Groundwater									
P-1	P-1	10.5-15.5	7/5/95		X	X			
P-2	P-2	17-22	7/6/95		X	X			
P-3	P-3	13-18	7/6/95		X	X			
P-4	P-4	9-14	7/6/95	X	X	X			
P-5	P-5	12.5-17.5	7/5/95	X	X		X		
P-6	P-6	13-18	7/5/95	X	X		X		
P-7	P-7	16-21	7/5/95	X	X	X			
P-8	P-8	14-19	7/7/95	X		X			
P-9	P-9	14-19	7/7/95	X		X			
P-10	P-10	14-19	7/7/95	X		X			
P-11	P-11	10-15	7/6/95	X	X	X		X	
P-Dup	P-11	10-15	7/6/95	X	X	X			

NOTES:

(a) "ft bgs" denotes feet below ground surface.
(b) Priority Metals by EPA 6000/7000 Series include arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, tin, thallium, and zinc.
(c) Grab groundwater samples were collected from borings that were temporarily cased with PVC and screened at the intervals indicated.

ABBREVIATIONS:

TEPH = Total Extractable Petroleum Hydrocarbons Quantified as Diesel
VOCs = Volatile Organic Compounds
PAHs = Polycyclic Aromatic Hydrocarbons

Table 5

Results of Soil Sample Analyses for Metals, Petroleum Hydrocarbons, VOCs and PAHs
in the Final Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Soil

Sample ID	Date Sample Collected	13 Priority Metals (a) EPA 6000/7000 Series							TEPH as Diesel EPA Method 8015m		VOCs EPA Method 8240 (mg/kg)	PAHs EPA Method 8100 (mg/kg)
		Arsenic (mg/kg)	Beryllium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Concentration (mg/kg)	Hydrocarbon Range (b)		
P-5-2.5	7/5/95	<5 (c)	**0.51 (d)**	**37**	**16**	**17**	**25**	**25**	NA (e)	-	ND (f)	NA
P-6-2.5	7/5/95	<5	**<0.5**	**28**	**13**	**9.6**	**23**	**32**	NA	-	ND	NA
P7-2.5	7/5/95	NA	NA	NA	NA	NA	NA	NA	**37 (g)**	C9-C24	ND	NA
									840	C25-C40		
P-8-5.5	7/7/95	NA	NA	NA	NA	NA	NA	NA	**2.3**	C9-C24	NA	NA
P9-6	7/7/95	NA	NA	NA	NA	NA	NA	NA	**1**	C9-C24	NA	NA
P10-2.5	7/7/95	NA	NA	NA	NA	NA	NA	NA	**190 (g)**	C12-C24	NA	NA
									1,700	C25-C40		
P11-2	7/7/95	NA	NA	NA	NA	NA	NA	NA	**170 (g)**	C14-C24	ND	ND
									770	C25-C40		

NOTES:

(a) Priority metals include arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, tin, thallium, and zinc. Only arsenic and those metals detected in soil samples are included in table.
(b) Hydrocarbon range presents the range of carbon chain lengths quantified in the sample because the hydrocarbon did not match the diesel standard.
(c) Less than symbol ("<") denotes that compound was not present above the laboratory detection limit indicated.
(d) Concentrations indicated in bold were present at concentrations that exceeded respective laboratory detection limits.
(e) "NA" indicates that the sample was not analyzed by the method indicated.
(f) "ND" indicates that none of the compounds analyzed by the method listed were present above laboratory detection limits.
(g) The sample chromatogram shows that hydrocarbons with carbon chain lengths greater than C25 were present in this sample. The second value listed represents the concentration of petroleum hydrocarbons in the C25 to C40 range.

ABBREVIATIONS:

TEPH = Total Extractable Petroleum Hydrocarbons Quantified as Diesel
VOCs = Volatile Organic Compounds
PAHs = Polycyclic Aromatic Hydrocarbons

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Table 6
Results of Soil Sample Analysis for Total Organic Carbon
in the Final Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sample ID	Date Sample Collected	Total Organic Carbon Conc. (mg/kg)	Organic Carbon Percent (%)
P-7-11	7/5/95	440	0.044
P-8-18	7/7/95	86	0.0086
P-9-12	7/7/95	430	0.043
P-10-11	7/7/95	170	0.017

Table [illegible]

Results of Groundwater Sample Analyses for Metals, Petroleum Hydrocarbons, and PAHs in the F[illegible] Site [illegible]stiga[illegible]

GW

Sybase, Inc.

64th and 65th Street Properties, Emeryville, California

(EKI 940018.08)

Sample ID	Date Sampled	Arsenic or 13 Priority Metals (a) EPA 6000/7000 Series			TEPH as Diesel EPA Method 8015m		BTEX EPA Method 8240				PAHs Method 8100 (ug/L)
		Arsenic (ug/L)	Nickel (ug/L)	Zinc (ug/L)	Concentration (ug/L)	Hydrocarbon Range (b)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	
P-1	7/5/95	<5 (c)	NA (d)	NA	NA	-	<2	<2	<2	<2	NA
P-2	7/6/95	**7.9 (e)**	NA	NA	NA	-	<2	<2	<2	<2	NA
P-3	7/6/95	<5	NA	NA	NA	-	<2	<2	<2	<2	NA
P-4	7/6/95	<5	NA	NA	**33,000**	C9-C24	<2	<2	<2	**17**	NA
P-5	7/5/95	<5	<5	**26**	**4,100**	C9-C24	<4	<4	<4	<4	NA
P-6	7/5/95	**24**	**6.9**	**39**	**7,300**	C9-C24	<2	<2	<2	<2	NA
P-7	7/5/95	**10**	NA	NA	**1,100**	C9-C24	<4	<4	<4	<4	NA
P-8	7/7/95	<5	NA	NA	**250**	C9-C24	NA	NA	NA	NA	NA
P-9	7/7/95	<5	NA	NA	**110**	C9-C24	NA	NA	NA	NA	NA
P-10	7/7/95	<5	NA	NA	**110**	C9-C24	NA	NA	NA	NA	NA
P-11	7/6/95	**14**	NA	NA	**46,000**	C9-C24	<5	<5	**17**	**41**	ND
P-Dup	7/6/95	**15**	NA	NA	**43,000**	C9-C24	<5	<5	**21**	**44**	NA

NOTES:

(a) Priority metals include arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, tin, thallium, and zinc. Only those metals detected in groundwater samples are included in this table.

(b) Hydrocarbon range presents the range of carbon chain lengths quantified in the sample because the hydrocarbon did not match the diesel standard.

(c) Less than symbol ("<") denotes that compound was not present above the detection limit indicated.

(d) "NA" indicates that the sample was not analyzed by the method indicated.

(e) Concentrations indicated in bold were present at levels that exceeded respective laboratory detection limits.

ABBREVIATIONS:

TEPH = Total Extractable Petroleum Hydrocarbons Quantified as Diesel
BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes.
PAHs = Polycyclic Aromatic Hydrocarbons

GWDAT.XLS

FIGURES

GW

Table 8
Results of Groundwater Sample Analyses for Non-BTEX VOCs in the Final Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sample ID	Date Sampled	Non-BTEX VOCs EPA Method 8240 (a)								
		acetone (ug/L)	chloro-ethane (ug/L)	1,1-DCA (ug/L)	1,1-DCE (ug/L)	cis-1,2-DCE (ug/L)	trans-1,2-DCE (ug/L)	TCA (ug/L)	TCE (ug/L)	vinyl chloride (ug/L)
P-1	7/5/95	<10 (b)	<2	<2	<2	**17 (c)**	**15**	<2	**16**	<2
P-2	7/6/95	**10**	<2	**4**	**42**	**2.8**	<2	**7.4**	**6.4**	<2
P-3	7/6/95	<10	<2	<2	<2	**11**	<2	<2	**68**	<2
P-4	7/6/95	<20	<4	<4	<4	<4	<4	<4	<4	<4
P-5	7/5/95	<20	<4	**44**	<4	<4	**12**	<4	<4	<4
P-6	7/5/95	<10	**34**	**5.6**	<2	**3.4**	**2**	<2	<2	**6.1**
P-7	7/5/95	**23**	<4	<4	<4	<4	<4	<4	<4	<4
P-8	7/7/95	NA (d)	NA	NA	NA	NA	NA	NA	NA	NA
P-9	7/7/95	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-10	7/7/95	NA	NA	NA	NA	NA	NA	NA	NA	NA
P-11	7/6/95	<25	<5	<5	<5	<5	<5	<5	<5	<5
P-Dup	7/6/95	<25	<5	<5	<5	<5	<5	<5	<5	<5

NOTES:

(a) Only compounds detected in groundwater samples are included in table.
(b) Less than symbol ("<") denotes that compound was not present above the laboratory detection limit indicated.
(c) Concentrations indicated in bold were present at levels that exceeded its respective detection limit.
(d) "NA" indicates that the sample was not analyzed by EPA Method 8240.

ABBREVIATIONS:

VOCs = Volatile Organic Compounds
1,1-DCA = 1,1-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
cis-1,2-DCE = cis-1,2-Dichloroethene
trans-1,2-DCE = trans-1,2-Dichloroethene
TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene

GWVOCS.XLS

Table 9
Summary of Well Construction Details and Water Levels
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Well ID	Date Well Installed	Depth of Well (ft bgs)	Screen Interval (ft bgs)	Sand Pack Interval (ft bgs)	Top of Casing Elevation (ft msl)	24 March 1995		7 July 1995	
						Depth to Water (ft bgs)	Groundwater Elevation (ft msl)	Depth to Water (ft bgs)	Groundwater Elevation (ft msl)
MW-1	3/6/95	20	5 - 20	4 - 20	18.24	2.97	15.27	3.81	14.43
MW-2	3/8/95	15.5	5.5 - 15.5	4 - 15.5	19.45	3.03	16.42	4.20	15.25
MW-3	3/7/95	19	4 - 19	3 - 19	15.24	2.72	12.52	6.22	9.02
MW-4	3/6/95	20	5 - 20	4 - 20	14.02	4.57	9.45	5.77	8.25
MW-5	3/7/95	15	5 - 15	4 - 15	12.99	5.75	7.24	6.06	6.93
MW-6	3/6/95	14	4 - 14	3 - 14	12.66	2.55	10.11	5.01	7.65
RMW-1	8/6/93	15.5	4.5 - 15.5	4 - 15.5	14.38	3.61	10.77	4.45	9.93
RMW-2	8/6/93	15.5	4.5 - 15.5	4 - 15.5	14.55	3.35	11.2	4.18	10.37
RMW-3	8/6/93	15.5	4.5 - 15.5	4 - 15.5	14.15	2.95	11.2	3.70 (a)	10.45
TMW-1	4/12/90	15	5 - 15	4 -15	16.31	2.59	13.72	3.27	13.04
TMW-2	4/12/90	15.5	5 - 15	4 -15	15.57	NM	-	NM	-
TMW-3	4/12/90	15.5	5 - 15	4 -15	15.15	1.65	13.5	2.28	12.87

NOTES:

(a) Free-phase hydrocarbons present at a thickness of less than 0.01 foot.

ABBREVIATIONS:

ft bgs = feet below ground surface
ft msl = feet relative to mean sea level
NM = not measured, well obstructed by dirt

Table 10
Summary of Soil Sample Depths and Sample Compositing
in the Initial Site Investigation
Sybase, Inc.
64th and 65th Street Properties
Emeryville, California
(EKI 940018.00)

Sample ID	Sample Location (a)	Sample Interval Depth (ft bgs) (b)	Date Sample Collected
MW1-9.5	MW-1	9.5	3/6/95
MW2-6	MW-2	6	3/8/95
MW3-4	MW-3	4	3/7/95
MW4-8	MW-4	8	3/6/95
MW5-6	MW-5	6	3/7/95
MW6-2	MW-6	2	3/6/95
S1A/B	S1A, S1B	5, 5.5	3/9/95
S2A/B	S2A, S2B	4.5, 4	3/9/95
S3A/B	S3A, S3B	3, 3.5	3/9/95
S4A/B	S4A, S4B	4, 5.5	3/9/95
S5A/B	S5A, S5B	4.5, 4	3/7/95
S6-(A,B)	S6A, S6B	5, 3.5	3/6/95
S7A/B	S7A, S7B	4.5, 4	3/7/95
S8A/B	S8A, S8B	4, 4.5	3/7/95
S-9	S9A	4.5 - 5	3/6/95
S-10	S10	4.5 - 5	3/6/95
S11	S11	5.5 - 6	3/8/95
S12	S12	2.5 - 3	3/8/95
S13	S13	3.5 - 4	3/8/95

NOTES:

(a) If two locations are indicated, then the sample was composited (see Figure 1 for boring locations).
(b) Sample depth in feet below ground surface ("ft bgs") represents the bottom depth of a 0.5 foot sample. If two depths are indicated, they correspond to each respective location listed in previous column.

Soil

Table 11
Results of Soil Sample Analyses for Metals, Petroleum Hydrocarbons, Halogenated VOCs, PAHs, and PCBs in the Initial Site Investigation
Sybase, Inc
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sample ID	Date Sample Collected	Metals EPA 6000 Series			TRPH EPA Method 418.1	VOCs (a) EPA Method 8010			PAHs EPA Method 8100	PCBs (a) EPA Method 8080
		Arsenic (mg/kg)	Lead (mg/kg)	Chromium (mg/kg)	(mg/kg)	1,1-DCA (mg/kg)	PCE (mg/kg)	1,1,1-TCA (mg/kg)	(mg/kg)	PCB-1260 (mg/kg)
MW1-9.5	3/6/95	<5 (b)	<5	26 (c)	16	<0.005	<0.005	<0.005	ND (d)	<0.020
MW2-6	3/8/95	<5	<5	26	16	<0.005	<0.005	<0.005	ND	<0.020
MW3-4	3/7/95	<5	6.7	33	<15	<0.005	<0.005	<0.005	ND	0.032
MW4-8	3/6/95	<5	8.1	36	<15	<0.005	<0.005	<0.005	ND	<0.020
MW5-6	3/7/95	<5	<5	17	22	<0.005	<0.005	<0.005	ND	<0.020
MW6-2	3/6/95	<5	42	36	3100	<0.02 (e)	<0.02 (e)	<0.02 (e)	ND	<0.020
S1A/B	3/9/95	<5	55	19	17	<0.005	<0.005	<0.005	ND	<0.020
S2A/B	3/9/95	<5	<5	19	87	<0.005	<0.005	<0.005	ND	<0.020
S3A/B	3/9/95	<5	12	22	3400	<0.005	<0.005	<0.005	ND	<0.020
S4A/B	3/9/95	<5	29	23	490	<0.005	<0.005	<0.005	ND	<0.020
S5A/B	3/7/95	<5	7.7	21	89	<0.005	<0.005	<0.005	ND	<0.020
S6-(A,B)	3/6/95	<5	<5	27	<15	<0.005	<0.005	<0.005	ND	<0.020
S7A/B	3/7/95	<5	<5	28	1400	<0.005	<0.005	<0.005	ND	<0.020
S8A/B	3/7/95	<5	<5	28	120	<0.005	<0.005	<0.005	ND	<0.020
S-9	3/6/95	<5	5.6	18	<15	0.024	0.81	0.97	ND	<0.020
S-10	3/6/95	<5	5.9	35	<15	<0.005	<0.005	<0.005	ND	<0.020
S11	3/8/95	<5	<5	45	16	<0.005	<0.005	<0.005	ND	<0.020
S12	3/8/95	<5	<5	34	<15	<0.005	<0.005	<0.005	ND	<0.020
S13	3/8/95	<5	5.1	39	18	<0.005	<0.005	<0.005	ND	<0.020

Table 11
Results of Soil Sample Analyses for Metals, Petroleum Hydrocarbons, Halogenated VOCs,
PAHs, and PCBs in the Initial Site Investigation
Sybase, Inc
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

NOTES:

(a) Only compounds detected in soil samples are included in table.
(b) Less than symbol ("<") denotes that compound was not present above the laboratory detection limit indicated.
(c) Compounds indicated in bold were present at concentrations that exceeded respective laboratory detection limits.
(d) "ND" indicates that none of the compounds analyzed by the method listed were present above laboratory detection limits.
(e) Laboratory report indicated detection limits raised; matrix effects necessitated sample dilution.

ABBREVIATIONS:

TRPH = Total Recoverable Petroleum Hydrocarbons
VOCs = Volatile Organic Compounds
1,1-DCA = 1,1-Dichloroethane
PCE = Tetrachloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
PAH = Polycyclic Aromatic Hydrocarbons
PCBs = Polychlorinated Biphenyls

GW

Table 12
Results of Groundwater Sample Analyses for Metals and Petroleum Hydrocarbons
in the Initial Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

Sample ID	Date Sampled	Metals EPA 6000 Series			Fuel Fingerprint EPA Method 8015		TPPH (a) EPA Method 8015/8020					
		Arsenic (ug/L)	Lead (ug/L)	Chromium (ug/L)	TEPH (ug/L)	Hydrocarbon Pattern (b)	TPPH (ug/L)	Hydrocarbon Pattern (b)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)
MW-1	3/23/95	**<5 (c)**	**<5**	**<10**	**5,500 (d)**	**diesel**	**170**	**C7-C12**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-2	3/23/95	**<5**	**<5**	**<10**	**260**	**C9-C24 (e)**	**71**	**<C8**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-3	3/23/95	**13**	**<5**	**<10**	**150**	**C9-C24 (e)**	**<50**	**-**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-4	3/23/95	**<5**	**<5**	**<10**	**190**	**C9-C24 (e)**	**<50**	**-**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
MW-5	3/27/95	**68**	**<5**	**<10**	**29,000**	**C9-C24 (e)**	**600**	**>C8**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
	5/4/95	**NA (f)**	**NA**	**NA**	**130,000**	**C9-C24 (e)**	**NA**	**-**	**NA**	**NA**	**NA**	**NA**
MW-6	3/27/95	**16**	**<5**	**<10**	**13,000**	**C9-C24 (e)**	**74**	**>C8**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
M-6Dup	3/27/95	**NA**	**NA**	**NA**	**5,600**	**C9-C24(e)**	**250**	**>C8**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
	5/4/95	**NA**	**NA**	**NA**	**5,800**	**C9-C24 (e)**	**NA**	**-**	**NA**	**NA**	**NA**	**NA**
RMW-1	3/24/95	**<5**	**<5**	**<10**	**210**	**C13-C24 (e)**	**<50**	**-**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
R-1Dup	3/24/95	**NA**	**NA**	**NA**	**97**	**C10-C24 (e)**	**<50**	**-**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
RMW-2	3/24/95	**7.6**	**<5**	**<10**	**150**	**C10-C24 (e)**	**<50**	**ND**	**<0.5**	**<0.5**	**<0.5**	**<0.5**
RMW-3	3/27/95	**<5**	**<5**	**<10**	**97,000**	**C9-C24 (e)**	**11,000**	**>C8**	**<10**	**<10**	**<10**	**<10**
TMW-1	3/28/95	**<5**	**<5**	**<10**	**330**	**C9-24 (e)**	**100**	**gas**	**4.8**	**<0.5**	**1.8**	**3.2**

NOTES:
(a) TPPH = total purgeable petroleum hydrocarbons quantified against gasoline standard.
(b) Hydrocarbon pattern indicates the identified hydrocarbon in the sample (i.e., diesel) or the range of carbon chain lengths quantified in the sample if the sample chromatogram did not resemble common hydrocarbon standards.
(c) Less than symbol ("<") denotes that compound was not present above the detection limit indicated.
(d) Compounds indicated in bold were present at concentrations that exceeded respective laboratory detection limits.
(e) Sample was quantified in the diesel range (i.e., up to a carbon chain length of 24), but the hydrocarbon chain length range extended to C36.
(f) Not analyzed.

Table 1C

Results of Groundwater Sample Analyses for Metals and Petroleum Hydrocarbons
in the Initial Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

ABBREVIATIONS:
TEPH = total extractable petroleum hydrocarbons
TPPH = total purgeable petroleum hydrocarbons
ND = not detected above laboratory detection limits.
NA = not analyzed.
BTEX = benzene, toluene, ethylbenzene, and xylenes.

Table 13
Results of Groundwater Samples Analyses for Halogenated VOCs, PAHs, and Industrial Solvents
in the Initial Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

GW

Sample ID	Date Sampled	VOCs EPA Method 8010 (a)									PAHs Method 8100 (ug/L)	Industrial Solvents (ug/L)
		chloro-ethane (ug/L)	1,1-DCA (ug/L)	1,2-DCA (ug/L)	1,1-DCE (ug/L)	cis-1,2-DCE (ug/L)	trans-1,2-DCE (ug/L)	TCE (ug/L)	vinyl chloride (ug/L)	Freon 113 (ug/L)		
MW-1	3/23/95	<5 (b)	<2.5	<2.5	<2.5	**39 (c)**	**9.9**	**170**	<5	**9**	ND (d)	ND
MW-2	3/23/95	<2.5	<1.2	<1.2	<1.2	**60**	**46**	**2.5**	<2.5	<2.5	ND	ND
MW-3	3/23/95	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<1.0	ND	ND
MW-4	3/23/95	<2.5	<1.2	<1.2	<1.2	**28**	**16**	**54**	<2.5	<2.5	ND	ND
MW-5	3/27/95	**18**	**5.8**	<0.5	<0.5	**8.5**	**9.6**	<0.5	**10**	<1	ND	(e)
MW-6	3/27/95	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	ND	ND
M-6Dup	3/27/95	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	ND	ND
RMW-1	3/24/95	<2.5	<1.2	**1.4**	<1.2	**16**	**10**	**53**	<2.5	<2.5	ND	ND
R-1Dup	3/24/95	<2.5	<1.2	**1.3**	<1.2	**15**	**9.7**	**51**	<2.5	<2.5	NA (f)	NA
RMW-2	3/24/95	<1	<0.5	**0.96**	<0.5	**12**	**8.4**	**26**	<1	<1	ND	ND
RMW-3	3/27/95	<1	**11**	<0.5	**1.4**	**25**	**22**	**36**	**3.7**	<1	ND	ND
TMW-1	3/28/95	<1	<0.5	<0.5	<0.5	<0.5	<0.5	**2.3**	<1	<1	ND	ND

NOTES:
(a) Only compounds detected in groundwater samples are included in table.
(b) Less than symbol ("<") denotes that compound was not present above the laboratory detection limit indicated.
(c) Compounds indicated in bold were present at concentrations that exceeded its respective laboratory detection limits.
(d) "ND" indicates that none of the compounds analyzed by the method listed were present above laboratory detection limits.
(e) Compounds reported in this sample include: carbon tetrachloride ("CT") =260 ug/L, 1,2-DCA=380 ug/L, ethyl acetate=830 ug/L, ethylbenzene=100 ug/L, tetrachloroethene ("PCE") =200 ug/L, toluene=22 ug/L, and o-xylene=220 ug/L. However, the laboratory indicated that the detection of CT, 1,2-DCA, ethylbenzene, PCE, toluene, and o-xylene is likely attributed to false positive recovery of these compounds in the Industrial Solvent analysis. These compounds were not detected on the EPA 8010 and BTEX

FIGURES

Table 13
Results of Groundwater Samples Analyses for Halogenated VOCs, PAHs, and Industrial Solvents
in the Initial Site Investigation
Sybase, Inc.
64th and 65th Street Properties, Emeryville, California
(EKI 940018.08)

analyses, which use electron capture ("ECD") and photoionization detectors ("PID"), respectively. ECD and PID detectors selectively analyze halogenated compounds and aromatic compounds, respectively. The Industrial Solvent analysis uses a flame ionization detector ("FID"), which is a non-selective detector. Taken together, the data suggests that the CT, 1,2-DCA, ethylbenzene, PCE, toluene, and o-xylene are not present above detection limits in this sample.

(f) Sample not analyzed.

ABBREVIATIONS:

VOCs = Volatile Organic Compounds
1,1-DCA = 1,1-Dichloroethane
1,2-DCA = 1,2-Dichloroethane
1,1-DCE = 1,1-Dichloroethene
PAHs = Polycyclic Aromatic Hydrocarbons
cis-1,2-DCE = cis-1,2-Dichloroethene
trans-1,2-DCE = trans-1,2-Dichloroethene
TCE = Trichloroethene