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Environmental and Geologic Services
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December 9, 1996

Ms. Susan L. Hugo
Alameda County Health Care Services Agency
Hazardous Materials Division
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

RE: **Risk-Based Corrective Action Evaluation**
Former New Century Beverage Company Facility
1150 Park Avenue
Emeryville, California
WA Job #14-1239-01

Dear Ms. Hugo:

On behalf of New Century Beverage Company, Weiss Associates (WA) is submitting the enclosed *Risk-Based Corrective Action (RBCA) Evaluation* for the former underground storage tanks (USTs) at the property referenced above. The objective of this evaluation is to assess the most appropriate future action for petroleum hydrocarbons that are in the subsurface as a result of the former site USTs. The evaluation summarizes previously collected site data; identifies chemicals of concern, possible exposure scenarios and potentially complete exposure pathways; proposes chemical-specific cleanup goals based on the RBCA analysis; and recommends a future action plan. This evaluation recommends that regulatory case closure is the most appropriate future action for the former USTs.

WA proposes that the cleanup goals established by the RBCA analysis (Table 9) replace the total petroleum hydrocarbon (TPH) cleanup goals presented in WA's *Remedial Action Plan*, dated January 27, 1995. The new goals are more protective of human health and ground water quality. The new goals, or target levels, were derived by modeling the transport of hydrocarbons from the source to the potential receptor, using conservative toxicological and fate and transport parameters. In addition, the chemical-specific goals avoid some of the uncertainties that arise from TPH goals. TPH concentrations are only a general measure of the presence of numerous chemicals of concern, many of which may have varying toxicological and transport properties.

Because all maximum petroleum hydrocarbon concentrations in soil and ground water beneath the site are below the cleanup goals established by the RBCA analysis, and because two years of ground water monitoring data indicate that the dissolved hydrocarbon plume is stable, WA recommends regulatory case closure for the former site USTs. Upon your concurrence with this recommendation, WA will submit a workplan for the destruction of the ground water

monitoring wells at the site. We trust this submittal meets your needs. Please call if you have any questions or comments.

Sincerely,
Weiss Associates

Thomas Fojut
Project Hydrogeologist

Carolyn J. Atwood
Senior Project Engineer

Enclosure: Risk-Based Corrective Action Evaluation

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STID ~~1183~~ 1777

RISK-BASED CORRECTIVE ACTION EVALUATION

for

Former New Century Beverage Company Facility
1150 Park Avenue
Emeryville, California

Tim Nitterbach

Submitted to

Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94102

prepared for

New Century Beverage Company
29000 Hesperian Boulevard
Hayward, California 94545

December 9, 1996

Weiss Associates *Environmental and Geologic Services*

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RISK-BASED CORRECTIVE ACTION EVALUATION

for

Former New Century Beverage Company Facility
1150 Park Avenue
Emeryville, California

prepared by

Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608

WA Job # 14-1239-01

Thomas Fojut
Project Hydrogeologist

Weiss Associates' work for the former New Century Beverage Company facility was conducted under my supervision. To the best of my knowledge, the data contained herein are true and accurate and satisfy the scope of work prescribed by the client for this project. The data, findings, recommendations, specifications or professional opinions were prepared solely for the use of the New Century Beverage Company in accordance with generally accepted professional engineering and geological practice. We make no other warranty, either expressed or implied, and are not responsible for the interpretation by others of the contents herein.

Carolyn J. Atwood Date
Senior Project Engineer, R.E.A. #01704

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SUMMARY

Weiss Associates (WA) completed this Risk-Based Correction Action (RBCA) Evaluation for the former New Century Beverage Company Facility in Emeryville, California. The evaluation was performed in accordance with the American Society for Testing and Materials Standard E 1739-95, *Risk-Based Corrective Action Applied at Petroleum Release Sites* (ASTM, 1995). This evaluation also serves as a formal amendment to the Remedial Action Plan submitted in Jan 1995 and approved in August 1995. The objective of this evaluation is to determine the most appropriate future action for subsurface petroleum hydrocarbons from the former site USTs based on site-specific characteristics of the site and the extent and nature of these chemicals of concern (COCs).

The evaluation assesses potential impacts of these COCs on future potential site occupants and on ground water quality. The COCs include benzene, ethylbenzene, toluene, xylenes, naphthalene, fluorene, fluoranthene and pyrene. WA evaluated three different exposure scenarios in this assessment: construction, commercial/industrial, and residential. The construction scenario was added at the request of the Alameda County Health Care Services Agency (ACHCSA). For each exposure scenario, potentially complete exposure pathways were identified and evaluated.

WA established Tier 1 risk-based screening levels (RBSLs) for each COC/potentially complete exposure pathway pair in each scenario. These conservative Tier 1 RBSLs were established using the models and recommended parameter values in the ASTM Standard. Tier 1 RBSLs represent extremely conservative concentrations, below which no significant adverse effects on human health are expected to occur. For those contaminant/pathway pairs for which the conservative Tier 1 RBSLs were exceeded in a particular medium (surface soil, subsurface soil, or ground water), WA completed a Tier 2 analysis. Tier 2 site-specific target levels (SSTLs), which represent the same level of health protection as the Tier 1 RBSLs, were developed using generally accepted modeling methods with site-specific characterization data. The Tier 2 SSTL is a site-specific, rather than generic, level below which contaminants are not expected to pose a significant threat to human health, including by ground water ingestion.

The Tier 1 RBSLs and Tier 2 SSTLs developed in this analysis are WA's recommended final cleanup levels for the subsurface petroleum hydrocarbons that have resulted from the former site USTs. Therefore, they represent a proposed modification to the target levels previously recommended by the ACHCSA in its August 1995 approval of the Remedial Action Plan.

The 1995 source area excavations removed much of the vadose zone source area, reducing future leaching of hydrocarbons into ground water and removing most soil with more than 100 parts per million (ppm) total petroleum hydrocarbons (TPH). This analysis shows that worst-case (maximum) site-specific levels of contaminants of concern remaining in the subsurface do not exceed Tier 1 RBSLs or Tier 2 SSTLs for any of the three exposure scenarios. Therefore, residual contaminants do not appear to pose any significant risk to future potential receptors at the site, nor to

offsite residential use of shallow ground water. Petroleum hydrocarbons in ground water are limited to a stable, onsite plume. Furthermore, natural attenuation is likely to eventually reduce hydrocarbon concentrations to below maximum contaminant levels for drinking water.

Therefore, WA recommends no further action as the most appropriate action for the former site USTs, based on the excavation of the source areas associated with the former underground tanks, the comparison of site data to RBSLs and SSTLs, and the stability of the dissolved hydrocarbon plume. WA further recommends that ACHCSA consider these USTs for closure.

1. INTRODUCTION

At the request of New Century Beverage Company (New Century) and the Alameda County Health Care Services Agency (ACHCSA), Weiss Associates (WA) has prepared this Risk-Based Corrective Action (RBCA) Evaluation for the former underground storage tanks (USTs) at the former New Century facility located at 1150 Park Avenue in Emeryville, California (Figure 1). This evaluation serves as a formal amendment to the Remedial Action Plan (RAP) submitted in January 1995 (WA, 1995) and approved in August 1995 (ACHCSA, 1995). The objective of this evaluation is to determine the most appropriate future action for petroleum hydrocarbons released from the site's former USTs based on site-specific characteristics and the extent and nature of the subsurface petroleum hydrocarbons. As with the RAP, this RBCA evaluation is intended to assess corrective action for petroleum hydrocarbons from the former site USTs; it does not address subsurface chemicals of concern (COCs) from other potential site source areas or from offsite USTs. This evaluation follows the process outlined by the American Society for Testing and Materials (ASTM) Standard E 1739-95, *Risk Based Corrective Action Applied at Petroleum Release Sites.*

The RAP and this subsequent RBCA analysis address petroleum hydrocarbons in soil and ground water at the site from former USTs #1 and #2 (Figure 2). Prior to submittal of the RAP, the two USTs had been removed from the site. In approving the RAP, the ACHCSA agreed that soil excavation in the known source areas with four subsequent quarters of ground water monitoring was the most feasible option for mitigating petroleum hydrocarbons from the former USTs. Furthermore, the RAP approval letter established target soil cleanup levels of 100 parts per million for (ppm) total petroleum hydrocarbons (TPH) and concentrations equal to the EPA Region IX Preliminary Remediation Goals for Residential Soil for benzene, ethylbenzene, toluene and xylenes (BETX).

The source areas were excavated in October and November 1995. Most soil containing hydrocarbons above these cleanup levels was removed. However, some soil containing hydrocarbons above the cleanup levels west and east of the southern former UST (UST #2) was not excavated due to nearby buildings. Excavation north of the UST ceased because WA determined that it would be more cost-effective to pre-characterize the surrounding soil to determine the need for further excavation, if any. The building on the east side of former UST #1 similarly precluded complete removal of soil with hydrocarbon concentrations above the cleanup levels. Additionally, further excavation would have been impractical with the upcoming site demolition and rainy season. Thus, excavation was temporarily discontinued with the verbal approval of the ACHCSA (Personal communication, 1995), and WA drilled borings B-50 through B-63 in November 30, 1995 to further characterize soil north of UST #2.

The post-excavation ground water monitoring was initiated in the fourth quarter of 1995 as required by the RAP approval. New Century has now completed the required four quarters of ground water monitoring following the soil excavations. The third quarter 1996 monitoring report was submitted to the ACHCSA on November 15, 1996.

In May and June 1996, following facility shutdown and the winter storm season, and prior to the facility demolition, WA drilled borings B-64 through B-95. These borings were drilled to characterize soil during site demolition in accordance with certain provisions of a contractual agreement with Kaiser Foundation, owner of the property on which the buildings were located. Samples from the borings were not intended to assess the extent of petroleum hydrocarbons in the subsurface in relation to the tanks, and are thus unassociated with the Remedial Action Plan. Therefore, the results were not used for this evaluation. ? results

WA and New Century met with representatives of the ACHCSA on June 20, 1996, and presented the characterization results conducted subsequently to the October 1995 soil excavations. At that time, ACHCSA representatives requested that WA sample ground water monitoring wells MW-5, MW-6, and MW-13 for polynuclear-aromatic hydrocarbons (PAHs) to assess if PAHs that may be from the former site USTs had impacted ground water. That sampling was completed during the second quarter ground water monitoring event, and reported in the Third Quarter 1996 Status Report (WA, 1996). The ACHCSA also requested that soil samples near the former diesel UST #2 be analyzed for PAHs. In July 1996, borings B-96 and B-97 were subsequently drilled and soil from each was analyzed for PAHs.

Furthermore, it was agreed during the June 20, 1996 meeting that a RBCA analysis be completed along with an amendment to the RAP to develop constituent- and site-specific rather than general TPH target cleanup levels. With this submittal, WA is satisfying that commitment.

A summary of the site background, the RBCA evaluation, and conclusions are presented in the following sections. The conclusions and recommendations also serve as the formal amendment to the January 1995 RAP for this site.

2. SITE BACKGROUND

2.1 Topography

The site is located about 40 ft above mean sea level on an alluvial plain that gently slopes toward San Francisco Bay, located about one-half mile to the west (Figure 1). The north-northwest trending Berkeley Hills are about two miles to the east. Ground surface at the site slopes gently southwest, and north of the site, the topography slopes northwest toward Temescal Creek, about 1,500 ft north of the site. The site is currently an unpaved, vacant lot.

2.2 Hydrogeology

The uppermost sediments beneath the site vicinity have been characterized as Quaternary alluvial and fluvial deposits consisting primarily of fine sand, silt and silty clay (Helley, 1972). Interfluvial basin deposits consisting of plastic silty clay and clay underlie the fluvial deposits. Descriptions of soil samples from the New Century site indicate that the site is underlain by interfingering sediments ranging from silty clay to silty sand, sediments with low to moderate estimated permeabilities.

Since monitoring commenced in 1994, ground water beneath the site has fluctuated seasonally between 4 and 11 ft below grade. Ground water consistently flows southwestward with an average gradient of 0.017 ft/ft. This flow direction is consistent with the flow direction beneath the adjacent Del Monte property, located west of the site (CH_2M HILL, 1992).

2.3 Adjacent Hydrocarbon Sources

Previous investigations have identified numerous potential offsite sources of hydrocarbons in the surrounding commercial/industrial neighborhood. Adjacent properties with former or existing underground fuel tanks include Standard Brands Paint, a former gasoline service station northeast of the site; the former Emeryville Fire Department Station east of the site; the "Corner Site", a former gasoline service station southeast of the site; and the United States Post Office, located east of the site. All four properties are located upgradient of the New Century property. Based on the distribution of hydrocarbons in ground water beneath the New Century site, it appears that petroleum hydrocarbons have migrated onto the New Century property from the Standard Brands property or the former Emeryville Fire Department and the Corner Site.

2.4 Site Use

Except for a residential structure, the 2.9-acre property remained undeveloped until 1913, when a baseball park was built. After the park was removed, the bottling plant was constructed in 1958. The plant housed administrative offices; a quality control laboratory; a production area including beverage canning, packaging and storage; a vehicle maintenance shop and two USTs (Figure 2).

In November 1992, New Century began leasing the adjacent, unpaved parcel west of the site from Del Monte Foods (Figure 2). New Century used the adjacent parcel for delivery truck and employee parking, as did Del Monte prior to the lease. Based on aerial photographs, this parcel was always unpaved and unimproved.

In August 1996, New Century demolished the plant. Currently, the site is unpaved and has no structures.

2.5 Site Environmental History

New Century has fully characterized the site. A summary of completed investigation and remedial activities is presented in Table 1. Although WA is only considering COCs that resulted from the former site USTs, Table 1 presents a summary of all available environmental activities conducted for the site.

3. RBCA EVALUATION

3.1 Introduction

The objective of this RBCA assessment is to evaluate the most appropriate corrective action for subsurface petroleum hydrocarbons from the former site USTs based upon the distribution of these hydrocarbons and their potential (if any) to adversely affect future potential human receptors at the site. To meet this objective, WA has employed the RBCA process as outlined in ASTM Standard E 1739-95, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites.* no degradation assumption

The ASTM RBCA framework is a tiered decision-making process whereby site contaminant levels, as determined during an initial site assessment, are compared to conservatively-derived risk-based screening levels (RBSL) for contaminants of concern in each environmental medium. In the RBCA process, Tier 1 - *Site Classification and Non-Site-Specific-Screening Level Corrective Action Goals* - sites are classified by the urgency of need for initial corrective action, and then site-specific contaminant concentrations are compared to target Tier 1 RBSLs. The ASTM guidance provides example RBSL look-up tables intended as a guide for state and local enforcement agencies; the RBSLs in the look-up tables are not intended to be stand-alone cleanup standards. Site-specific contaminant concentrations below the RBSLs by definition represent human health risks less than the target level, and human health risk may reasonably be assumed to be insignificant if site-specific concentrations are below these target risk levels.

If the Tier 1 RBSLs are exceeded, the RBCA process provides several alternatives for subsequent action. These options include a Tier 2 application of Tier 1 RBSLs at an alternative point(s) of exposure, a Tier 2 analysis including development of Tier 2 site-specific target levels (SSTLs), the provision of institutional or engineering mechanisms to limit or reduce exposures, or remediation to Tier 1 RBSLs. In the Tier 2 analysis included in this document, site-specific risk-based target levels (SSTLs) have been calculated. Similarly to the Tier 1 RBSLs, the Tier 2 SSTLs represent contaminant concentrations below which associated human health risks may reasonably be assumed to be insignificant.

Following this framework, this evaluation includes a brief discussion of the previous site investigation results, identification of the contaminants of concern, a description of potential exposure scenarios, and identification of potentially complete exposure pathways for each scenario. To complete the Tier 1 analysis, the reasonable worst-case contaminant concentration is then identified, and these site-specific concentrations are compared to the appropriate Tier 1 RBSL for each potentially complete exposure pathway.

For exposure pathways where site-specific concentrations exceed the very conservative Tier 1 RBSLs, WA has opted to proceed to a Tier 2 analysis as the most appropriate option. In Tier 2, SSTLs are calculated following the RBCA framework, and site-specific concentrations are compared to the appropriate Tier 2 SSTL(s) to complete the risk analysis for the site. WA then makes recommendations for future action based on the Tier 2 results.

3.2 Site Assessment

Initial site assessment as suggested by the ASTM framework is the collection and assembly of data required to complete a RBCA Tier 1 analysis. Extensive site characterization has been completed for the former site USTs. Site assessment data, specifically analytic results for soil, analytic results for ground water and ground water elevation data, are presented in Appendices A, B and C, respectively. A summary of environmental activities is presented in Table 1.

3.2.1 Identification of Chemicals of Concern

Site investigations have identified specific COCs that are associated with gasoline and diesel in soil and ground water. The COCs that are considered in this evaluation include: benzene, toluene, ethylbenzene and xylenes (BTEX) and four polynuclear aromatic hydrocarbons (PAHs): naphthalene, fluoranthene, fluorene and pyrene.

Although halogenated volatile organic compounds (HVOCs) have been detected in soil and ground water, WA has not considered them in this evaluation because it is unlikely they have resulted from the former site USTs. However, WA has compared the maximum concentration of each HVOC in soil and ground water with USEPA Preliminary Remediation Goals. All maximum HVOC concentrations are below their respective USEPA PRGs. Therefore, HVOCs in the subsurface do not pose an unacceptable risk to human health.

The distribution of the COCs considered for this evaluation is discussed below.

Surface Soil

No PAHs have been identified in surface soil, soil between ground surface and 3 ft depth, based on sampling conducted in 1996. Other COCs above laboratory method detection limits have been identified in three areas:

1) BETX near the former gasoline underground fuel tank (UST #1) and associated product piping and dispensers. WA excavated surface soil in November 1995 from the area south of the tank, but due to the presence of a site building at the time, overexcavation to completely remove all hydrocarbon contaminated soil could not be completed. Benzene at 0.008 ppm and 5.2 ppm xylenes remain in surface soil in this area.

2) Ethylbenzene and xylenes beneath the former vehicle maintenance area. A maximum of 0.98 ppm ethylbenzene and 1.1 ppm xylenes have been detected.

Hydrocarbons beneath this area are not associated with the underground fuel tanks and are not considered in this evaluation.

3) Xylenes beneath the chemical storage area in the southeastern portion of the property. Xylenes at 6.1 ppm were detected in one sample. Again, hydrocarbons are not associated with the underground tanks and are not considered in this evaluation.

Since the date that surface soil samples giving these results were collected, the buildings and other structures on site have been demolished or removed from the site. During demolition this year, it is likely that surface soils in each of these areas were significantly disturbed, likely resulting in significant aeration of these soils and a resulting decrease in COC concentration. However, to be conservative, the worst-case concentrations of COCs detected at any time during previous UST investigations were used in this RBCA analysis.

Subsurface Soil

No PAHs have been identified in subsurface soil (soil below 3 ft depth per ASTM definition) based on sampling conducted in 1996. BTEX, however, have been identified in unsaturated subsurface soil in two areas:

1) In the vicinity of former northern underground fuel tank (UST #1) and associated product piping and dispensers and in the smear zone above the water table downgradient of UST #1. WA overexcavated impacted subsurface soil from south of the tank in November 1995. Up to 1.7 ppm benzene remains in subsurface soil.

2) In the vicinity of the former southern underground fuel tank (UST #2) and in the smear zone above the water table downgradient of UST #2. WA overexcavated impacted subsurface soil from west of the tank in November 1995. Based on soil sample results, no benzene remains in soil around UST #2.

Xylenes at 0.008 ppm were detected in unsaturated, subsurface soil in two other areas of the site. However, because no other hydrocarbons were detected in soil from these areas, WA has concluded that these positive detections are not significant. Furthermore, these levels are below the maximum used in this evaluation.

Ground Water

COCs have been detected in ground water samples from monitoring wells and in grab ground water samples from borings onsite. Limited hydrocarbon impacts have been identified in ground water in these areas:

1) Near and downgradient of former UST #1 and #2. New Century has been monitoring ground water near and downgradient of these two source areas since 1994. During the most recent four quarters of monitoring, the maximum detected benzene concentration was 1,700 ppb in MW-13. Toluene, xylenes, & ethylbenzene are also present. Low concentrations of four PAHs likely

associated with diesel also have been detected: pyrene, fluorene, flouranthene, and naphthalene.

2) Beneath the northeast corner of the site. Petroleum hydrocarbons in ground water in this area are likely from an upgradient, offsite source. Grab ground water samples from boring B-10 contained 340 ppb benzene. Only up to 21 ppb benzene was detected in samples from well MW-2.

3) Beneath the southeast corner of the site. Petroleum hydrocarbons in ground water in this area are also likely from an upgradient, offsite source. Only 1 ppb benzene was detected in a grab sample from boring B-3 and no BETX were detected in samples from wells MW-3 and MW-4.

Because petroleum hydrocarbons in the latter two areas are the result of offsite sources, WA has not considered data from these areas in the RBCA evaluation. However, the maximum hydrocarbon concentrations in the latter two areas are lower than hydrocarbon concentrations associated with the site source areas.

3.2.2 *Identification of Potential Receptors*

Previous investigations have identified potential receptors to COCs beneath the site. A summary of identified potential receptors is presented below.

Human Receptors

Because all site buildings have been demolished and the site is vacant, no current residential or commercial human receptors exist at the site. No offsite receptors are impacted by the known hydrocarbon plume. However, future occupancy is likely, considering that the property will probably be developed. According to the Emeryville Planning Department, the property is zoned for commercial development. Residential development is not planned for the site. Therefore, WA has performed this evaluation assuming that future workers will occupy the property.

Ground Water Wells in the Site Vicinity

There is no current or anticipated future use of ground water at the site. During site demolition, an apparent water supply well was discovered. The discovery was reported to the ACHCSA and the Alameda County Flood Control and Water Conservation Department (ACFCWCD), the local well permitting agency. The well was destroyed under permit from Zone 7 Water District in November 1996. The well did not appear to be screened in the first water-bearing zone. No installation records exist for the well, nor does it appear in any agency files or databases. Anecdoted information indicates that the well was probably installed around when the building was constructed in 1958. The well was not used because the well did not produce water of adequate quality or quantity.

According to the ACFDWCD, no documented domestic or municipal supply wells are within one-half mile of the site. ACFCWCD records show that one industrial supply well is located at 3516

Adeline Street, near the intersection of Adeline and Hollis Streets, about a half-mile south (crossgradient) of the site. The building on the site is signed "City of Paris Cleaners and Dryers" and does not appear to be in active industrial use. The well was installed to 97 ft below ground surface in 1936. It is not known whether the well still exists and actively used. To be conservative, WA assumed this well to be a potential receptor for the purpose of this evaluation.

ACFCWCD will allow supply wells near or on the site in the future. However, the ACFCWCD requires a 50-ft deep sanitary seal for municipal and industrial supply wells, and therefore, it is not probable that petroleum hydrocarbons in shallow ground water beneath the site would impact water captured by a future supply well.

Environmental Receptors

WA reviewed topographic maps and surveyed the site vicinity and did not identify any potential environmental receptors. San Francisco Bay is about one-half mile to the west and Temescal Creek, which flows into the Bay, is about 1,500 ft north of the site. Based on their distance from their site, WA does not consider either surface water body to be a potential receptor of COCs from the site.

3.2.3 Exposure Scenarios and Potentially Complete Exposure Pathways

WA selected two exposure scenarios for evaluation. These are a future construction scenario and a future commercial/industrial scenario. The potentially complete exposure pathways for each scenario are presented below.

Construction Scenario

Since the demolition of all site structures in August 1996, the property has remained vacant and unpaved. Sale and development of the property in the near future is likely, and therefore, WA has evaluated possible potential exposure pathways to future construction workers. The following pathways are potentially complete during site construction:

- Inhalation of outdoor air containing volatilized COCs from soil
- Ingestion of, inhalation of or dermal contact with surficial soil containing COCs
- Inhalation of outdoor air containing volatilized COCs from ground water

Permal contact

Commercial/Industrial Scenario

The site will likely be developed into a commercial or industrial facility. Therefore, this scenario considers future exposure to workers that occupy the property for up to 8 hours per day. WA identified the following potentially complete exposure pathways:

- Inhalation of outdoor air containing volatilized COCs from soil
- Inhalation of indoor air containing volatilized COCs from soil

- Ingestion of, inhalation of or dermal contact with surficial soil containing COCs
- Inhalation of outdoor air containing volatilized COCs from ground water
- Inhalation of indoor air containing volatilized COCs from ground water

Ingestion of ground water is not considered potentially complete for onsite commercial or industrial receptors. Water will likely be supplied by the local water utility, the East Bay Municipal Utility District. Also, the local permitting agency requires a 50-ft deep sanitary seal for municipal and industrial supply wells. A seal this deep will probably prevent the migration of impacted ground water into any future supply well installed on the property.

Residential Scenario - Ground Water Considerations

WA has identified ingestion of ground water by residential receptors as highly unlikely but possible. Subsurface hydrocarbons are not near or below residential property, and therefore, no residential receptors are currently exposed to petroleum hydrocarbons. However, WA has assumed for the purpose of this evaluation that the industrial supply well might be used for municipal well and that it is downgradient of the site. These are very conservative assumptions considering that WA's well survey identified the well as an industrial supply well, and that it is crossgradient, not downgradient, of the site. Nevertheless, to demonstrate that the well will not be impacted by COCs from the site, WA has considered the well as a potential receptor. Therefore, WA has evaluated the following potentially complete exposure pathway for a residential scenario:

- Impact of ground water for ingestion by COCs in soil leachate
- Ingestion of ground water containing COCs

3.3 Site Classification and Initial Response Action

ASTM Standard E 1739-95 recommends classifying the site while investigation data are assembled to determine the most appropriate initial response action to protect potential receptors. The classification criteria, presented in Table 1 of the Standard, are qualitative. Based upon current site conditions, the site best satisfies the criteria for Classification 3: "possible Long-term (>2 years) threat to human health, safety, or sensitive environmental receptors." This description is the most appropriate because surface soils containing COCs are possibly accessible to the public; the shallowest, potable ground water is likely more than 50 ft below impacted soil; shallow ground water is non-potable and not likely be used; and no buildings are above subsurface COCs.

The initial response action is to "Notify appropriate authorities, property owners, and potentially affected parties, and only evaluate the need to monitor ground water and evaluate effects of natural attenuation on dissolved plume migration, leachate migration, [and] dissolved plume migration and restrict access to surface soils." New Century informed all involved parties, has installed 14 ground water monitoring wells monitored ground water beneath the site since March 1994. Up until the site demolition, surface soils were covered by concrete slab or asphalt. Therefore, New Century has satisfied the initial response action.

3.4 Tier 1 Evaluation

3.4.1 Tier 1 Risk-Based Screening Levels

WA established risk-based screening levels (RBSLs) for each COC and each potentially complete exposure pathway for each of the exposure scenarios evaluated. The RBSLs conservatively assume that future receptors of each pathway will be adjacent to the location of the highest COC concentrations.

The RBSLs in this evaluation are based on a target risk level of 1×10^{-5} for carcinogens and a chronic hazard quotient of 1.0 for non-carcinogens. The levels have been accepted previously by the ACHCSA. For ethylbenzene, toluene, xylenes and naphthalene in the commercial/industrial scenario, WA used the RBSLs recommended in the ASTM Standard's Table X2.1, "Example Tier 1 Risk-Based Screening Level (RBSL) Look-up Table." For benzene, WA adjusted the ASTM RBSLs to reflect a cancer slope factor of 0.1 mg/kg-day, as established by the California Department of Health Services. Thus, benzene RBSLs used in this evaluation are 29% of those suggested in the Standard's look-up table.

To calculate RBSLs for the other PAHs, fluorene, pyrene and fluoranthene and for all COCs in the construction scenario, WA used the chemical and toxicological properties listed for each hydrocarbon in Table X1.2 of the Standard for the pathway specific equations in Table X2.3. For the construction scenario, RBSLs were calculated using the Standard ASTM equations and toxicological values, and Standard ASTM default values for everything except exposure duration and exposure frequency. Exposure frequency was set to 250 days per year (comparable to commercial/industrial exposure), and exposure duration was set to two years, representing a reasonable worst-case duration for future construction. RBSLs for each COC in each exposure scenario are presented in Tables 2 through 7.

3.4.2 Comparison of Site Concentrations with Risk-Based Screening Levels

WA compiled the maximum concentration for each COC in surface soil (soil between ground surface and 3 ft depth) and subsurface soil (soil deeper than 3 ft below ground surface), and the maximum concentrations detected in ground water during the past four quarters, September 1995 through June 1996. For the construction scenario, WA did not distinguish between surface and subsurface soil because site workers will likely have dermal contact with subsurface soil. The site-specific maximum contaminant concentrations in each medium are presented with their corresponding RBSLs in Tables 2 through 7.

As shown in Tables 2 and 3, all maximum COC concentrations are below the RBSLs for the construction scenario.

For the commercial/industrial scenario (Tables 4 and 5), the maximum concentrations are below the respective RBSLs except for the following exposure pathways for benzene:

- Inhalation of outdoor air containing volatilized benzene from soil
- Inhalation of indoor air containing volatilized benzene from soil
- Inhalation of indoor air containing volatilized benzene from ground water

All maximum COC concentrations are below the residential RBSLs except the following potentially complete exposure pathways for benzene (Tables 6 and 7):

- Leachate from soil to ground water designated for potential ingestion
- Ingestion of benzene in ground water designated for potential municipal supply

The residential RBSLs were used for ground water because the exposure scenario assumes an off-site residential supply.

3.4.3 Tier 1 Recommendations

The comparison of site-specific maximum contaminant concentrations to conservative Tier 1 RBSLs indicates that no significant adverse risk is posed to future construction workers by the maximum concentrations of subsurface COCs at the site. Therefore, no further action is warranted based on the evaluation of the construction scenario.

For future potential on-site commercial/industrial receptors, the comparison of site-specific maximum contaminant levels to conservative, Tier 1 RBSLs indicates that no significant adverse risk is associated with petroleum-related impacts at the site, with the possible exception of benzene impacts.

Maximum benzene concentrations in soil and ground water exceed the conservative RBSLs for three potentially complete exposure pathways. Because the assumptions in the Tier 1 evaluation very conservatively estimate the risk posed by residual petroleum hydrocarbons beneath the site, and because ample site-specific investigation data are available, WA believes the most appropriate option is to assess each of these pathways specifically in a Tier 2 evaluation.

To evaluate the potential for known petroleum hydrocarbons in soil and ground water to impact potential residential receptors through ground water ingestion, the Tier 1 analysis has very conservatively compared worst-case on-site COC concentrations to residential Tier 1 RBSLs. Even using the very conservative approach, no significant adverse health affects are predicted as a result of the xylene, ethylbenzene, toluene, pyrene, flourene, naphthalene, or flouranthene in ground water. Benzene concentrations in onsite ground water do, however, exceed the conservative Tier 1 RBSL for residential ingestion. The known ground water plume is stable and limited to the site, and future use of shallow onsite ground water is not a reasonable assumption. Furthermore, because monitoring data to date show that the plume is stable, it is extremely unlikely that offsite migration will occur. Nonetheless, WA has opted to evaluate the benzene impacts on shallow ground water further at Tier 2. In Tier 2, as discussed below, the nearest known ground water supply well will be used as the most reasonable assumed point of exposure.

3.5 Tier 2 Evaluation

The objective of this Tier 2 evaluation is to use site-specific data to determine site-specific target levels (SSTLs) for comparison to site-specific levels of COCs, followed by a determination of the need for further action. Tier 2 SSTLs are typically less than Tier 1 conservative RBSLs, not because they represent a lesser protection to human or ecological receptors, but because the site-specific evaluation eliminates some of the very conservative assumptions used to formulate the RBSLs. In fact, like Tier 1 RBSLs, Tier 2 SSTLs are conservative estimates of the maximum concentrations that do not pose a significant risk to identified receptors. Once the SSTLs are established, WA compares them to maximum site concentrations and makes a recommendation based on this comparison.

3.5.1 Tier 2 Site-Specific Target Levels

The Tier 1 evaluation identified four pathways for which the maximum benzene concentrations in soil and ground water exceeded RBSLs. Only these pathways are evaluated at Tier 2. Three of these are associated with benzene vapor pathway exposures for future commercial receptors, and two are concerning ingestion of ground water for postulated residential exposure. WA derived a SSTL for benzene for each of these pathways as described below. The SSTLs are provided in Table 8 and calculations for each SSTL are included in Appendix E.

<u>Volatilization from Soil to Outdoor Air - Commercial/Industrial Scenario</u>

To establish an appropriate SSTL for benzene in soil, WA used an adaptation of the Jury contaminant transport model as described in Sanders and Stern (1994). Jury originally published this model, describing the transport of organic compounds from a contaminant source through soil in a series of papers in 1983 and 1984, followed by a paper in 1990 (Jury, *et al.*, 1983; Jury, *et al.*, 1984a,b,c; Jury, *et al.*, 1990.) Jury's model, which has been widely used in environmental risk assessments, addresses transport from soil through a thickness of overlying soil to ground surface. It further assumes first-order degradation of the contaminant over time in the media of concern and can be solved for assuming either a finite or infinite contaminant source with a specified initial contaminant concentration.

Using site-specific data, WA calculated the dose and target risk level presented by the maximum benzene concentration in site soil. Then, WA determined the dose that would result in a risk level of 10^{-5} and, with this adjusted dose, back-calculated to a soil concentration using the same site-specific data. This back-calculated concentration is the SSTL for this pathway. WA's calculations are shown in Appendix E.

WA input conservative parameters into the model. The maximum benzene concentration in soil, 1.7 ppm at 10 ft depth, was used as the representative concentration in soil. The model assumes all soil between 0.5 and 10 ft has this representative concentration. It also assumes a vadose zone half life for benzene of 365 days, generally accepted as a very conservative value for the vadose zone. The other soil and chemical parameters used to calculate the SSTL are the same values used by the Standard to calculate the Tier 1 RBSL.

Volatilization from Soil to Indoor Air - Commercial/Industrial Scenario

The Sanders and Stern adaptation of Jury's model allows the calculation of a time-dependent concentration for indoor air, assuming a contaminant source in soil or ground water. WA substituted the surface zone of influence (area of a potential future building) for the soil surface area used by Jury, under the assumption that volatile chemical transport into buildings will be controlled only by the rate of diffusion to the zone of influence. The model then calculates the contaminant flux into a hypothetical building through a foundation slab. The calculation of total dose (i.e., the amount of benzene inhaled over the exposure period) is then made by integrating the rate expression over the entire period.

The representative concentration for soil, contaminant thickness and benzene half-life are the same as used to calculate the SSTL in the volatilization from soil to outdoor air pathway. In addition, WA assumed a worst case scenario of the construction of a future building directly over the source area. This 120 by 330 ft hypothetical building is located directly over an assumed 9.5-ft thickness of soil with a benzene concentration of 1.7 ppm. A slab attenuation factor is used to calculate the flux through the building foundation. The slab attenuation factor corresponds to that in the Johnson and Ettinger model used in the Standard to calculate Tier 1 RBSLs. The resulting Tier 2 SSTL is still an extremely conservative (i.e., health protective) number, because of the conservative nature of the assumptions used as input to the model.

Volatilization from Ground Water to Indoor Air - Commercial/Industrial Scenario

Jury's model also allows the assumption that the contaminant is present at a specified initial concentration in a layer of infinite thickness at some distance below the ground surface, equivalent to an infinite contaminant source. The mathematical solution for the model under this set of assumptions is appropriate for use in establishing the SSTL for benzene in ground water for this transport pathway. The solution assumes an infinite source at an initial source strength in soil. The initial concentration in soil is defined by Jury as the sum of the contaminant present at a specific depth that is *i)* adsorbed onto soil, *ii)* as vapor in the air-filled pore spaces, and *iii)* as a dissolved phase in the liquid-filled pore spaces. With ground water as the contaminant source, it is appropriate to assume that initially no contaminant is adsorbed onto soil or present as a dissolved phase in soil pores, and the initial concentration is completely represented by that in the soil vapor. Thus, WA has calculated the initial source strength assuming contaminants in ground water volatilize into soil and are present as soil vapor at the ground water/soil interface. To convert the worst-case concentration of benzene in ground water to a concentration in the air-filled pore spaces, Henry's Law is assumed to be applicable, and the worst-case concentration in soil vapor is calculated from the worst-case concentration in ground water. This assumption is appropriate for dilute solutions of benzene in ground water and is valid for this site.

As with the volatilization of benzene from soil into indoor air, a hypothetical building is assumed to be located directly above the source. All other parameters are the same except for WA's estimated value for the benzene half-life. WA chose a more conservative value of 730 days because biodegradation is slower beneath the water table due to the limited supply of oxygen.

Leachate from Soil to Ground Water for Ingestion

To calculate a SSTL, WA modeled leaching of benzene from soil into ground water using the Tier 1 default values for soil and chemical parameters that are proposed by the ASTM Standard. After establishing a concentration in ground water based on the soil leachate, the model proceeds as described below for the ground water ingestion SSTL.

Ground Water Ingestion - Residential Scenario

Although shallow ground water beneath the site vicinity has no current or likely future use, WA conservatively assumed that a reported industrial supply well, located a half-mile crossgradient of the site, is hypothetically downgradient of the site and used for municipal supply. WA modeled benzene transport toward this hypothetical receptor by calculating a site-specific dilution-attenuation factor (DAF). The DAF is calculated empirically from concentrations in ground water detected along the longitudinal axis of the dissolved plume. Once the DAF is established, a curve is selected for the site and projected downgradient to predict a concentration at the hypothetical receptor location. The DAF is normalized to the maximum acceptable concentration at the receptor location and the model back-calculates the maximum acceptable concentration at the source that could hypothetically result in the acceptable concentration at the down-gradient location.

For this evaluation, WA selected data from boring B-40, the location of the maximum benzene concentration detected onsite, well MW-13 and MW-8. The acceptable or target concentration at the downgradient point of exposure was set at the MCL for benzene, 1 ppb. The model estimates a SSTL at the source above the solubility limit for benzene. The calculations are presented in Appendix D.

3.5.2 Comparison of Site Concentrations with Site-Specific Target Levels

Table 8 presents a SSTL summary, and compares the SSTLs with maximum on-site contaminant concentrations. As shown, the site-specific maximum contaminant concentrations are below Tier 2 SSTLs for each pathway evaluated at Tier 2.

3.5.3 Tier 2 Recommendations

Considering that the Tier 2 evaluation models rigorously applied conservative input values to formulate each SSTL and that the resulting SSTLs were compared to *maximum* site concentrations, this Tier 2 evaluation clearly demonstrates that benzene in the subsurface does not pose a risk to human health in a commercial/industrial or residential scenario. Therefore, WA recommends no further risk evaluation concerning petroleum hydrocarbons in soil and ground water beneath the site, and recommends that no further action at the site is necessary.

The Tier 2 evaluation assesses not only potential risk to human health but also to the potential degradation of ground water quality. Even though benzene concentrations in the stable on-site plume exceed the California Department of Health Services maximum contaminant level for

drinking water of 1 part per billion, the modeling performed to establish the SSTL for ground water ingestion showed that the dissolved hydrocarbon plume does not pose an unacceptable risk for hypothetical future use of ground water at the point of exposure examined. Strong evidence supports that the plume is stable:

- Benzene concentrations in ground water decreases rapidly to concentrations below laboratory method detection limits between well MW-13 and wells MW-8, MW-11 and MW-14. This suggests that although concentrations remain elevated above MCLs, the plume concentrations attenuate significantly at the downgradient plume edge.
- Even under a steep hydraulic gradient of 0.017 and with a calculated hydraulic conductivity of 9.1 ft/day, dissolved hydrocarbons have not migrated from the original source. Because UST #1 was not used for gasoline storage after 1987, the benzene likely is the result of a pre-1987 release. Thus, petroleum hydrocarbons have migrated less than 240 ft, the distance between the source and the clean downgradient wells, in more than nine years since the time of the release.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 RBCA Conclusions

The objective of this RBCA evaluation was to assess the most appropriate future action for petroleum hydrocarbons from the former site USTs based on the risk to human health and ground water quality posed by these petroleum hydrocarbons in soil and ground water beneath the site. The evaluation can be summarized as follows:

- BETX and four PAHs--naphthalene, fluorene, flouranthene and pyrene--have been identified as subsurface chemicals of concern potentially from the former site USTs.
- Three potential exposure scenarios were examined in this analysis. Future workers in a construction or commercial/industrial scenario are the most likely receptors. Exposure to residential receptors through ground water ingestion is a possible but improbable scenario. No sensitive environmental receptors were identified near the site; therefore, risks to environmental receptors were not considered.
- Potentially complete exposure pathways were identified for all scenarios, and site-specific contaminant concentrations were compared to conservatively-derived Tier 1 RBSLs.
- No Tier 1 RBSLs were exceeded for the construction scenario. All site-specific maximum concentrations of all COCs except benzene were below the Tier 1 RBSLs for the commercial/industrial scenario. Maximum benzene concentrations in soil exceed RBSLs for volatilization from soil into outdoor air, volatilization from soil into indoor air, and volatilization from ground water into indoor air. Benzene in ground water exceeded the Tier 1 RBSL for residential soil leachate to ground water and ground water ingestion
- Tier 2 SSTLs were developed for those pathway/contaminant pairs for which maximum site-specific COC concentrations exceeded the Tier 1 RBSLs using generally accepted modeling methodologies and site-specific characterization data.
- Maximum benzene concentrations in soil and ground water are below Tier 2 SSTLs for all pathways examined.
- Based on WA's ground water modeling to establish a SSTL for the ground water ingestion pathway, the dissolved plume appears stable. It is unlikely that the plume will degrade ground water quality in the site vicinity.

4.2 Proposed RAP Amendment

The RBSLs and SSTLs not only determine maximum acceptable concentrations of COCs, but also may be used to establish target cleanup concentrations based on each COC's risk to human health. Typically, the lowest RBSL for all potentially complete exposure pathways for a COC in a particular medium is selected as the cleanup goal. If a pathway-COC pair is evaluated at Tier 2 to establish a SSTL, then the SSTL is considered in lieu of the RBSL.

Using this methodology, WA has proposed new cleanup goals to replace the cleanup levels proposed in the RAP (Table 9). Because the RBCA process does not evaluate TPH as a viable measure of risk, no TPH cleanup levels are proposed. WA believes that specific COC cleanup goals is more defensible because the reporting standards for TPH differ among analytical laboratories, TPH values may represent concentrations of non-petroleum hydrocarbons, and TPH values measure the aggregate concentrations of possibly hundreds of compounds, many of which may pose little or no health risk.

4.3 Recommendation for Closure

The results of this evaluation conclude that subsurface petroleum hydrocarbons from the former site USTs do not pose a significant risk to human health or ground water quality. Therefore, WA recommends that the ACHCSA grant case closure for the former site USTs because:

- The USTs have been removed.
- New Century has remediated the source. The majority of the hydrocarbon-bearing soil from around the former underground fuel tanks was excavated, minimizing future leaching of hydrocarbons into ground water.
- Petroleum hydrocarbons in ground water can be expected to attenuate more rapidly now that the source areas have been remediated. Over two years of monitoring data show that the plume is stable.
- Future use of shallow ground water is unlikely. Well permits require a minimum 50-ft seal for municipal and supply wells.

5. REFERENCES

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FIGURES

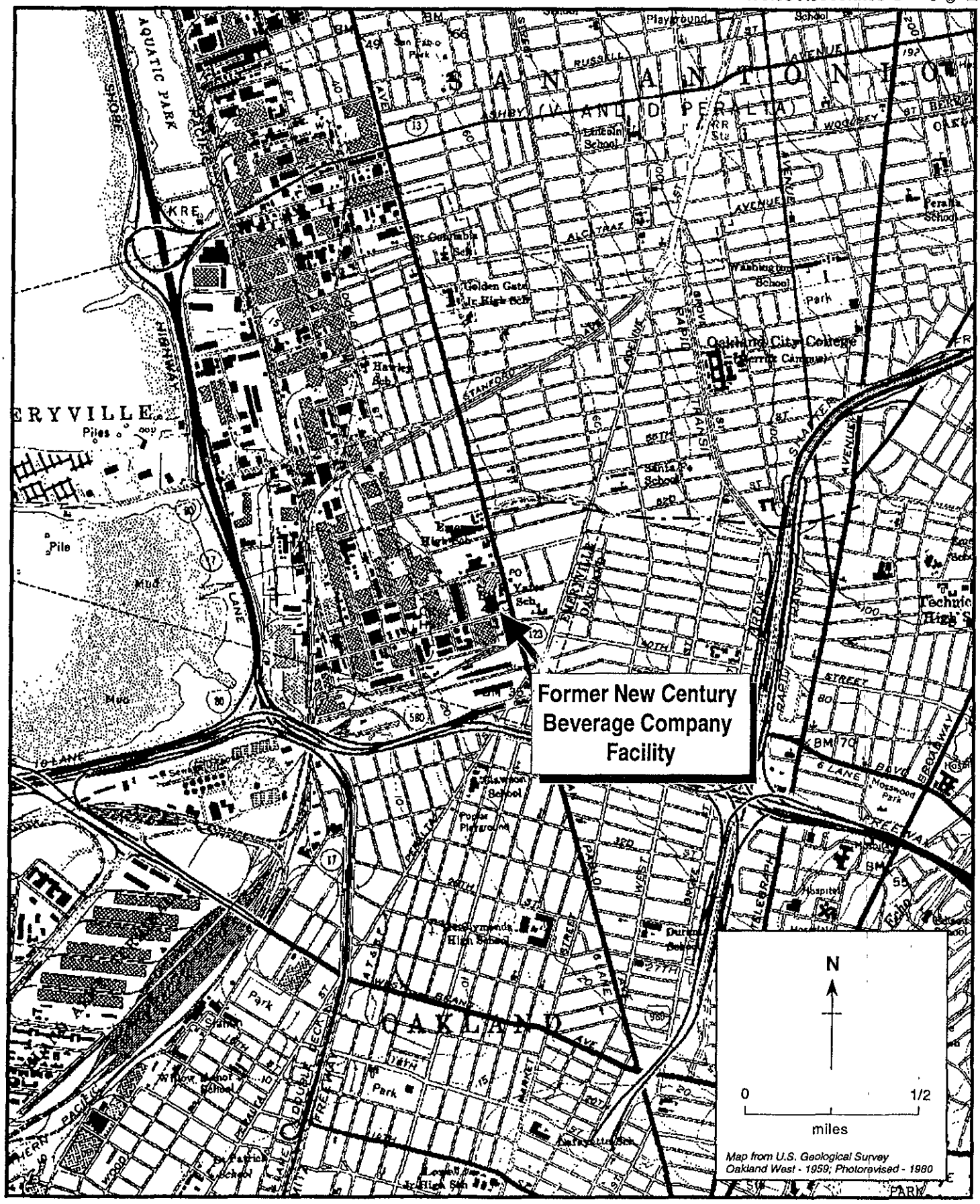
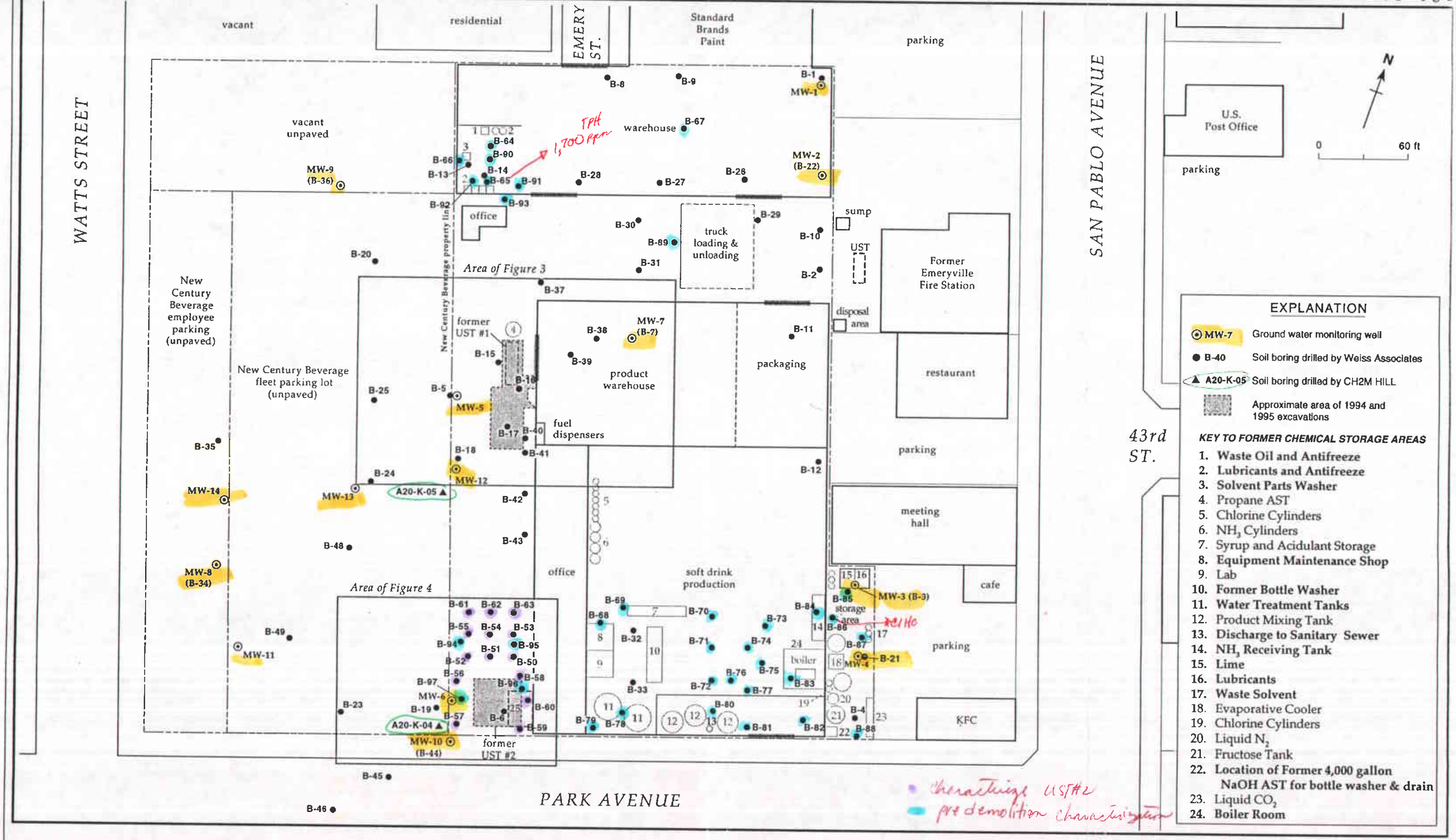


Figure 1. Site Vicinity Map - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California



EXPLANATION

- MW-7 — Ground water monitoring well
- B-40 — Soil boring drilled by Weiss Associates
- A20-K-05 — Soil boring drilled by CH2M HILL
- Approximate area of 1994 and 1995 excavations

KEY TO FORMER CHEMICAL STORAGE AREAS

1. Waste Oil and Antifreeze
2. Lubricants and Antifreeze
3. Solvent Parts Washer
4. Propane AST
5. Chlorine Cylinders
6. NH_3 Cylinders
7. Syrup and Acidulant Storage
8. Equipment Maintenance Shop
9. Lab
10. Former Bottle Washer
11. Water Treatment Tanks
12. Product Mixing Tank
13. Discharge to Sanitary Sewer
14. NH_3 Receiving Tank
15. Lime
16. Lubricants
17. Waste Solvent
18. Evaporative Cooler
19. Chlorine Cylinders
20. Liquid N_2
21. Fructose Tank
22. Location of Former 4,000 gallon NaOH AST for bottle washer & drain
23. Liquid CO_2
24. Boiler Room

Figure 2. Ground Water Monitoring Well and Soil Boring Locations - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

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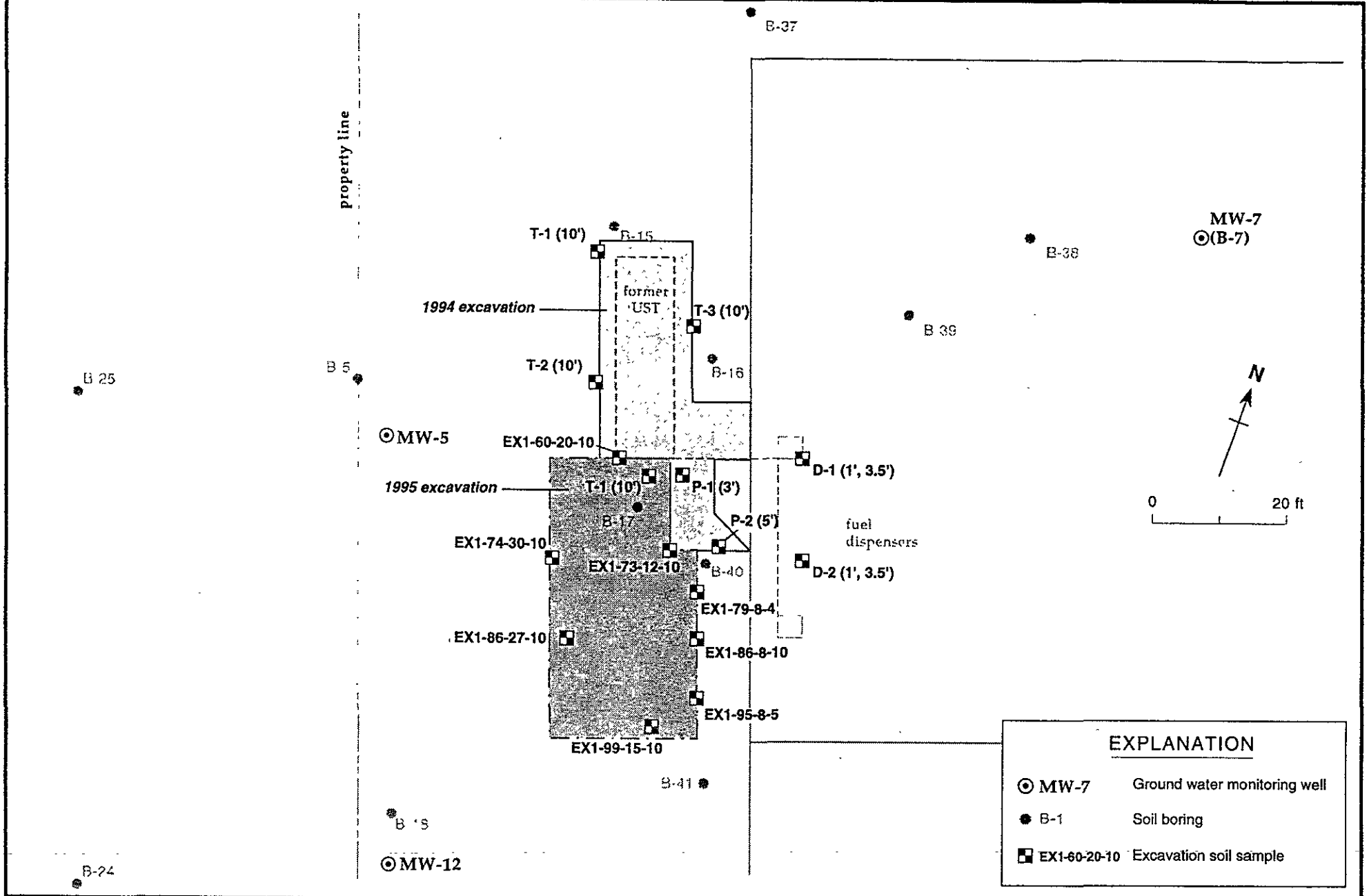

Figure 3. Soil Sample Locations - Former Northern Underground Fuel Tank (UST #1) - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

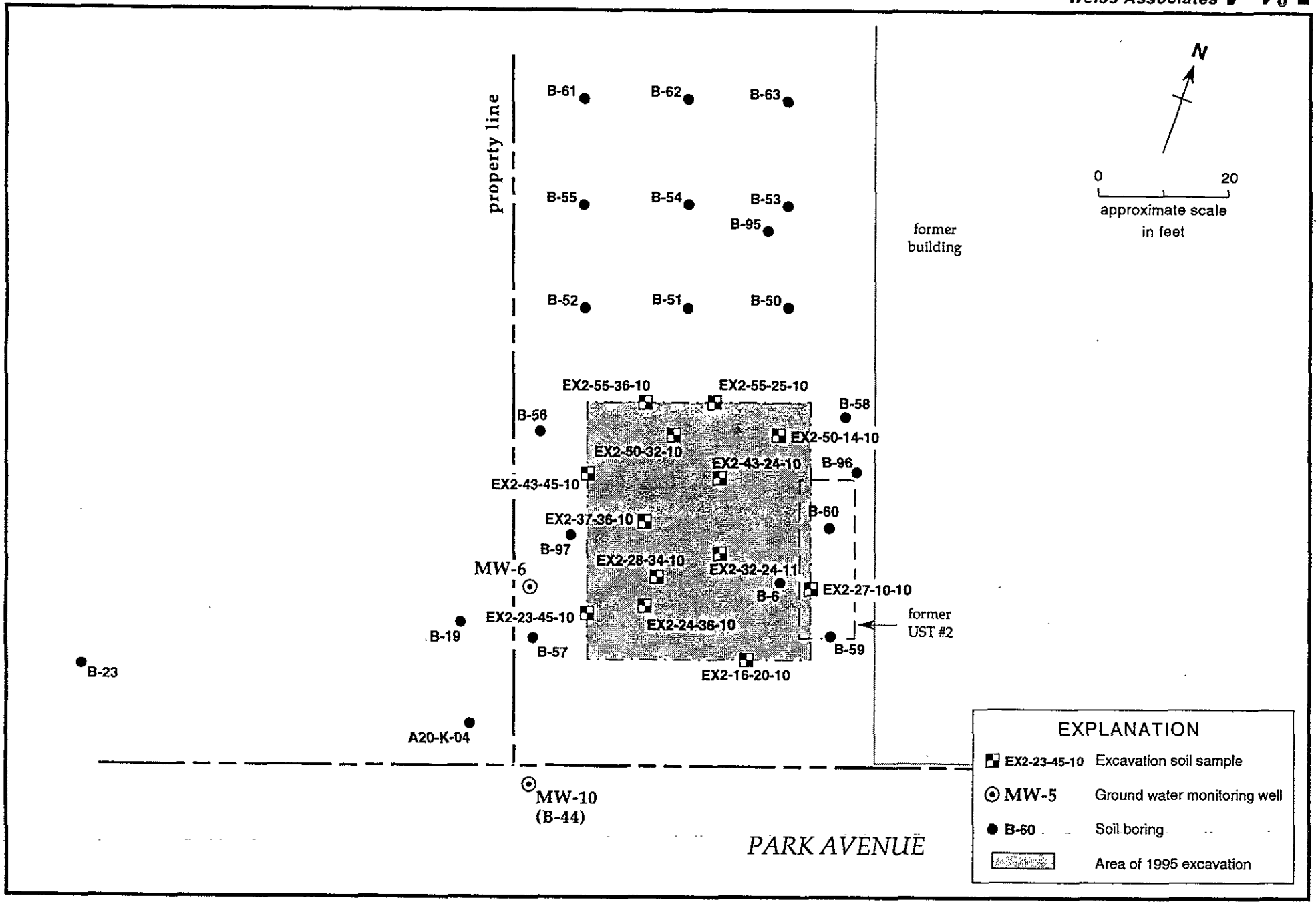

Figure 4. Soil Sample Locations - Former Southern Underground Storage Tank (UST #2) - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

TABLES

Table 1. Summary of Environmental Activities - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

Activity Date Completed	Result
UST #1 and #2 Installations 1958	The property's USTs may have been installed as early as when the beverage production facility was constructed.
UST #2 Removal March 1987	One 10,000-gallon diesel UST (UST #2) was removed from the southwest portion of the property. No TPH-D was detected in soil samples from beneath the tank. No notes are available about the condition of the UST upon its removal. The other UST (UST #1), which had previously stored gasoline, was converted for diesel storage.
UST #1 Decommissioning 1993	The remaining UST (UST #1) was decommissioned but not removed.
Subsurface Investigation October 1993	As part of a subsurface investigation for Del Monte Plant 35, CH_2M HILL drilled borings A20-K-04 and A20-K-05 on the Del Monte property across the property line from the New Century facility. Soil from boring A20-K-05, located about 100 ft southwest of remaining New Century UST #1, contained 110 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH-G) and ground water from the boring collected on the adjacent Del Monte property about 50 ft west of former UST #2 contained 220 ppm TPH-D. A grab ground water sample from the same boring contained 1,900 parts per billion (ppb) TPH-G.
Subsurface Investigation June-October 1994	WA drilled soil borings B-1 through B-48 and installed ground water monitoring wells MW-1 through MW-12 to: • Characterize soil and ground water around four onsite potential source areas--UST #1, former UST #2, a vehicle maintenance shop, and an above ground chemical storage area; • Assess if COCs from offsite sources were in ground water beneath the site; and • Determine the extent of subsurface COCs that were associated with potential source areas. Four areas of petroleum hydrocarbon-impacted ground water were identified: • Gasoline constituents were detected at and downgradient (southwest) of the gasoline UST #1; • Diesel constituents were detected at and downgradient of the former diesel UST #2; • Gasoline and diesel constituents were detected beneath the northeastern portion of the property, which is downgradient of an UST on the adjacent Emeryville Fire Department property, a former UST at the former Oliver Rubber Company and a reported subsurface fuel release at the United States Post Office; and

Table 1. Summary of Environmental Activities - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California (Continued)

Activity *Date Completed*	Result
Subsurface Investigation June-October 1994 (continued)	• Low concentrations of gasoline constituents were detected beneath the southeastern corner of the property, which is adjacent to a former gasoline service station at the Corner Site restaurant. Except for only 0.007 ppm in one sample, no benzene was detected in unsaturated soil, but a maximum of 1,800 ppb benzene was detected in ground water.
UST #1 Removal July 1994	WA coordinated the removal of remaining UST #1 and the associated product piping and dispenser. No holes were noted in the tank and up to 170 ppm TPH-G was detected in soil beneath the tank. Soil from beneath the dispensers contained up to 1,300 ppm TPH-G, 22,000 total petroleum hydrocarbons as diesel (TPH-D) and 0.51 ppm benzene.
Hydraulic Tests October 1994	WA conducted slug tests on wells MW-5, MW-6, MW-10, MW-11 and MW-12 to estimate the hydraulic conductivity of sediments beneath the site. Based on the test results, hydraulic conductivities ranged between 0.01 and 0.00002 ft per minute.
Remedial Action Plan Submittal January 1995	WA completed a remedial action plan (RAP). The RAP evaluated possible remedial alternatives and selected soil excavation and continued ground water monitoring as the most appropriate option for the site.
Soil Excavation October 1995	As proposed in the RAP, WA excavated hydrocarbon-bearing soil from the areas surrounding each former underground fuel tank to remove the hydrocarbon source in the vadose zone. Vadose zone soil was removed from near the northern and southern underground fuel tank (USTs #1 and #2), respectively, and the soil was disposed offsite (Figures 3 and 4). Confirmation soil samples from the former northern tank (UST #1) excavation indicated that most of the soil containing hydrocarbons was removed, except for residual hydrocarbons in soil that was inaccessible due to the presence of the adjacent, former building (Appendix A). After conducting some excavation near the former UST #2, WA determined that it would be cost-effective to cease the excavation and further characterize the soil around this source area.
Soil Characterization November 1995	WA drilled soil borings B-50 through B-63 to further characterize soil around the former southern fuel tank UST #2. The analytic results for the borings indicate that over 100 ppm TPH-D remains in soil north and west of the final excavation limit. Almost no BETX were detected in soil samples from the 14 borings.
Ground Water Sampling March 1996	First quarter 1996 ground water monitoring was calculated in March. The ground water sample from well MW-14 was reanalyzed to correct for laboratory analysis errors in May 1996. MW-5, MW-6, MW-12, and MW-13 were also resampled.
Facility Closing April 1996	New Century closed the facility for the upcoming demolition of the site structures.

Table 1. Summary of Environmental Activities - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California (Continued)

Activity Date Completed	Result
Site Demolition Sampling May 1996	Prior to demolition, WA collected soil samples from borings B-64 through B-95 at selected locations to characterize soil for the demolition contractor. Samples were analyzed for petroleum hydrocarbons, HVOCs, metals and PAHs.
PAH Sampling June-July 1996	In addition to the routine quarterly monitoring of the site wells, water samples from wells MW-5, MW-6, and MW-13 were analyzed for PAHs. Low concentrations of non-carcinogenic PAHs were detected. Upgradient wells MW-1 and MW-2 were sampled for PAHs to determine if onsite PAHs in ground water were from an offsite source. No PAHs were detected in ground water. Borings B-96 and B-97 were drilled near former UST #2 to analyze surface and subsurface soil for PAHs and VOCs. None were detected.

Table 2. **Future Construction Receptors** - Comparison of **BETX** Concentrations to Tier 1 Risk-Based Screening Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California.

Source Medium	Exposure Pathway	Potentially Complete Pathway?	Benzene		Ethylbenzene		Toluene		Xylenes	
			Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[c]	Maximum Detected Concentration[a]	RBSL[c]	Maximum Detected Concentration[a]	RBSL[c]
Soil (mg/kg)	Volatilization to Outdoor Air	Yes	1.7 *B-40, 10 ft 10/10/94*	16.6	21 *D-2, 3.5 ft 8/05/94*	RES	21 *D-2, 3.5 ft 8/05/94*	RES	100 *D-2, 3.5 ft 8/05/94*	RES
	Vapor Intrusion to Buildings	No	1.7 *B-40, 10 ft 10/10/94*	0.4	21 *D-2, 3.5 ft 8/05/94*	13,750	21 *D-2, 3.5 ft 8/05/94*	681	100 *D-2, 3.5 ft 8/05/94*	RES
	Ingestion/Dermal/Inhalation	Yes	1.7 *B-40, 10 ft 10/10/94*	354	21 *D-2, 3.5 ft 8/05/94*	137,200	21 *D-2, 3.5 ft 8/05/94*	230,700	100 *D-2, 3.5 ft 8/05/94*	RES
	Leachate to Ground Water for Ingestion	No	1.7 *B-40, 10 ft 10/10/94*	2.1	21 *D-2, 3.5 ft 8/05/94*	20,125	21 *D-2, 3.5 ft 8/05/94*	4,513	100 *D-2, 3.5 ft 8/05/94*	RES
Ground Water (mg/l)	Volatilization to Outdoor Air	Yes	1.7 *MW-13 12/20/95*	667.5	0.67 *MW-13 6/25/96*	>S	0.018 *MW-12 12/20/95*	>S	0.50 *MW-12 12/20/95*	>S
	Vapor Intrusion to Buildings	No	1.7 *MW-13 12/20/95*	2.6	0.67 *MW-13 6/25/96*	>S	0.018 *MW-12 12/20/95*	>S	0.50 *MW-12 12/20/95*	>S
	Ingestion	No	1.7 *MW-13 12/20/95*	0.36	0.67 *MW-13 6/25/96*	128	0.018 *MW-12 12/20/95*	255	0.50 *MW-12 12/20/95*	>S

Notes:

RBSL = ASTM RBCA Tier 1 Risk-Based Screening Level

RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.

>S = At pure compound solubility (mg/l), selected risk level is not exceeded.

a = Location and date of sample indicated. Concentrations for ground water are the highest detected onsite during the most recent four quarters of ground water sampling (December 1995 - September 1996).

b = The RBSLs used for benzene are based on a carcinogenic risk of 1 in 100,000 (10^{-5}) and California Department of Health Services' standard cancer slope factor of 0.1 mg/kg-day.

c = The RBSLs used for non-carcinogenic compounds are based on a chronic hazard quotient of 1.0.

Table 3. **Future Construction Receptors** - Comparison of **PAH** Concentrations to Tier 1 Risk-Based Screening Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California.

Source Medium	Exposure Pathway	Potentially Complete Pathway?	Naphthalene		Fluoranthene		Fluorene		Pyrene	
			Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]
Soil (mg/kg)	Volatilization to Outdoor Air	Yes	<20	RES	<1.0	NC	<2.0	NC	<1.0	NC
	Vapor Intrusion to Buildings	No	<20	1,338	<1.0	NC	<2.0	NC	<1.0	NC
	Ingestion/Dermal/Inhalation	Yes ✓	<20	17,100	<1.0	NC	<2.0	NC	<1.0	NC
	Leachate to Ground Water for Ingestion	No	<20	803	<1.0	NC	<2.0	NC	<1.0	NC
Ground Water (mg/l)	Volatilization to Outdoor Air	Yes	0.0041 *MW-13 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S	0.0034 *MW-5 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S
	Vapor Intrusion to Buildings	No	0.0041 *MW-13 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S	0.0034 *MW-5 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S
	Ingestion	No	0.0041 *MW-13 6/25/96*	5.1	0.0005 *MW-5 6/25/96*	50	0.0034 *MW-5 6/25/96*	50	0.0005 *MW-5 6/25/96*	>S

Notes:

PAH = Polynuclear Aromatic Hydrocarbon
RBSL = ASTM RBCA Tier 1 Risk-Based Screening Level
RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.
<n = Not detected above laboratory mehtod detection omit of n mg/kg
NC = Not calculated
>S = *At pure compound solubility (mg/l), selected risk level is not exceeded.*
a = Location and date of sample indicated. Concentrations for ground water are the highest detected onsite.
b = The RBSLs used for non-carcinogenic compounds are based on a chronic hazard quotient of 1.0.

Table 4. **Future Commercial/Industrial Receptors** - Comparison of **BETX** Concentrations to Tier 1 Risk-Based Screening Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California.

Source Medium	Exposure Pathway	Potentially Complete Pathway?	Benzene		Ethylbenzene		Toluene		Xylenes	
			Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[c]	Maximum Detected Concentration[a]	RBSL[c]	Maximum Detected Concentration[a]	RBSL[c]
Soil (mg/kg)	Volatilization to Outdoor Air	Yes	1.7 *B-40, 10 ft 10/10/94*	1.33	21 *D-2, 3.5 ft 8/05/94*	RES	21 *D-2, 3.5 ft 8/05/94*	RES	100 *D-2, 3.5 ft 8/05/94*	RES
	Vapor Intrusion to Buildings	Yes	1.7 *B-40, 10 ft 10/10/94*	0.032	21 *D-2, 3.5 ft 8/05/94*	1,100	21 *D-2, 3.5 ft 8/05/94*	54.5	100 *D-2, 3.5 ft 8/05/94*	RES
	Surficial Soil (0-3 ft depth): Ingestion/Dermal/Inhalation	Yes	0.08 *D-2, 1.0 ft 7/19/94*	29	0.94 *D-2, 1.0 ft 7/19/94*	11,500	1.1 *D-2, 1.0 ft 7/19/94*	18,700	5.2 *D-2, 1.0 ft 7/19/94*	208,000
	Leachate to Ground Water for Ingestion	No	1.7 *B-40, 10 ft 10/10/94*	0.17	21 *D-2, 3.5 ft 8/05/94*	1,610	21 *D-2, 3.5 ft 8/05/94*	361	100 *D-2, 3.5 ft 8/05/94*	RES
Ground Water (mg/l)	Volatilization to Outdoor Air	Yes	1.7 *MW-13 12/20/95*	53.4	0.67 *MW-13 6/25/96*	>S	0.018 *MW-12 12/20/95*	>S	0.50 *MW-12 12/20/95*	>S
	Vapor Intrusion to Buildings	Yes	1.7 *MW-13 12/20/95*	0.21	0.67 *MW-13 6/25/96*	>S	0.018 *MW-12 12/20/95*	85	0.50 *MW-12 12/20/95*	>S
	Ingestion	No	1.7 *MW-13 12/20/95*	0.029	0.67 *MW-13 6/25/96*	10.2	0.018 *MW-12 12/20/95*	20.4	0.50 *MW-12 12/20/95*	>S

Notes:

RBSL = ASTM RBCA Tier 1 Risk-Based Screening Level
RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.
>S = At pure compound solubility (mg/l), selected risk level is not exceeded.
a = Location and date of sample indicated. Concentrations for ground water are the highest detected onsite during the most recent four quarters of ground water sampling (December 1995 - September 1996).
b = The RBSLs used for benzene are based on a carcinogenic risk of 1 in 100,000 (10^{-5}) and California Department of Health Services' standard cancer slope factor of 0.1 mg/kg-day.
c = The RBSLs used for non-carcinogenic compounds are based on a chronic hazard quotient of 1.0.

Table 5. **Future Commercial/Industrial Receptors** - Comparison of **PAH** Concentrations to Tier 1 Risk-Based Screening Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California (continued).

Source Medium	Exposure Pathway	Potentially Complete Pathway?	Naphthalene		Fluoranthene		Fluorene		Pyrene	
			Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]
Soil (mg/kg)	Volatilization to Outdoor Air	Yes	<20	RES	<1.0	NC	<2.0	NC	<1.0	NC
	Vapor Intrusion to Buildings	Yes	<20	107	<1.0	NC	<2.0	NC	<1.0	NC
	Surficial Soil (0-3 ft depth): Ingestion/Dermal/Inhalation	Yes	<20	1,900	<1.0	NC	<2.0	NC	<1.0	NC
	Leachate to Ground Water for Ingestion	No	<20	64.2	<1.0	NC	<2.0	NC	<1.0	NC
Ground Water (mg/l)	Volatilization to Outdoor Air	Yes	0.0041 *MW-13 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S	0.0034 *MW-5 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S
	Vapor Intrusion to Buildings	Yes	0.0041 *MW-13 6/25/96*	12.3	0.0005 *MW-5 6/25/96*	9.7	0.0034 *MW-5 6/25/96*	>S	0.0005 *MW-5 6/25/96*	>S
	Ingestion	No	0.0041 *MW-13 6/25/96*	0.409	0.0005 *MW-5 6/25/96*	4.09	0.0034 *MW-5 6/25/96*	4.09	0.0005 *MW-5 6/25/96*	3.07

Notes:

PAH = Polynuclear Aromatic Hydrocarbon
RBSL = ASTM RBCA Tier 1 Risk-Based Screening Level
NC = Not calculated
<n = Not detected above laboratory mehtod detection omit of n mg/kg
RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.
>S = At pure compound solubility (mg/l), selected risk level is not exceeded.
a = Location and date of sample indicated. Concentrations for ground water are the highest detected onsite.
b = The RBSLs used for non-carcinogenic compounds are based on a chronic hazard quotient of 1.0.

Table 6. **Future Residential Receptors** - Comparison of **BETX** Concentrations to Tier 1 Risk-Based Screening Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

Source Medium	Exposure Pathway	Potentially Complete Pathway?	Benzene		Ethylbenzene		Toluene		Xylenes	
			Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[c]	Maximum Detected Concentration[a]	RBSL[c]	Maximum Detected Concentration[a]	RBSL[c]
Soil (mg/kg)	Volatilization to Outdoor Air	No	1.7 *B-40, 10 ft 10/10/94*	0.79	21 *D-2, 3.5 ft 8/05/94*	RES	21 *D-2, 3.5 ft 8/05/94*	RES	100 *D-2, 3.5 ft 8/05/94*	RES
	Vapor Intrusion to Buildings	No	1.7 *B-40, 10 ft 10/10/94*	0.016	21 *D-2, 3.5 ft 8/05/94*	427	21 *D-2, 3.5 ft 8/05/94*	20.6	100 *D-2, 3.5 ft 8/05/94*	RES
	Surficial Soil (0-3 ft depth): Ingestion/Dermal/Inhalation	No	0.08 *B-40, 10 ft 10/10/94*	17	0.94 *D-2, 1.0 ft 7/19/94*	7,830	1.1 *D-2, 1.0 ft 7/19/94*	13,300	5.2 *D-2, 1.0 ft 7/19/94*	1,450,000
	Leachate to Ground Water for Ingestion	Yes	**1.7** *B-40, 10 ft 10/10/94*	**0.050**	21 *D-2, 3.5 ft 8/05/94*	575	21 *D-2, 3.5 ft 8/05/94*	129	100 *D-2, 3.5 ft 8/05/94*	RES
Ground Water (mg/l)	Volatilization to Outdoor Air	No	1.7 *MW-13 12/20/95*	31.9	0.67 *MW-13 6/25/96*	>S	0.018 *MW-12 12/20/95*	>S	0.50 *MW-12 12/20/95*	>S
	Vapor Intrusion to Buildings	No	1.7 *MW-13 12/20/95*	0.069	0.67 *MW-13 6/25/96*	77.5	0.018 *MW-12 12/20/95*	32.8	0.50 *MW-12 12/20/95*	>S
	Ingestion	Yes	**1.7** *MW-13 12/20/95*	**0.0085**	0.67 *MW-13 6/25/96*	3.65	0.018 *MW-12 12/20/95*	7.30	0.50 *MW-12 12/20/95*	73

Notes:

RBSL = ASTM RBCA Tier 1 Risk-Based Screening Level
RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.
>S = At pure compound solubility (mg/l), selected risk level is not exceeded.
a = Location and date of sample indicated. Concentrations for ground water are the highest detected onsite during the most recent four quarters of ground water sampling (December 1995 - September 1996).
b = The RBSLs used for benzene are based on a carcinogenic risk of 1 in 100,000 (10^{-5}) and California Department of Health Services' standard cancer slope factor of 0.1 mg/kg-day.
c = The RBSLs used for non-carcinogenic compounds are based on a chronic hazard quotient of 1.0.

Table 7. **Future Residential Receptors** - Comparison of **PAH** Concentrations to Tier 1 Risk-Based Screening Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

Source Medium	Exposure Pathway	Potentially Complete Pathway?	Naphthalene		Fluoranthene		Fluorene		Pyrene	
			Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]	Maximum Detected Concentration[a]	RBSL[b]
Soil (mg/kg)	*Volatilization to Outdoor Air*	No	<20	RES	<1.0	NC	<2.0	NC	<1.0	NC
	Vapor Intrusion to Buildings	No	<20	40.7	<1.0	NC	<2.0	NC	<1.0	NC
	Surficial Soil (0-3 ft depth). Ingestion/Dermal/Inhalation	No	<20	977	<1.0	NC	<2.0	NC	<1.0	NC
	Leachate to Ground Water for Ingestion	Yes	<20	22.9	<1.0	NC	<2.0	NC	<1.0	NC
Ground Water (mg/l)	Volatilization to Outdoor Air	No	0.0041 *MW-13 6/25/96*	>S	0.0005 *MW-5 6/25/96*	NC	0.0034 *MW-5 6/25/96*	NC	0.0005 *MW-5 6/25/96*	NC
	Vapor Intrusion to Buildings	No	0.0041 *MW-13 6/25/96*	4.74	0.0005 *MW-5 6/25/96*	NC	0.0034 *MW-5 6/25/96*	NC	0.0005 *MW-5 6/25/96*	NC
	Ingestion	Yes	0.0041 *MW-13 6/25/96*	0.146	0.0005 *MW-5 6/25/96*	1.46	0.0034 *MW-5 6/25/96*	1.46	0.0005 *MW-5 6/25/96*	1.10

Notes:

PAH = *Polynuclear Aromatic Hydrocarbon*
RBSL = ASTM RBCA Tier 1 Risk-Based Screening Level
NC = Not Calculated
<n = Not detected above laboratory mehtod detection limit of **n** mg/kg
RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.
>S = At pure compound solubility (mg/l), selected risk level is not exceeded.
a = Location and date of sample indicated. Concentrations for ground water are the highest detected onsite.
b = The RBSLs used for non-carcinogenic compounds are based on a chronic hazard quotient of 1.0.

Table 8. Comparison of Maximum **Benzene** Concentrations to Tier 2 Site-Specific Target Levels - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California.

Source Medium	Receptor Scenario	Exposure Pathway	Benzene	
			Maximum Detected Concentration[a]	Site-Specific Target Level[b]
Soil (mg/kg)	Commercial/ Industrial	Volatilization to Outdoor Air	1.7 *B-40, 10 ft 10/10/94*	119
	Commercial/ Industrial	Volatilization to Indoor Air	1.7 *B-40, 10 ft 10/10/94*	2.82
	Residential	Leachate to Ground Water for Ingestion	1.7 *B-40, 10 ft 10/10/94*	RES
Ground Water (mg/l)	Commercial/ *Industrial*	Volatilization to Indoor Air	1.7 *MW-13 12/20/95*	2.09
	Residential	Ingestion	1.7 *MW-13 12/20/95*	>S

Notes:

RES = Selected risk level is not exceeded for pure compound present at any concentration in soil.

>S = At pure compound solubility (mg/l), selected risk level is not exceeded.

a = *Location and date of sample* indicated. Concentrations for ground water are the highest detected onsite during the most recent four quarters of ground water sampling (December 1995 - September 1996).

b = Site-specific target levels are based on a carcinogenic risk of 1 in 100,000 (10^{-5}) and California Department of Health Services' cancer slope factor of 0.1 mg/kg-day.

Table 9. Proposed Cleanup Goals - Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, California

Chemical of Concern	Proposed Cleanup Goal Soil (mg/kg)	Ground Water (mg/L)
Benzene	2.82	2.09
Ethylbenzene	575	3.65
Toluene	54.5	7.3
Xylenes	208,000	73
Naphthalene	22.9	0.146
Fluorene	NC	1.46
Fluoranthene	NC	1.46
Pyrene	NC	1.10

Notes:

NC = Not Calculated

APPENDIX A

ANALYTIC RESULTS FOR SOIL

Soil

Soil samples from A20-K-04 and A20-K-05 were collected from drill cuttings as a result of organic vapor field equipment readings. Depths to samples were approximated based on auger position. TEPH analysis for those soil samples was run after hold time had expired. During resampling due to laboratory method holding time expirations, soil samples were collected from continuous cores based on highest organic vapor meter readings. Analytical results of soil samples are shown on Table 8.

Table 8
Results of Soil Analysis, Eastern Property Boundary
Del Monte Plant 35, Emeryville, California

Sample Identification	Analyte					
	Gasoline (mg/kg)	Ethyl Benzene (mg/kg)	Xylenes (mg/kg)	Diesel (mg/kg)	TRPH (mg/kg)	1,1,1-TCA (mg/kg)
A20-K-04-7.0	1.6	<0.005	<0.005	35	116	0.0071
A20-K-04R-9.0,9.0(d)	2.5 (3.1)	0.0063	0.0093	220 (220)	NA	NA
A20-K-05	110	0.037	0.340	<1.0	<10	0.008
A20-K-05R	NA	NA	NA	<1.0	NA	NA

SAMPLE DATE 10/28/93

Notes:

[a] <0.005 indicates that the laboratory detection limit was not exceeded.
[b] Shading indicated that the laboratory holding time was exceeded.
[c] All samples were analyzed for Gas/BTEX, TEPH and Chlorinated hydrocarbons.
[d] NA = Not Analyzed

Table 4. Analytic Results of Soil Samples Collected During Underground Tank Removal, New Century Beverage Company, 1150 Park Avenue, Emeryville, California

Sample ID	Depth (ft)	Date Sampled	Sat/ Unsat	Analyte: EPA Method:	TVH-G 8015	TEH 8015	B 8020	E 8020	T 8020	X 8020	Lead 7420
					<----------parts per million (mg\kg)---------->						
Tank Excavation Samples											
T-1	10.0	07/19/94	Sat		<1	15[a]	0.059	0.009	<0.005	0.019	---
T-2	10.0	07/19/94	Sat		2.0	4.0	<0.005	0.007	<0.005	0.038	---
T-3	10.0	07/19/94	Sat		5.0	9.0	0.14	0.015	0.19	0.87	---
T-4	10.0	07/19/94	Sat		170	74.0	0.14[b]	1.9	0.46	5.9	---
Dispenser Samples											
D-1	1.0	07/19/94	Unsat		180	22,000	<0.04	0.28	0.18	4.1	---
D-1	4.0	08/05/94	Unsat		1.0	<1.0	<0.005	<0.005	0.008	0.007	---
D-2	1.0	07/19/94	Unsat		210	11,000	0.08	0.94	1.1	5.2	---
D-2	3.5	08/05/94	Unsat		1,300	150	0.51	21.0	21.0	100	---
Product Line samples											
P-1	3.0	07/21/94	Unsat		120	110	<0.07	0.39	0.35	1.6	13
P-2	5.0	08/05/94	Unsat		170	6.0	0.23[b]	2.8	0.29	10.0	---
Stockpiled Soil Composites											
SP-1		07/20/94			25	950	<0.005	0.026[b]	<0.005	0.12	<5.0
SP-2		07/20/94			2.0	100	<0.005	<0.005	<0.005	0.010	<5.0
SP-3		07/20/94			17	350	<0.005	0.017	<0.005	0.069	<5.0

Abbreviations:

Sat/Unsat = Saturated or unsaturated in-place soil sample
TVH-G = Total Volatile Hydrocarbons as Gasoline
TEH = Total Extractable Hydrocarbons - reported as diesel unless noted
B = Benzene
E = Ethylbenzene
T = Toluene
X = Xylenes
<n = Not detected at a detection limit of n ppm
--- = Not analyzed

Notes:

All laboratory analyses completed by Curtis & Tompkins, Ltd., of Berkeley, CA, DHS Certification #1459

a = Reported as Kerosene - Diesel range not reported due to overlap of hydrocarbon ranges
b = Presence of this compound confirmed by second column; however, the confirmation concentration differed from the reported result by more than a factor of two.

Table 1. Analytic Results of Soil Samples Collected During Remedial Soil Excavation, New Century Beverage Company, 1150 Park Avenue, Emeryville, California

Sample ID	Depth (ft)	Date Sampled	Analyte: EPA Method:	TVH-G 8015	TEH 8015	B 8020	E 8020	T 8020	X 8020
				<----------parts per million (mg\kg)---------->					
Excavation 1 Samples									
EX1-60-20-10	10	10/24/95		3	11[c]	0.017	0.032	0.006	0.077
EX1-74-30-10	10	10/24/95		1	6[d]	<0.005	0.008	<0.005	<0.005
EX1-86-8-10	10	10/24/95		13	<1	0.065	0.110	0.051	0.240
EX1-86-27-10	10	10/24/95		11	19[c]	0.040	0.230	0.038	0.200
EX1-99-15-10	10	10/24/95		16	18[c]	<0.005	0.210	0.058	0.222
EX1-73-12-10	10	10/24/95		3	20	0.031	0.037	0.008	0.036
EX1-95-8-5	5	10/24/95		<1	23[d]	<0.005	<0.005	<0.005	<0.005
EX1-79-8-4	4	10/24/95		1	49[d]	<0.005	0.006	<0.005	0.010
Excavation 2 Samples									
EX2-43-24-10	10	10/25/95		22	2,500	<0.005	0.052	0.060	0.32
EX2-27-10-10	10	10/25/95		11	580[a]	<0.005	0.029	0.019	0.14
EX2-28-34-10	10	10/25/95		10	1,200	<0.005	0.028	0.016	0.13
EX2-16-20-10	10	10/25/95		<1	2	<0.005	<0.005	<0.005	<0.005
EX2-50-32-10	10	10/26/95		<1	28	<0.005	<0.005	<0.005	<0.005
EX2-24-36-10	10	10/26/95		2	190	<0.005	<0.005	<0.005	0.009
EX2-50-14-10	10	10/26/95		8	970	<0.005	0.017	0.007	0.10
EX2-37-36-10	10	10/26/95		2	210	<0.005	0.006	0.005	0.027
EX2-32-24-11	11	10/26/95		1	91	<0.005	<0.005	<0.005	0.009
EX2-23-45-10	10	11/15/95		17	1,200	<0.005	<0.005	<0.005	<0.005
EX2-43-45-10	10	11/15/95		18	1,500	<0.005	<0.005	<0.005	<0.005
EX2-55-36-10	10	11/15/95		17	3,000	<0.005	<0.005	<0.005	<0.005
EX2-55-25-10	10	11/15/95		43	1,300	<0.013	<0.013	<0.013	0.044

Table 1. Analytic Results of Soil Samples Collected During Remedial Soil Excavation, New Century Beverage Company, 1150 Park Avenue, Emeryville, California, continued

Abbreviations:

Sat/Unsat = Saturated or unsaturated in-place soil sample
TVH-G = Total Volatile Hydrocarbons as Gasoline
TEH = Total Extractable Hydrocarbons - reported as diesel from C-10 to C-42 unless noted
B = Benzene
E = Ethylbenzene
T = Toluene
X = Xylenes
<n = Not detected at a detection limit of **n** ppm
--- = Not analyzed

Notes:

a = Laboratory Reported 160 ppm TPH-O, extractable petroleum hydrocarbons from C-20 to C-42 quantified as motor oil.
b = Sample exhibits pattern which does not resemble standard.
c = Sample does not match the typical diesel pattern. Sample appears to be jet fuel.
d = Unidentified hydrocarbons present in diesel and oil range; quantitations based on diesel.

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-1	6.4	3/15/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.9	3/15/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/15/94*		*0.2*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-2	6.0	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.5	3/16/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*0.0005*	*0.0005*	*ND*	*ND*	*ND*	*ND*
B-3	2.5	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND(0.03)	0.28	ND(0.03-0.1)
	7.5	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/15/94*		*0.52*	*ND*	*0.001*	*0.019*	*0.0084*	*0.046*	*ND*	*ND*	*ND*
B-4	5.0	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/15/94	Sat	ND	49 (K)	ND	ND	ND	ND	ND	ND	ND
	Water	*3/15/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-5	5.0	3/14/94	Unsat	ND	50 (D) 2,200 (MO)	ND	ND	ND	ND	ND	ND	ND
	7.5	3/14/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/14/94	Sat	ND	ND	0.015	ND	ND	0.012	ND	ND	ND
	Water	*3/14/94*		*0.95*	*15 (K)*	*0.18*	*ND(1)*	*ND(1)*	*0.088*	*ND*	*ND*	*ND*
B-6	5.0	3/14/94	Unsat	ND	4 (D) 37 (MO)	ND	ND	ND	ND	ND	ND	ND
	7.5	3/14/94	Unsat	10	230 (D) 1,200 (MO)	ND(0.03)	ND(0.03)	0.017	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/14/94*		*4.0*	*79 (D)* *730 (MO)*	*<5*	*<5*	*7*	*<5*	*ND*	*ND*	*0.001 c1,2-DCE*
B-7	8.5	3/16/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	13.5	3/16/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*0.06*	*ND*	*ND*	*0.002*	*ND*	*ND*	*ND*	*ND*	*ND*

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-8	5.0	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-9	5.0	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/17/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-10	*5.9*	*3/14/94*	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*15*	*3 (K)*	*0.34*	*0.031*	*0.64*	*1.9*	*ND(0.01)*	*ND(0.01)*	*ND(0.01-0.2)*
B-11	2.5	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/16/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*0.06*	*ND*	*ND*	*0.0008*	*ND*	*ND*	*ND*	*ND*	*ND*
B-12	7.5	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/17/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-13	2.5	3/16/94	Unsat	ND	2 (D)	ND	ND	ND	0.008	ND	0.005	0.05 MC 0.009 1,1-DCA 0.05 TCE
	7.5	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-14	2.5	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/16/94	Unsat	ND	ND	ND	ND	ND	0.007	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-15	2.5	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/17/94*		*0.07*	*1 (K)*	*0.0097*	*ND*	*0.0011*	*0.0076*	*ND*	*ND*	*ND*
B-16	5.0	3/18/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/18/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/18/94*		*38*	*15 (K)*	*0.57*	*0.28*	*1.5*	*5.4*	*ND*	*ND*	*ND*

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[redacted] 1. [redacted] for [redacted] and [redacted] bore [redacted] ate [redacted] ples [redacted] y Ce [redacted] Deve [redacted] CO., [redacted] Par [redacted] de, [redacted] yvill [redacted] ion [redacted] ornia

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-17	2.5	3/17/94	Unsat	1	2 (D) 50 (MO)	ND	ND	0.005	0.055	ND	ND	ND
	7.5	3/17/94	Unsat	130	190 (K)	ND(0.08)	0.19	1.2	1.4	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/17/94*		*32*	*6 (K)*	*1.8*	*0.78*	*1.1*	*2.4*	*ND*	*ND*	*0.001 CB*
B-18	8.4	3/14/94	Unsat	1	ND	ND	ND	ND	ND	ND	ND	ND
	13.4	3/14/94	Sat	1	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*0.65*	*ND*	*0.032*	*0.0006*	*0.0048*	*0.0038*	*0.003*	*ND*	*ND*
B-19	7.5	3/14/94	Unsat	23[a]	150 (D)	ND(0.01)	ND(0.01)	0.061	0.019	ND(0.1)	ND(0.1)	ND(0.1-0.5)
	12.5	3/14/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*ND*	*110 (D)*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-20	7.5	3/14/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/14/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-21	5.0	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/15/94	Sat	11	ND	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND	ND	ND
	Water	*3/15/94*		*0.14*	*ND*	*ND*	*ND*	*ND*	*0.0006*	*ND*	*ND*	*0.018 CB* *0.004 1,2-DCB*
B-22	5.0	3/18/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/18/94	Sat	130	340 (D)	0.07	0.98	0.07	0.25	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/18/94*		*6.0*	*220 (D)*	*0.06*	*0.02*	*0.03*	*0.06*	*ND*	*ND*	*ND*
B-23	10.0	3/30/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/30/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*TCE 0.004* *c-1,2-DCE 0.006* *VC 0.004*
B-24	9.0	3/18/94	Sat?	4	20 (K)	0.13	ND	0.045	0.19	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/18/94*		*22*	*2 (K)*	*1.8*	*0.03*	*0.52*	*1.9*	*0.004*	*ND*	*ND*

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-25	10.0	3/18/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/18/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/18/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-26	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*0.18*	*ND*	*0.0012*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-27	*Water*	*3/26/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-28	8.5	3/26/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/26/94*		*0.06*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-29	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*20*	*2 (K)*	*0.13*	*0.041*	*0.77*	*0.36*	*ND*	*ND*	*ND*
B-30	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.5	3/27/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-31	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.5	*3/27/94*	*Sat?*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
	Water	*3/27/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-32	8.5	3/26/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/26/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.001 c1,2-DCE*
B-33	8.5	3/26/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	11.5	3/26/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/26/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.003*	*0.005 TCE* *0.004 c1,2-DCE*
B-34	10.0	3/30/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/30/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*0.15*	*ND*	*0.001*	*0.01*	*0.003*	*0.019*	*ND*	*ND*	*ND*

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-35	10.0	3/30/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*TCE 0.002*
B-36	7.5	3/30/94	Unsat	ND	ND	ND	ND	ND	0.007	ND	ND	ND
	10.0	3/30/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*0.0005*	*ND*	*ND*	*ND*
B-37	8.5	3/27/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.002 1,1-DCE*
B-38	5.0	3/31/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/31/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/31/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
	Water[b]	*3/31/94*		*ND(0.01)*	*ND(0.01)*	*ND(0.0003)*	*ND(0.0003)*	*ND(0.0003)*	*ND* [*]	*ND*	*ND*	*ND*
B-39	7.5	3/31/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/31/94	Sat?	ND	ND	ND	ND	ND	0.01	ND	ND	ND
	Water	*3/31/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
	Water[b]	*3/31/94*		*ND(0.01)*	*ND(0.01)*	*ND(0.0003)*	*ND(0.0003)*	*ND(0.0003)*	*ND*	*ND*	*ND*	*ND*
B-40	5.0	10/10/94	Unsat	64	35(K)	0.098	0.28	0.74	1.2	—	—	—
	10.0	10/10/94	Sat?	390	100(K)	1.7	2.8	13	49	—	—	—
B-41	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
	10.0	10/10/94	Sat?	5	4(K)	0.011	0.012	0.013	ND	—	—	—
B-42	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
B-43	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
B-44	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
	9.0	10/10/94	Unsat?	ND	ND	ND	ND	ND	ND	—	—	—
	Water	*10/10/94*		*ND*	*ND(0.05)*[d]	*ND*	*ND*	*ND*	*ND*	—	—	—
B-45	*Water*	*10/10/94*		*ND*	*0.1(K)*[d]	*ND*	*ND*	*ND*	*ND*	—	—	—
	Water[b]	*10/10/94*		—	*ND(0.05)*[e]	—	—	—	—	—	—	—
B-46	*Water*	*10/10/94*		*ND*	*ND(0.05)*[d]	*ND*	*ND*	*ND*	*ND*	—	—	—

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-48	5.0	10/10/94	Unsat	3	1.8(K)	0.007	ND	ND	0.16	---	---	---
	10.0	10/10/94	Sat	470	52(K)	1.5	0.77	8	42	---	---	---
	Water	*10/10/94*		*0.17*	*0.13(K)*[d]	*0.003*	*ND*	*0.004*	*0.019*	---	---	---
	Water[b]	*10/10/94*		---	*ND(0.05)*	---	---	---	---	---	---	---
B-49	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	---	---	---
	10.0	10/10/94	Sat	ND	ND	ND	ND	ND	ND	---	---	---
	Water	*10/10/94*		*ND*	*0.069*[d]	*0.0007*	*ND*	*ND*	*0.0016*	---	---	---
Travel Blank	Water	3/27/94		ND	---	ND	ND	ND	ND	ND	ND	ND
	Water	3/31/94		---	---	ND	ND	ND	ND	ND	ND	ND
	Water	3/31/94		---	---	ND	ND	ND	ND	ND	ND	0.002 MC[c]
	Water	10/10/94		ND	---	ND	ND	ND	ND	---	---	---
Standard detection limit	Soil			1	1 (K,D) 30 (MO)	0.005	0.005	0.005	0.005	0.005	0.005	0.005-0.02
	Water			0.05	1 (K,D) 20 (MO)	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001-0.02
MCL						0.001	0.1[f]	0.68	1.75	0.0005	0.005	0.03 CB 0.005 1,1-DCA 0.13 1,2-DCB[f] 0.006 1,1-DCE 0.006 c1,2-DCE 0.005 MC 0.005 TCE 0.0005 VC

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Abbreviations:

Sat/Unsat = indicates whether soil sample was saturated with ground water
TVH-G = Total volatile hydrocarbons as gasoline detected by EPA Method 8015, modified per California Department of Health Services (DHS)
note: mineral spirits were also screened with this method, however, all detected TVH were characterized as gasoline
TEH = Total extractable hydrocarbons [kerosene (K), diesel (D), and motor oil (MO) range] detected by EPA Method 8015, modified by DHS
notes: hydraulic oil was also screened with this method, however, no hydraulic oil was reported in any samples
Kerosene-range compounds, where reported, are characterized by the laboratory as a fraction of gasoline hydrocarbons
HVOCs = Halogenated volatile organic compounds detected by EPA Method 8010
ND = Not detected at standard detection limit (indicated on the last row of the table)
ND(n) = Not detected at detection limit of n ppm, due to dilution of sample prior to analysis
--- = Not analyzed

MCL = Maximum Contaminant Level for Drinking Water established by the California Department of Toxic Substances Control

Notes:

Analyses performed by Curtis & Tompkins, Ltd. of Berkeley, CA except as noted (CA DHS certification # 1459)

[a] *Reported concentration falls in volatile range but does not match gasoline or mineral spirits fingerprint*

[b] Split duplicate analysis:
March 1994 splits performed by GTEL Environmental Laboratories, Inc. of Concord, CA (CA DHS certification # E1075)
October 1994 splits performed by Superior Precision Analytical Laboratories, Inc. of Martinez, CA (CA DHS certification #1542)

[c] Methylene chloride was also reported in the method blank at 0.0007 ppm - no methylene chloride was detected in the site ground water samples (methylene chloride is used during some laboratory procedures and is a common laboratory contaminant)

[d] Benzoic acid was reported as a single peak on the chromatogram. Since this is not a fuel compound, the laboratory calculated the TEH concentrations excluding the benzoic acid contribution, and issued a revised report showing these corrected concentrations. Both the revised and uncorrected analytic reports are included in Appendix C.

[e] A single peak on the chromatogram in the range of benzoic acid reportedly attributed to the detection of TEH above the detection limit. Since SPAL could not positively identify the compound at the peak, the report was not revised. However, the reported concentration may not be representative of field conditions since TEH is not detectable if the benzoic acid peak is discounted.

[f] *DTSC Recommended Action Level - no MCL established*

Table 4. Analytic Results for Soil Samples, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California - November 1995.

Boring ID	Boring Interval	Date Sampled	Unsaturated/ Saturated	TVPH-G	TEPH	Benzene	Toluene	Ethylbenzene	Xylenes
				<---------- Parts per million ---------->					
B50-5	4.25-5.0	11/30/95	Unsat.	<1	<1	<0.005	<0.005	<0.005	<0.005
B50-8	7.3-8.0	11/30/95	Unsat.	3	540(D)	<0.005	<0.005	<0.005	0.039
B50-10	*9.25-10.0*	*11/30/95*	*Sat.*	*7*	*490(D)*	*<0.005*	*<0.005*	*<0.005*	*0.11*
B51-5	4.3-5.0	11/30/95	Unsat.	<1	<1	<0.005	0.009	<0.005	0.006
B51-8	7.3-8.0	11/30/95	Unsat.	5	560(D)	<0.005	<0.005	<0.005	0.068
B51-10	*9.0-10.0*	*11/30/95*	*Sat.*	*6*	*480(D)*	*<0.005*	*<0.005*	*<0.005*	*0.079*
B52-5	4.65-5.0	11/30/95	Unsat.	<1	27(D)	<0.005	<0.005	<0.005	<0.005
B52-8	7.2-8.0	11/30/95	Unsat.	3	440(D)	<0.005	<0.005	<0.005	0.046
B52-10	*9.1-10.0*	*11/30/95*	*Sat.*	*12*	*110(D)*	*<0.005*	*<0.005*	*<0.005*	*0.16*
B53-5	4.25-5.0	11/30/95	Unsat.	<1	1.4(D)	<0.005	<0.005	<0.005	<0.005
B53-7	6.6-7.0	11/30/95	Unsat.	<1	1(D)	<0.005	<0.005	<0.005	<0.005
B53-10	*9.15-10.0*	*11/30/95*	*Sat.*	*5*	*9,800(D)*	*<0.005*	*<0.005*	*<0.005*	*0.056*
B54-5	4.35-5.0	11/30/95	Unsat.	<1	<1	<0.005	<0.005	<0.005	<0.005
B54-8	7.35-8.0	11/30/95	Unsat.	<1	16(D)	<0.005	<0.005	<0.005	<0.005
B54-10	*9.35-10.0*	*11/30/95*	*Sat.*	*6*	*13,000(D)*	*<0.005*	*<0.005*	*<0.005*	*0.089*
B55-5	4.4-5.0	11/30/95	Unsat.	<1	2.1(D)	<0.005	<0.005	<0.005	<0.005
B55-8	7.4-83.0	11/30/95	Unsat.	<1	120(D)	<0.005	0.009	<0.005	0.010
B55-10	*9.35-10.0*	*11/30/95*	*Sat.*	*8*	*1,500(D)*	*<0.005*	*<0.005*	*<0.005*	*0.12*
B56-5	NR	11/30/95	Unsat.	---	---	---	---	---	---
B56-8	7.35-8.0	11/30/95	Unsat.	2	510(D)	<0.005	<0.005	<0.005	<0.005
B56-10	*9.4-10.0*	*11/30/95*	*Sat.*	*3*	*880(D)*	*<0.005*	*<0.005*	*<0.005*	*0.044*
B57-5	4.45-5.0	11/30/95	Unsat.	<1	1.2(D)	<0.005	<0.005	<0.005	<0.005
B57-8	7.3-8.0	11/30/95	Unsat.	<1	140(D)	<0.005	<0.005	<0.005	<0.005
B57-10	*9.4-10.0*	*11/30/95*	*Sat.*	*5*	*1,100(D)*	*<0.005*	*<0.005*	*<0.005*	*0.064*
B58-5	4.2-5.0	11/30/95	Unsat.	3	830(D)	<0.005	<0.005	<0.005	0.041
B58-8	7.35-8.0	11/30/95	Unsat.	4	1,300(D)	<0.005	<0.005	<0.005	0.048
B58-10	*9.3-10.0*	*11/30/95*	*Sat.*	*7*	*980(D)*	*<0.005*	*0.007*	*0.031*	*0.09*
B59-5	4.4-5.0	11/30/95	Unsat.	<1	1.4(D)	<0.005	<0.005	<0.005	<0.005
B59-8	7.3-8.0	11/30/95	Unsat.	<1	<1	<0.005	<0.005	<0.005	<0.005
B59-10	*9.3-10.0*	*11/30/95*	*Sat.*	*<1*	*<1*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
B60-5	NR	11/30/95	Unsat.	---	---	---	---	---	---
B60-8	7.6-8.0	11/30/95	Unsat.	<1	95(D)	<0.005	<0.005	<0.005	<0.005
B60-10	*9.5-10.0*	*11/30/95*	*Sat.*	*2*	*1,400(D)*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
B61-5	4.25-5.0	11/30/95	Unsat.	<1	1.8(D)	<0.005	<0.005	<0.005	<0.005
B61-8	7.35-8.0	11/30/95	Unsat.	<1	3.2(D)	<0.005	<0.005	<0.005	<0.005
B61-10	*9.3-10.0*	*11/30/95*	*Sat.*	*21*	*300(D)*	*0.12*	*0.031*	*<0.005*	*0.14*

Table 4. Analytic Results for Soil Samples, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California - November 1995.

Boring ID	Boring Interval	Date Sampled	Unsaturated/ Saturated	TVPH-G	TEPH	Benzene	Toluene	Ethylbenzene	Xylenes
				<---------- Parts per million ---------->					
B62-5	4.45-5.0	11/30/95	Unsat.	<1	**1.2(D)**	<0.005	<0.005	<0.005	<0.005
B62-7	6.55-8.0	11/30/95	Unsat.	<1	**1.6(D)**	<0.005	<0.005	<0.005	<0.005
B62-10	*9.2-10.0*	*11/30/95*	*Sat.*	*5*	***560(D)***	*<0.005*	*<0.005*	*<0.005*	***0.061***
B63-3	3.2-3.8	11/30/95	Unsat.	<1	**1.9(D)**	<0.005	<0.005	<0.005	<0.005
B63-8	7.2-8.0	11/30/95	Unsat.	<1	<1	**0.009**	**0.04**	**0.007**	**0.033**
B63-10	*9.3-10.0*	*11/30/95*	*Sat.*	*<1*	***1.1(D)***	*<0.005*	*<0.005*	*<0.005*	*<0.005*
MCL						0.001	0.1*	0.68	

Abbreviations:

Sat/Usat = Indicates whether or not sample was saturated with ground water.
TVPH-G = Total volatile petroleum hydrocarbons as gasoline detected by EPA Method 8015, modified per California Department of Health Services (DHS). Note: Mineral spirits were also screened with this method, however, all detected TVPH were characterized as gasoline.
TEPH = Total extractable petroleum hydrocarbons [kerosene (K), diesel (D), and motor oil (MO) range] detected by EPA Method 8015, modified by DHS. Note. Hydraulic oil was also screened with this method, however, no hydraulic oil was reported in any samples.
NR = No recovery at time of sampling
--- = Not analyzed

MCL = California Maximum Contaminant Level for Drinking Water established by the California Department of Toxic Substances Control (DTSC)

Notes:

Analyses performed by Superior Analytical Laboratory of Martinez, California
*DTSC Recommended Action Level - no MCL established

Table 5. Hydrocarbons in Soil, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California - July 1996.

Borehole-Sample Depth (ft)	Date Samped	Analytical Lab	TEPH-D	TEPH-U	TVPH-G	TVPH-U	PNA
			<---------- parts per million ---------->				
B96-1.5	07/29/96	SAL	340	ND	---	---	ND
B96-7.5	07/29/96	SAL	880	---	---	---	ND
B97-1.5	07/29/96	SAL	<1	ND	---	---	ND
B97-7.5	07/29/96	SAL	460	---	---	---	ND

Abbreviations:

TEPH-D = Total Extractable Petroleum Hydrocarbons - Diesel
TEPH-U = Total Extractable Petroleum Hydrocarbons - Unknown hydrocarbons
TVPH-G = Total Volatile Petroleum Hydrocarbons - Gasoline range
TVPH-U = Total Volatile Petroleum Hydrocarbons - Unknown hydrocarbons
PNA = Polynuclear Aromatic Hydrocarbons by EPA Method 8310
SAL = Superior Analytical Laboratory, Martinez, California
--- = Not analyzed
ND = None detected

APPENDIX B

ANALYTIC RESULTS FOR GROUND WATER

Table 7
Results of Groundwater Analysis, Area 20
Del Monte Plant 35, Emeryville, California

Sample Identification	Analyte										
	Gasoline (ug/l)	Benzene (ug/l)	Ethyl Benzene (ug/l)	Total Xylenes (ug/l)	Vinyl Chloride (ug/l)	Trans-1,2-Dichloroethene (ug/l)	Cis-1,2-Dichloroethene (ug/l)	1,1-Dichloroethane (ug/l)	Trichloroethylene (ug/l)	Tetrachloroethene (ug/l)	Dibromochloromethane (ug/l)
A20-K-02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
A20-K-02R	<50	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA	NA	NA
A20-K-03	<50	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	1.5	4.9	<0.5
A20-K-04	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
A20-K-05	1900	51	12	48	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	<0.5
A20-DM-02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
A20-DM-03	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
A20-DM-04	<50	<0.5	<0.5	<0.5	2.1	<0.5	<0.5	<0.5	<0.5	<0.5	6.6
A20-DM-05	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
A20-DM-06	<50	<0.5	<0.5	<0.5	5.3	3.8	38	<0.5	21	41	<0.5

10/28/93

Note:

[a] <50 indicates that the laboratory detection limit was not exceeded.
[b] All samples were analyzed for Gas/BTEX, TEPH, and Chlorinated hydrocarbons.
[c] *NA = Not Analyzed.*
[d] Shading indicates laboratory analysis was performed after hold time had expired.

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<-------- Parts per million -------->								
B-1	6.4	3/15/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.9	3/15/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/15/94*		*0.2*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-2	6.0	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.5	3/16/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*0.0005*	*0.0005*	*ND*	*ND*	*ND*	*ND*
B-3	2.5	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND(0.03)	0.28	ND(0.03-0.1)
	7.5	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/15/94*		*0.52*	*ND*	*0.001*	*0.019*	*0.0084*	*0.046*	*ND*	*ND*	*ND*
B-4	5.0	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/15/94	Sat	ND	49 (K)	ND	ND	ND	ND	ND	ND	ND
	Water	*3/15/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-5	5.0	3/14/94	Unsat	ND	50 (D) 2,200 (MO)	ND	ND	ND	ND	ND	ND	ND
	7.5	3/14/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/14/94	Sat	ND	ND	0.015	ND	ND	0.012	ND	ND	ND
	Water	*3/14/94*		*0.95*	*15 (K)*	*0.18*	*ND(1)*	*ND(1)*	*0.088*	*ND*	*ND*	*ND*
B-6	5.0	3/14/94	Unsat	ND	4 (D) 37 (MO)	ND	ND	ND	ND	ND	ND	ND
	7.5	3/14/94	Unsat	10	230 (D) 1,200 (MO)	ND(0.03)	ND(0.03)	0.017	ND(0.03)	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/14/94*		*4.0*	*79 (D)* *730 (MO)*	*<5*	*<5*	*7*	*<5*	*ND*	*ND*	*0.001 c1,2-DCE*
B-7	8.5	3/16/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	13.5	3/16/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*0.06*	*ND*	*ND*	*0.002*	*ND*	*ND*	*ND*	*ND*	*ND*

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<---------- Parts per million ---------->								
B-8	5.0	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-9	5.0	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/17/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-10	5.9	3/14/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*15*	*3 (K)*	*0.34*	*0.031*	*0.64*	*1.9*	*ND(0.01)*	*ND(0.01)*	*ND(0.01-0.2)*
B-11	2.5	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/16/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*0.06*	*ND*	*ND*	*0.0008*	*ND*	*ND*	*ND*	*ND*	*ND*
B-12	7.5	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/17/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-13	2.5	3/16/94	Unsat	ND	2 (D)	ND	ND	ND	0.008	ND	0.005	0.05 MC 0.009 1,1-DCA 0.05 TCE
	7.5	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-14	2.5	3/16/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/16/94	Unsat	ND	ND	ND	ND	ND	0.007	ND	ND	ND
	Water	*3/16/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-15	2.5	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/17/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/17/94*		*0.07*	*1 (K)*	*0.0097*	*ND*	*0.0011*	*0.0076*	*ND*	*ND*	*ND*
B-16	5.0	3/18/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/18/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/18/94*		*38*	*15 (K)*	*0.57*	*0.28*	*1.5*	*5.4*	*ND*	*ND*	*ND*

-- Table 1 continues next page --

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<--------			Parts per million					-------->
B-17	2.5	3/17/94	Unsat	1	2 (D) 50 (MO)	ND	ND	0.005	0.055	ND	ND	ND
	7.5	3/17/94	Unsat	130	190 (K)	ND(0.08)	0.19	1.2	1.4	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/17/94*		*32*	*6 (K)*	*1.8*	*0.78*	*1.1*	*2.4*	*ND*	*ND*	*0.001 CB*
B-18	8.4	3/14/94	Unsat	1	ND	ND	ND	ND	ND	ND	ND	ND
	13.4	3/14/94	Sat	1	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*0.65*	*ND*	*0.032*	*0.0006*	*0.0048*	*0.0038*	*0.003*	*ND*	*ND*
B-19	7.5	3/14/94	Unsat	23[a]	150 (D)	ND(0.01)	ND(0.01)	0.061	0.019	ND(0.1)	ND(0.1)	ND(0.1-0.5)
	12.5	3/14/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*ND*	*110 (D)*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-20	7.5	3/14/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/14/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/14/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-21	5.0	3/15/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/15/94	Sat	11	ND	ND(0.1)	ND(0.1)	ND(0.1)	ND(0.1)	ND	ND	ND
	Water	*3/15/94*		*0.14*	*ND*	*ND*	*ND*	*ND*	*0.0006*	*ND*	*ND*	*0.018 CB* *0.004 1,2-DCB*
B-22	5.0	3/18/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/18/94	Sat	130	340 (D)	0.07	0.98	0.07	0.25	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/18/94*		*6.0*	*220 (D)*	*0.06*	*0.02*	*0.03*	*0.06*	*ND*	*ND*	*ND*
B-23	10.0	3/30/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/30/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*TCE 0.004* *c-1,2-DCE 0.006* *VC 0.004*
B-24	9.0	3/18/94	Sat?	4	20 (K)	0.13	ND	0.045	0.19	ND(0.03)	ND(0.03)	ND(0.03-0.1)
	Water	*3/18/94*		*22*	*2 (K)*	*1.8*	*0.03*	*0.52*	*1.9*	*0.004*	*ND*	*ND*

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-25	10.0	3/18/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/18/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/18/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-26	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*0.18*	*ND*	*0.0012*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-27	*Water*	*3/26/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-28	8.5	3/26/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/26/94*		*0.06*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-29	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*20*	*2 (K)*	*0.13*	*0.041*	*0.77*	*0.36*	*ND*	*ND*	*ND*
B-30	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.5	3/27/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-31	6.0	3/27/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	8.5	3/27/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
B-32	8.5	3/26/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/26/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.001 c1,2-DCE*
B-33	8.5	3/26/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	11.5	3/26/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/26/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.003*	*0.005 TCE* *0.004 c1,2-DCE*
B-34	10.0	3/30/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	12.5	3/30/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*0.15*	*ND*	*0.001*	*0.01*	*0.003*	*0.019*	*ND*	*ND*	*ND*

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-35	10.0	3/30/94	Sat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*TCE 0.002*
B-36	7.5	3/30/94	Unsat	ND	ND	ND	ND	ND	0.007	ND	ND	ND
	10.0	3/30/94	Sat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/30/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*0.0005*	*ND*	*ND*	*ND*
B-37	8.5	3/27/94	Unsat?	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/27/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*0.002 1,1-DCE*
B-38	5.0	3/31/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	7.5	3/31/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Water	*3/31/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
	Water[b]	*3/31/94*		*ND(0.01)*	*ND(0.01)*	*ND(0.0003)*	*ND(0.0003)*	*ND(0.0003)*	*ND* [*]	*ND*	*ND*	*ND*
B-39	7.5	3/31/94	Unsat	ND	ND	ND	ND	ND	ND	ND	ND	ND
	10.0	3/31/94	Sat?	ND	ND	ND	ND	ND	0.01	ND	ND	ND
	Water	*3/31/94*		*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
	Water[b]	*3/31/94*		*ND(0.01)*	*ND(0.01)*	*ND(0.0003)*	*ND(0.0003)*	*ND(0.0003)*	*ND*	*ND*	*ND*	*ND*
B-40	5.0	10/10/94	Unsat	64	35(K)	0.098	0.28	0.74	1.2	—	—	—
	10.0	10/10/94	Sat?	390	100(K)	1.7	2.8	13	49	—	—	—
B-41	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
	10.0	10/10/94	Sat?	5	4(K)	0.011	0.012	0.013	ND	—	—	—
B-42	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
B-43	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
B-44	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	—	—	—
	9.0	10/10/94	Unsat?	ND	ND	ND	ND	ND	ND	—	—	—
	Water	*10/10/94*		*ND*	*ND(0.05)*[d]	*ND*	*ND*	*ND*	*ND*	—	—	—
B-45	*Water*	*10/10/94*		*ND*	*0.1(K)*[d]	*ND*	*ND*	*ND*	*ND*	—	—	—
	Water[b]	*10/10/94*		—	*ND(0.05)*[e]	—	—	—	—	—	—	—
B-46	*Water*	*10/10/94*		*ND*	*ND(0.05)*[d]	*ND*	*ND*	*ND*	*ND*	—	—	—

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Boring ID	Depth	Date Sampled	Sat/ Unsat	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs
				<----------Parts per million---------->								
B-48	5.0	10/10/94	Unsat	3	1.8(K)	0.007	ND	ND	0.16	---	---	---
	10.0	10/10/94	Sat	470	52(K)	1.5	0.77	8	42	---	---	---
	Water	*10/10/94*		*0.17*	*0.13(K)*[d]	*0.003*	*ND*	*0.004*	*0.019*	---	---	---
	Water[b]	*10/10/94*		---	*ND(0.05)*	---	---	---	---	---	---	---
B-49	5.0	10/10/94	Unsat	ND	ND	ND	ND	ND	ND	---	---	---
	10.0	10/10/94	Sat	ND	ND	ND	ND	ND	ND	---	---	---
	Water	*10/10/94*		*ND*	*0.069*[d]	*0.0007*	*ND*	*ND*	*0.0016*	---	---	---
Travel Blank	Water	3/27/94		ND	---	ND	ND	ND	ND	ND	ND	ND
	Water	3/31/94		---	---	ND	ND	ND	ND	ND	ND	ND
	Water	3/31/94		---	---	ND	ND	ND	ND	ND	ND	0.002 MC[c]
	Water	10/10/94		ND	---	ND	ND	ND	ND	---	---	---
Standard detection limit	Soil			1	1 (K,D) 30 (MO)	0.005	0.005	0.005	0.005	0.005	0.005	0.005-0.02
	Water			0.05	1 (K,D) 20 (MO)	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001-0.02
MCL						0.001	0.1[f]	0.68	1.75	0.0005	0.005	0.03 CB 0.005 1,1-DCA 0.13 1,2-DCB[f] 0.006 1,1-DCE 0.006 c1,2-DCE 0.005 MC 0.005 TCE 0.0005 VC

-- Table 1 continues next page --

Table 1. Analytic Results for Soil and Open-borehole Water Samples - New Century Beverage Co., 1150 Park Avenue, Emeryville, California (continued)

Abbreviations:

Sat/Unsat = indicates whether soil sample was saturated with ground water
TVH-G = Total volatile hydrocarbons as gasoline detected by EPA Method 8015, *modified per California Department of Health Services (DHS)*
note: mineral spirits were also screened with this method, however, all detected TVH were characterized as gasoline
TEH = Total extractable *hydrocarbons [kerosene (K), diesel (D), and motor oil (MO) range]* detected by EPA Method 8015, modified by DHS
notes: hydraulic oil was also screened with this method, however, no hydraulic oil was reported in any samples
Kerosene-range compounds, where reported, are characterized by the laboratory as a fraction of gasoline hydrocarbons
HVOCs = Halogenated volatile organic compounds detected by EPA Method 8010
ND = Not detected at standard detection limit (indicated on the last row of the table)
ND(n) = Not detected at detection limit of n ppm, due to dilution of sample ptior to analysis
— = Not analyzed

MCL = Maximum Contaminant Level for Drinking Water established by the California Department of Toxic Substances Control

Notes:

Analyses performed by Curtis & Tompkins, Ltd. of Berkeley, CA except as noted (CA DHS certification # 1459)

[a]Reported concentration falls in volatile range but does not match gasoline or mineral spirits fingerprint
[b]Split duplicate analysis:
March 1994 splits performed by GTEL Environmental Laboratories, Inc. of Concord, CA (CA DHS certification # E1075)
October 1994 splits performed by Superior Precision Analytical Laboratories, Inc. of Martinez, CA (CA DHS certification #1542)
[c]Methylene chloride was also reported in the method blank at 0.0007 ppm - no methylene chloride was detected in the site ground water samples
(methylene chloride is used during some laboratory procedures and is a common laboratory contaminant)
[d]Benzoic acid was reported as a single peak on the chromatogram. *Since this is not a fuel compound, the laboratory calculated the TEH concentrations excluding the benzoic acid contribution, and issued a revised report showing these corrected concentrations.* Both the revised and uncorrected analytic reports are included in Appendix C.
[e]A single peak on the chromatogram in the range of benzoic acid reportedly attributed to the detection of TEH above the detection limit. Since SPAL could not positively identify the compound at the peak, the report was not revised. However, the reported concentration may not be representative of field conditions since TEH is not detectable if the benzoic acid peak is discounted.
[f]DTSC Recommended Action Level - no MCL established

Table 2. Ground Water Analytical Results, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California.

Well/ Boring ID	Date Sampled	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs	MTBE
		<— parts per million (mg/L) —>									
MW-1	03/29/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	---
MW-2	03/29/94	2.4	37 (D)	0.017	ND (0.001)	0.005	0.015	ND	ND	ND	---
	05/20/94	1.9	6.7	0.021	0.0086	0.0061	0.0059	ND	ND	ND	---
MW-3	03/29/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	---
MW-4	03/29/94	0.13	ND (1)	ND	ND	ND	ND	ND	ND	0.017 CB	---
	05/20/94	0.22	[b]	0.0006	0.0015	0.0011	0.0035	ND	ND	0.004 1,2-DCB 0.017 CB	---
	06/01/94	---	ND	---	---	---	---	---	---	0.005 1,2-DCB ---	---
MW-5	03/29/94	2.1	30 (K)	0.39	ND (0.003)	ND (0.003)	0.18	ND	ND	ND	---
	05/20/94	2.3	2.7 (D)	0.49	0.005	0.033	0.23	ND	ND	ND	---
	10/20/94	0.77	9(K)	0.23	ND(0.001)	0.019	0.077	---	---	---	---
split[d]	10/20/94	---	ND	---	---	---	---	---	---	---	---
	02/28/95	1.2	3.6 (D)	0.33	0.0016	0.041	0.013	---	---	---	---
	06/27/95	0.72	2.1 (D)	0.28	ND	ND	ND	---	---	---	ND
	09/21/95	0.71	3.5[g]	0.24	0.0021	0.045[j]	ND	---	---	---	---
	12/20/95	0.86	6.10[g]	0.28	0.003	0.039	0.0059	---	---	---	---
	03/27/96	1.6[g]	7.5[g]	0.38	0.0008	0.0017	0.031	---	---	---	---
	05/22/96[n]	---	---	0.27	0.0045	0.0026	0.01	---	---	---	---
	06/25/96	0.75	30[p]	0.18	0.0018	ND	0.0058	---	---	---	---
	09/26/96	**0.29**	**4.6**	**0.120**	**0.0033**	**0.0026**	**0.0091**	---	---	---	---
MW-6	03/29/94	ND	5 (D)	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	2.4 (D)	ND	ND	ND	ND	ND	ND	ND	---
	10/20/94	0.055	ND	ND	ND	0.0021	0.0024	---	---	---	---
split[e]	10/20/94	---	0.27 (D)	---	---	---	---	---	---	---	---
	02/28/95	---	0.78 (D)	ND	ND	ND	ND	---	---	---	---
	06/27/95	ND	0.51 (D)	ND	ND	ND	ND	---	---	---	---
	09/21/95	---	0.96[g,h]	ND	ND	ND	ND	---	---	---	ND
	12/20/95[k]										

Table 2. Ground Water Analytical Results, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California. (continued)

Well/ Boring ID	Date Sampled	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs	MTBE
		← parts per million (mg/L) →									
MW-6	03/27/96	---	1.5[g,h]	0.0009	ND	ND	ND	---	---	---	---
(cont.)	05/22/96[n]	---	---	ND	ND	ND	ND	---	---	---	---
	06/25/96	ND	1.3[q]	ND	ND	ND	ND	---	---	---	---
	09/26/96	**---**	**140**	**ND**	**ND**	**ND**	**ND**	**---**	**---**	**---**	**---**
MW-7	03/29/94	0.16	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
dup	03/29/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	---
split[a]	05/20/94	ND	ND	ND	ND	ND	ND	ND (0.0005)	ND (0.0005)	ND	---
dup	05/20/94	ND	[b]	ND	ND	ND	ND	ND	ND	ND	---
	06/01/94	---	ND	---	---	---	---	---	---	---	---
	10/20/94	ND	ND	ND	ND	ND	ND	---	---	---	---
	02/28/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	06/27/95	ND	ND	ND	ND	ND	ND	---	---	---	ND
	09/21/95	ND	0.110[s]	ND	ND	ND	ND	---	---	---	ND
	12/20/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	03/27/96	ND	ND	ND	ND	ND	ND	---	---	---	ND
	06/25/96	ND	0.1[r]	ND	0.0032	ND	0.0006	---	---	---	ND
	09/26/96	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**---**	**---**	**---**	**ND**
MW-8	04/05/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
split[a]	04/05/94	ND(0.01)	ND (1)	ND(0.0003)	0.0004	ND(0.0003)	ND(0.0003)	ND	ND	ND	---
	05/20/94	ND	ND[c]	ND	ND	ND	ND	ND	ND	ND	---
	10/20/94	ND	ND	ND	ND	ND	ND	---	---	---	---
split[e]	10/20/94	---	ND	---	---	---	---	---	---	---	---
	02/28/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	06/27/95	ND	ND	ND	ND	ND	ND	---	---	---	ND
	09/21/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	12/20/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	03/27/96	ND	ND	ND	ND	ND	ND	---	---	---	---
	06/25/96	ND	0.06[r]	ND	ND	ND	ND	---	---	---	---
	09/26/96	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**---**	**---**	**---**	**---**
MW-9	04/05/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	---
MW-10	10/20/94	ND	ND	ND	ND	ND	ND	---	---	---	---

Table 2. Ground Water Analytical Results, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California. (continued)

Well/ Boring ID	Date Sampled	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs	MTBE
		<— parts per million (mg/L) —									—>
split[c]	10/20/94	---	ND	---	---	---	---	---	---	---	---
	02/28/95	---	ND	ND	ND	ND	ND	---	---	---	---
MW-10	06/27/95	ND	ND	ND	ND	ND	ND	---	---	---	ND
(cont.)	09/21/95	---	ND	ND	ND	ND	ND	---	---	---	---
	12/20/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	03/27/96	---	ND.	ND	ND	ND	ND	---	---	---	---
	06/25/96	---	0.07[r]	ND	ND	ND	ND	---	---	---	---
	09/26/96	**—**	**ND**	**ND**	**ND**	**ND**	**ND**	**—**	**—**	**—**	**—**
MW-11	10/20/94	ND	ND	ND	ND	ND	ND	---	---	---	---
split[d]	10/20/94	ND	ND	ND(0.0003)	ND(0.0003)	ND(0.0003)	ND	---	---	---	---
	02/28/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	06/27/95	ND	ND	ND	ND	ND	ND	---	---	---	ND
	09/21/95	ND	0.10[g,j]	ND	ND	ND	ND	---	---	---	---
	12/20/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	03/27/96	ND	ND	ND	ND	ND	ND	---	---	---	---
	06/25/96	ND	0.05[r]	ND	ND	ND	ND	---	---	---	---
	09/26/96	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**—**	**—**	**—**	**—**
MW-12	10/20/94	0.087	0.13(K)	0.0063	ND	0.0014	0.0027	---	---	---	---
split[d]	10/20/94	0.057	ND	0.0073	ND(0.0003)	0.0016	0.0029	---	---	---	---
	02/28/95	0.16	0.077 (K)	0.018	ND	0.0028	0.0027	---	---	---	---
	06/27/95	ND	0.16 (K)	0.011	ND	ND	0.0009	---	---	---	ND
	09/21/95	ND	0.14[g,j]	0.0015	ND	ND	ND	---	---	---	---
	12/20/95	2.8	0.61[g,j]	0.420	0.018	0.170	0.500	---	---	---	---
	03/27/96	0.5[g]	0.38[g]	0.05	0.0009	0.018	0.0051	---	---	---	---
	05/22/96[n]	---	---	0.034	ND	0.013	0.0051	---	---	---	---
	06/25/96	0.12	0.35[q,s]	0.0093	ND	0.0027	0.0013	---	---	---	---
	09/26/96	**ND**	**0.140 [g,j]**	**0.0024**	**ND**	**ND**	**ND**	**—**	**—**	**—**	**—**
MW-13	02/28/95	5.8	1.0 (K)	0.76	0.021	0.049	0.58	---	---	---	---
dup	02/28/95	6.3	0.74 (K)	0.77	0.013	0.058	0.58	---	---	---	---
	06/27/95	4.7	0.35 (K)	1.6	0.01	0.26	0.40	---	---	---	ND (0.036)
dup	06/27/95	3.8	0.32 (K)	2.0	ND (0.018)	0.27	0.39	---	---	---	ND (0.072)
	09/21/95	4.1	0.34[g,j]	1.1	0.0034	0.15	0.123	---	---	---	---
	09/21/95	3.7	0.40[g,j]	1.1	0.008	0.13	0.158	---	---	---	---
	12/20/95	4.5	0.15[g]	1.7	0.012	0.16	0.273	---	---	---	---

Table 2. Ground Water Analytical Results, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California. (continued)

Well/ Boring ID	Date Sampled	TVH-G	TEH	Benzene	Toluene	Ethyl-benzene	Xylenes	1,2-DCA	PCE	Other HVOCs	MTBE
		<---------- parts per million (mg/L) ---------->									
dup	12/20/95	3.5	0.59[g,j]	1.2	0.013	0.086	0.258	---	---	---	---
dup	03/27/96	4.8[g]	0.23[g]	0.98	0.0041	0.12	0.16	---	---	---	---
	03/27/96	4.3[g]	0.39[g]	1.1	0.0031	0.13	0.13	---	---	---	---
MW-13	05/22/96[n]	---	---	0.310	0.0011	0.039	0.016	---	---	---	---
(cont.)	06/25/96	1.6	0.48[q,s]	0.6	0.0011	0.67	0.23	---	---	---	---
dup	06/25/96	1.5	0.40[q,s]	0.5	0.0014	0.64	0.23	---	---	---	---
	09/26/96	**4.9**	**0.140** [g,j]	**1.4**	**ND**	**0.24**	**0.786**	---	---	---	---
dup	**09/26/96**	**1.3**	**0.072** [g,j]	**0.54**	**ND**	**0.081**	**0.188**	---	---	---	---
MW-14	06/27/95	ND	ND	ND	ND	ND	ND	---	---	---	ND
	09/21/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	12/20/95	ND	0.120[g]	ND	ND	ND	ND	---	---	---	---
	03/27/96	ND	ND	0.0029	ND	ND	ND	---	---	---	---
	05/03/96[n]	---	---	ND	ND	ND	ND	---	---	---	---
	05/07/96[o]	---	---	ND	ND	ND	ND	---	---	---	---
	06/25/96	ND	0.07[r]	ND	ND	ND	ND	---	---	---	---
	09/26/96	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	---	---	---	---
Travel Blank	03/29/94	ND	---	ND	ND	ND	ND	ND	ND	ND	---
	04/05/94	ND	---	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	---	ND	ND	ND	ND	ND	ND	ND	---
	10/20/94	ND	---	ND	ND	ND	ND	---	---	---	---
split[d]	10/20/94	ND	---	ND(0.0003)	ND(0.0003)	ND(0.0003)	ND	---	---	---	---
split[e]	10/20/94	ND	---	ND	ND	ND	ND	---	---	---	---
	03/27/96[m]	---	---	ND	ND	ND	ND	---	---	---	---
Bailer Blank	03/29/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
	04/05/94	ND	ND (1)	ND	ND	ND	ND	ND	ND	ND	---
	05/20/94	ND	0.42[b]	ND	ND	ND	ND	ND	ND	ND	---
	02/28/95	ND	ND	ND	ND	ND	ND	---	---	---	---
	06/27/95	ND	ND	ND	ND	ND	ND	---	---	---	ND
		0.05	0.05 (K,D)	0.0005	0.0005	0.0005	0.0005	0.001	0.001	0.001-0.02	0.002
MCL		NE	NE	0.001	0.1[f]	0.68	1.75	0.0005	0.005	0.13 1,2-DCB[f] 0.03 CB	NE

Table 2. Ground Water Analytical Results, Former New Century Beverage Facility, 1150 Park Avenue, Emeryville, California (continued)

Abbreviations:

TVH-G = Total volatile hydrocarbons as gasoline detected by EPA Method 8015, modified by DHS note: Mineral spirits were also screened with this method for analyses prior to 10/20/94, however, all detectable TVH was characterized as gasoline.
TEH = Total extractable hydrocarbons [kerosene (K) and diesel (D)] detected by EPA Method 8015, modified per DHS notes: Hydraulic oil and motor oil were also screened with this method for analyses prior to 10/20/94, however, all detected TEH was characterized as kerosene or diesel. All reported kerosene-range TEH was characterized as a fraction of gasoline compounds by the analytical laboratory.
BTEX = Benzene, toluene, ethylbenzene, and xylenes.
HVOCs = Halogenated volatile organic compounds detected by EPA Method 8010
MTBE = Methyl-tert-butyl ether by EPA Method 8020
ND = Not detected at standard detection limit specified on the last row of the table
ND(n) = Not detected at detection limit of n ppm, due to dilution of sample prior to analysis
--- = Not analyzed
MCL = Maximum Contaminant Level for Drinking Water established by the California Department of Toxic Substances Control
NE = Not established

Notes:

Benzene, toluene, ethylbenzene, xylenes and MTBE were analyzed by EPA Method 8020.
Analyses performed by Curtis & Tompkins, Ltd. of Berkeley, CA except as noted (CA DHS certification # 1459)

a. Split duplicate analysis performed by GTEL Environmental Laboratories, Inc. of Concord, CA (CA DHS certification # E1075)

b. TEH as diesel was detected at 0.42 ppm in the bailer blank collected on 5/20/94, and similar concentrations were reported in well MW-4 (0.31 ppm) and MW-7 (0.45 ppm) samples. Since no TEH was detected in earlier MW-4 and MW-7 samples, this indicated the samples were contaminated with the sampling equipment. Samples were collected in wells MW-4 and MW-7 again on 6/01/94, and no TEH was detected in either sample, consistent with the 3/94 results.

Notes (cont.):

c. Although no TEH as diesel, kerosene or motor oil was reported, the laboratory reported a single peak on the gas chromatogram that was identified as pentatriacontane (a nonhazardous alkaline or paraffin organic compound C36H74) using EPA Method 8270 (Gas chromatography with Mass spectrometry)
d. Split duplicate analysis performed by WEST Laboratory of Sacramento, CA (CA DHS certification #1346)
e. Split duplicate analysis performed by Superior Precision Analytical Laboratories, Inc. of Martinez, CA (CA DHS certification #1542)
f. DTSC Recommended Action Level - no MCL established
g. Sample exhibits fuel pattern that does not resemble standard
h. Heavier hydrocarbons than indicated standard
i. Lighter hydrocarbons than indicated standard
j. Presence of this compound confirmed by second column; however, the confirmation concentration differed from the reported result by more than a factor of two
k. Well MW-6 damaged by excavation. Not sampled 12/20/95. Repaired 1/5/96.
l. Sample exhibits single unknown peak or peaks
m. Sample analyzed after expiration of holding time.
n. Analyses performed by Superior Analytical Laboratory, Martinez, California
o. Analyses performed by Sequoia Analytical, Walnut Creek, California
p. Lighter hydrocarbons were found in the range of diesel, but do not resemble a diesel fingerprint.
q. The pattern of the chromatogram resembles a weathered, aged or degraded diesel petroleum hydrocarbon
r. Heavier hydrocarbons were found in the range of diesel, but do not resemble a diesel fingerprint. Possible motor oil.
s. Sample also contains gasoline

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Table 3. Polynuclear Aromatic Hydrocarbons in Ground Water-New Century Beverage Co., 1150 Park Avenue Emeryville, California

Well ID	Date Sampled	Naphthalene	Fluoranthene	Fluorene	Pyrene
		<----------parts per million---------->			
MW-5	06/25/96	ND	**0.0005**	**0.0034**	**0.0005**
MW-6	06/25/96	ND	ND	ND	ND
MW-13	06/25/96	**0.0041**	ND	**0.0003**	ND

Notes:
ND = Not detected above laboratory detection limit.

APPENDIX C

HISTORICAL GROUND WATER ELEVATION DATA

Table 1. Historical Ground Water Elevations - New Century Beverage Co., 1150 Park Avenue, Emeryville, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	03/27/94	38.74	5.90	32.84
	03/29/94		5.89	32.85
	04/15/94		6.24	32.50
	05/20/94		5.79	32.95
	02/28/95		5.13	33.61
	06/27/95		7.69	31.05
	09/21/95		8.25	30.19
	12/20/95		5.94	32.80
	03/27/96		4.96	33.78
	06/25/96		6.81	31.93
MW-2	03/27/94	38.87	6.57	32.30
	03/29/94		6.58	32.29
	04/15/94		6.86	32.01
	05/20/94		6.45	32.42
	02/28/95		5.64	33.23
	06/27/95		7.34	31.53
	09/21/95		8.80	30.07
	12/20/95		6.81	32.06
	03/27/96		5.78	33.09
	06/25/96		7.34	31.53
MW-3	03/29/94	40.79	10.69	30.10
	04/15/94		10.90	29.89
	05/20/94		10.81	29.98
	02/28/95		10.35	30.44
	06/27/95		10.43	30.36
	09/21/95		10.65	30.14
	12/20/95		10.65	30.14
	03/27/96		10.50	30.29
	06/25/96		10.73	30.06
MW-4	03/27/94	40.15	8.23	31.92
	03/29/94		8.21	31.94
	04/15/94		8.78	31.37
	05/20/94		8.54	31.61
	02/28/95		7.71	32.44
	06/27/95		7.90	32.25
	09/21/95		8.50	31.65

Table 1. Historical Ground Water Elevations - New Century Beverage Co., 1150 Park Avenue, Emeryville, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-4 (cont.)	12/20/95		8.05	32.10
	03/27/96		7.74	32.41
	06/25/96		**8.29**	**31.86**
MW-5	03/27/94	36.49	8.02	28.47
	03/29/94		7.93	28.56
	04/15/94		8.10	28.39
	05/20/94		7.88	28.61
	10/20/94		9.45	27.04
	02/28/95		7.57	28.92
	06/27/95		8.99	27.50
	09/21/95		9.56	26.91
	12/20/95		9.02	27.47
	03/27/96		7.60	28.89
	06/25/96		**8.70**	**27.79**
MW-6	03/27/94	35.52	9.60	25.92
	03/29/94		9.59	25.93
	04/15/94		9.64	25.88
	05/20/94		9.47	26.05
	10/20/94		10.51	25.01
	02/28/95	35.53[1]	8.54	26.99
	06/27/95		10.02	25.51
	09/21/95		10.47	25.05
	12/20/95 [a]		---	---
	03/27/96 [b]		9.01	---
	06/25/96	**35.48[2]**	**9.96**	**25.52**
MW-7	03/27/94	37.53	7.25	30.28
	03/29/94		7.27	30.26
	04/15/94		7.47	30.06
	05/20/94		7.25	30.28
	10/20/94		8.87	28.66
	02/28/95		6.89	30.64
	06/27/95		7.90	29.63
	09/21/95		8.81	28.72
	12/20/95		7.10	30.43
	03/27/96		6.67	30.86
	06/25/96		8.01	29.52

Table 1. Historical Ground Water Elevations - New Century Beverage Co., 1150 Park Avenue, Emeryville, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-8	04/05/94	33.11	9.03	24.08
	04/15/94		8.94	24.17
	05/20/94		8.70	24.41
	10/20/94		10.00	23.11
	02/28/95		8.48	24.63
	06/27/95		9.64	23.47
	09/21/95		9.83	23.28
	12/20/95		8.80	24.31
	03/27/96		8.83	24.28
	06/25/96		**10.11**	**23.00**
MW-9	04/05/94	36.06	7.60	28.46
	04/15/94		7.60	28.46
	05/20/94		7.39	28.67
	02/28/95		6.85	29.21
	06/27/95		8.31	27.75
	09/21/95		8.75	27.31
	12/20/95		7.73	28.33
	03/27/96		7.48	28.58
	06/25/96		**8.18**	**27.88**
MW-10	10/20/94	35.03	10.14	24.89
	02/28/95		8.98	26.05
	06/27/95		9.59	25.44
	09/21/95		10.00	25.03
	12/20/95		8.88	26.15
	03/27/96		8.98	26.05
	06/25/96		**9.74**	**25.29**
MW-11	10/20/94	32.74	9.71	23.03
	02/28/95		7.66	25.08
	06/27/95		8.86	23.88
	09/21/95		9.44	23.30
	12/20/95		8.81	23.93
	03/27/96		8.07	24.67
	06/25/96		**9.72**	**23.02**
MW-12	10/20/94	36.18	12.66	23.52
	02/28/95		7.60	28.58

Table 1. Historical Ground Water Elevations - New Century Beverage Co., 1150 Park Avenue, Emeryville, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-12 (cont.)	06/27/95		9.56	26.62
	09/21/95		10.17	26.01
	12/20/95		8.19	27.99
	03/27/96		8.66	27.52
	06/25/96		9.63	26.55
MW-13	02/28/95	34.65	8.72	25.93
	06/27/95		8.99	25.66
	09/21/95		10.37	24.28
	12/20/95		10.20	24.45
	03/27/96		9.22	25.43
	06/25/96		11.16	23.49
MW-14	06/27/95	33.68	9.88	23.80
	09/21/95		10.07	23.61
	12/20/95		9.02	24.66
	03/27/96		9.15	24.53
	06/25/96		10.08	23.60

Notes:

[1] Resurveyed 3/13/95.

[2] Resurveyed 5/3/96 by PLS Surveys, Inc., Alameda, CA.

[a] Well MW-6 damaged by excavation, therefore no water level was taken at MW-6 on 12/20/95.

[b] Well MW-6 was repaired 1/5/96. Well MW-6 top-of-casing elevation will be resurveyed during 5/96. No ground water elevation calculated at well on 3/27/96.

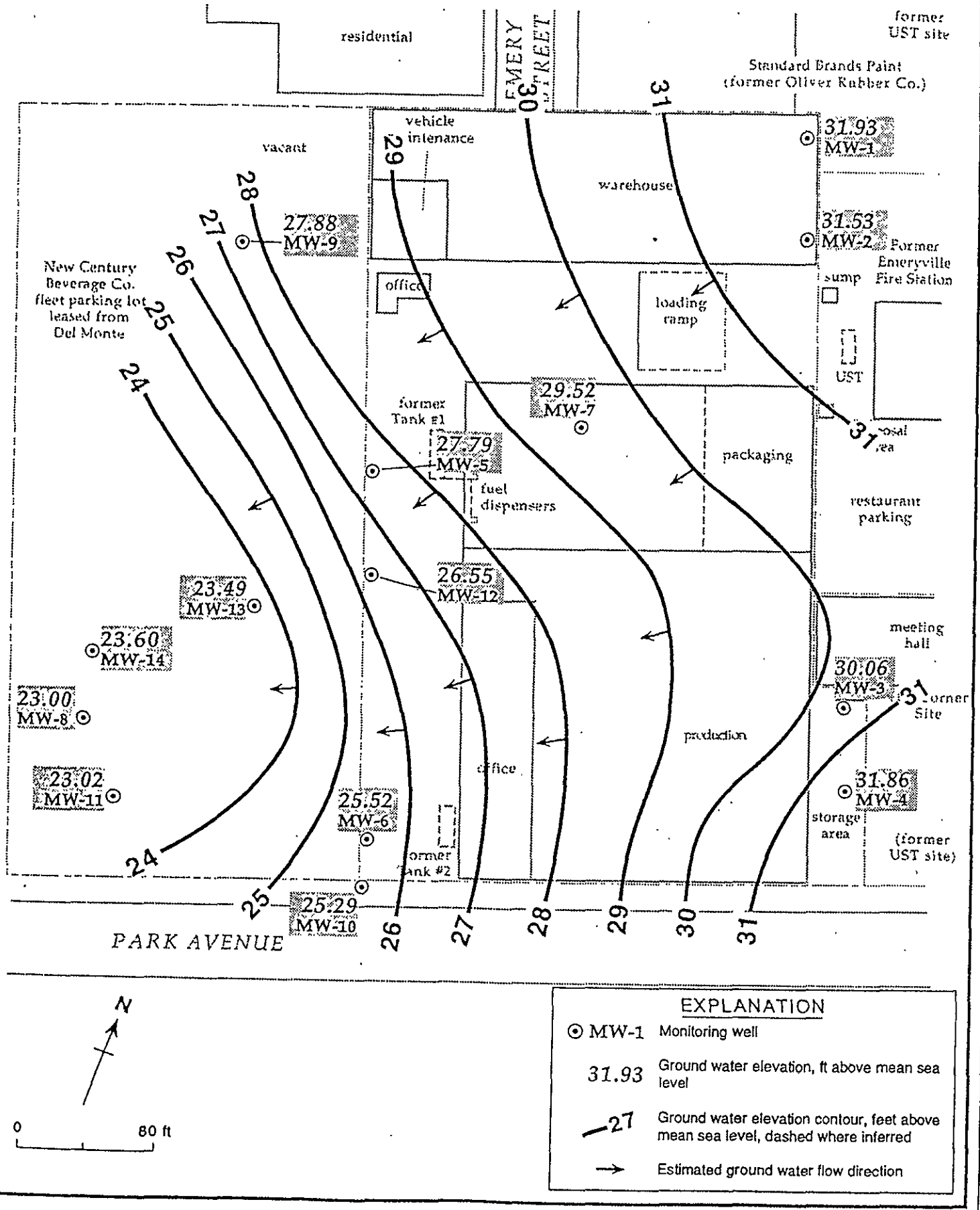
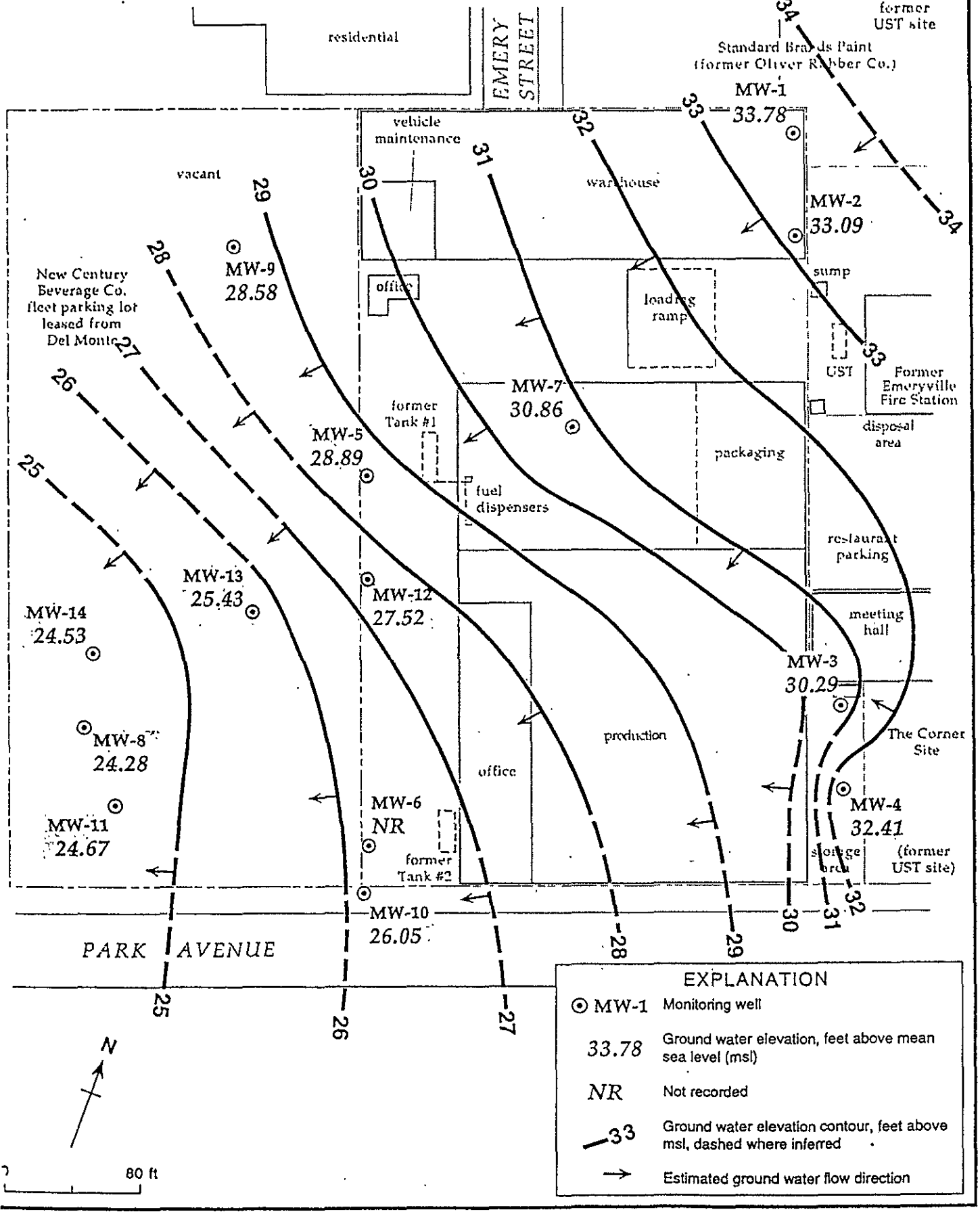


Figure 2. Ground Water Elevation Contours and Estimated Flow Direction - June 25, 1996 - New Century Beverage Company, 1150 Park Avenue, Emeryville, California



ure 2. Ground Water Elevation Contours and Estimated Flow Direction - March 27, 1996 - New Century Beverage Company, 1150 Park Avenue, Emeryville, California

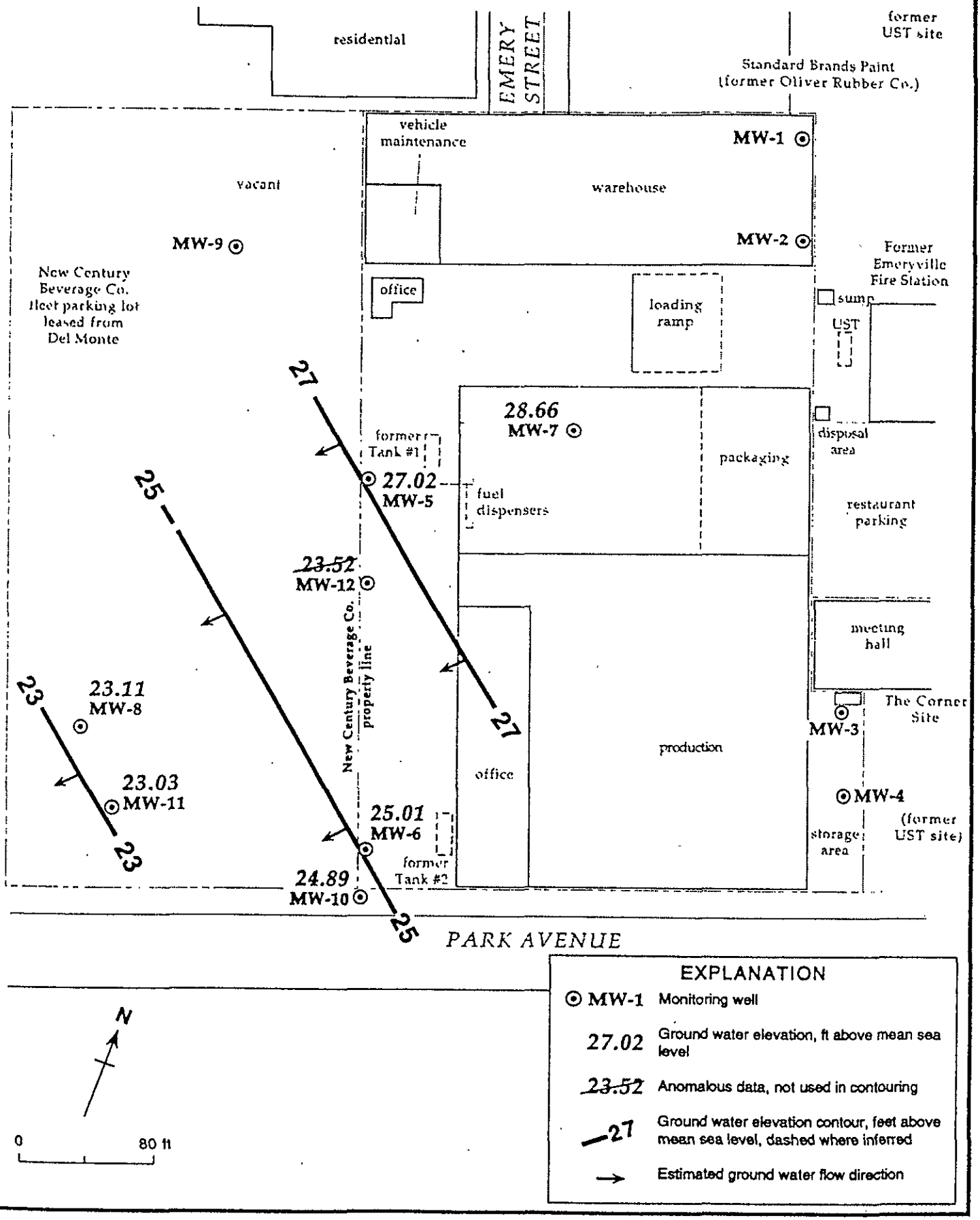


Figure 8. Ground Water Elevation Contours and Estimated Flow Direction - October 20, 1994 - New Century Beverage Company, 1150 Park Avenue, Emeryville, California

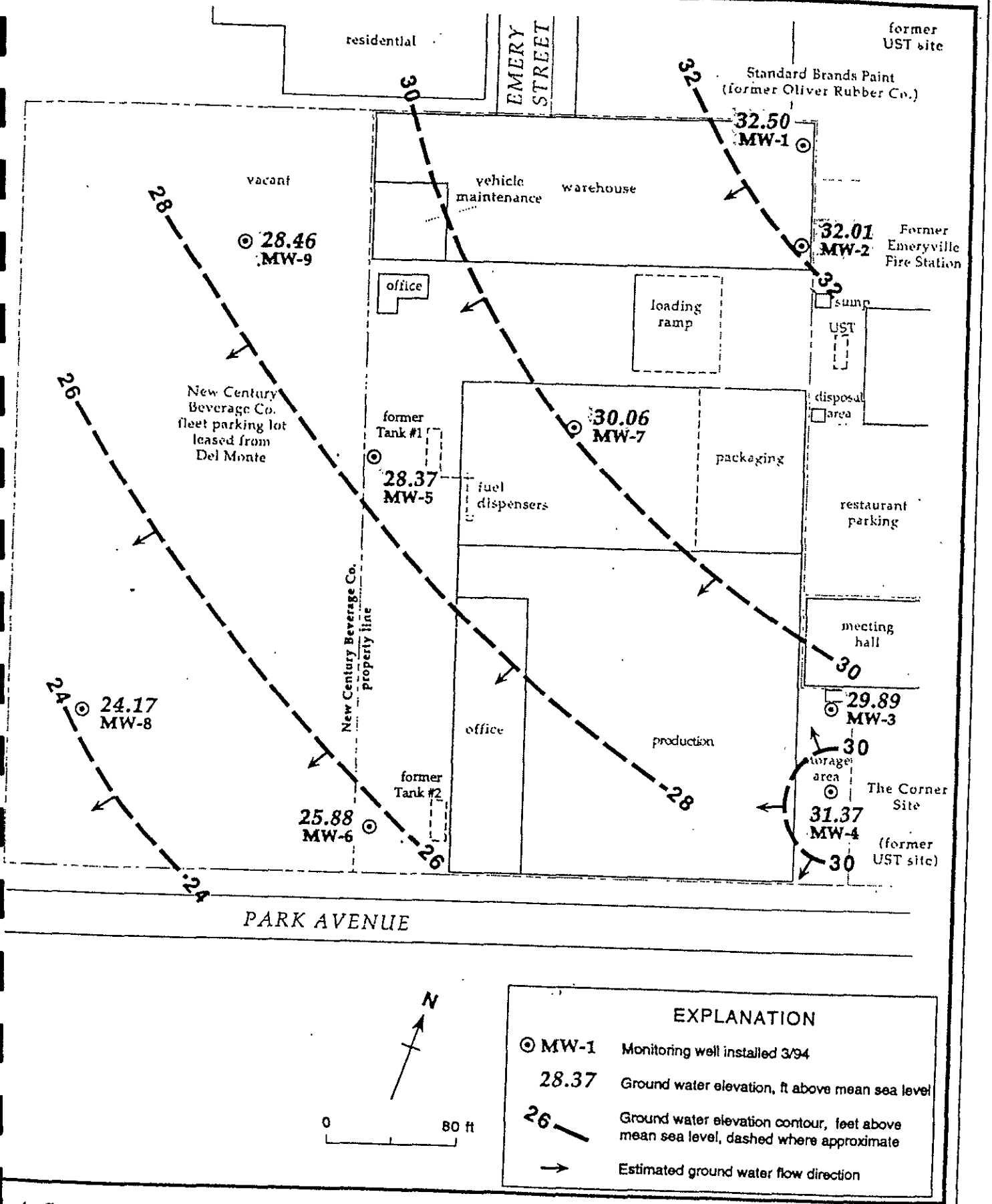


Figure 4. Ground Water Elevation Contours and Estimated Flow Direction - April 15, 1994 - New Century Beverage Company, 1150 Park Avenue, Emeryville, California

11/17/94

APPENDIX D

TIER 1 RBSL CALCULATIONS

		Commercial/Industrial RBSLs							
Chemical Specific Parameters		Benzene	Toluene	EB	Xylenes	Naphth.	Fluorene	Fluoranth.	Pyrene
Carcinogenic/noncarcinogenic		c	nc	nc	nc	nc	nc	nc	nc
Henry's Constant	H	0.22	0.26	0.32	0.29	0.049	4.87E-03	2.79	2.91E-07
Air Diffusion Coefficient (cm^2/s)	D^{air}	9.30E-02	0.085	0.076	0.072	0.072	3.63E-02	3.02E-02	2.72E-02
Water Diffusion Coefficient (cm^2/s)	D^{wat}	1.10E-05	9.40E-06	8.50E-06	8.50E-06	9.40E-06	7.88E-06	6.35E-06	7.24E-06
Effective Diffusion Coefficient soil (cm^2/s) calc	D^{eff}_s	7.26E-03	6.63E-03	5.93E-03	5.62E-03	5.62E-03	2.84E-03	2.36E-03	1.50E-01
Carbon - Water Sorption Coefficient (L/kg)	k_{oc}	38	134.90	95.5	239.9	1288.2	7244.35	38018.94	38018.9
Log carbon-water sorption (calculated) (L/kg)	Log Koc	1.58	2.13	1.98	2.38	3.11	3.86	4.580000004	4.58
Soil-water sorbtion coeff (calculated)	k_s	0.38	1.35	0.96	2.40	12.88	72.44	380.19	380.19
Solubility (mg/l)	S	1750	535	152	198	31	1.69	0.206	0.132
Reference dose oral	RfDo		0.2	0.1	2	0.004	0.04	0.04	0.03
Reference dose - inhal	RfDi		0.11	0.29	2	0.004	0.04	0.04	0.03
Cancer slope factor-inhal (kg-day/mg)	SFi	0.1							
Cancer slope factor- oral (kg-day/mg)	SFo	0.1							
Calculated parameters									
Volatilization factors, subsoil -> outdoor (mg/m^3	VFsamb	1.10E-03	3.94E-04	1.27E-03	1.10E-03	2.00E-04	1.02E-05	2.50E-03	3.23E-08
Vol factor surficial soil-ambient air (1)	VFss-1	6.69E-08	4.00488E-08	4.89598E-08	2.96589E-08	5.37E-09	5.09E-10	4.84E-09	1.25E-11
Vol factor surficial soil - ambient air (2)	VFss-2	7.19E-06	7.1912E-06	7.1912E-06	7.1912E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06
Max vol factor (correction to ASTM)	VFss	7.19E-06	7.1912E-06	7.1912E-06	7.1912E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06
Surficial soil part - ambient air	VFp	2.3E-12	2.3E-12	2.3E-12	2.3E-12	2.30E-12	2.30E-12	2.30E-12	2.30E-12
Soil conc for sat vapor and pore-water (mg/kg)	Csat	847.74	780.73	163.33	497.76	401.76	122.55	78.42	50.19
Commercial/Industrial RBSLs									
RBSL - outdoor ambient air (ug/m^3 - air)		**1.43**	**562**	**1482**	**10220**	**20**	**204**	**204**	**153**
RBSL - subsurface soil to outdoor air (mg/kg)		**1.30**	**1427**	**1171**	**9317**	**102**	**20002**	**82**	**4749129**
RBSL - surficial soil (mg/kg)		**28.34**	**18453**	**10974**	**202430**	**1368**	**13684**	**13684**	**10263**
RBSL - gw to outdoor air (mg/l)		**52.82**	**2.09E+04**	**5.33E+04**	**4.08E+05**	**2.00E+03**	**1.50E+05**	**2.81E+03**	**3.11E+07**
RBSL - gw to indoor air (mg/l)		**0.214**	**81.79**	**203.37**	**1587.54**	**12.28**	**1874.31**	**9.67**	**435497.12**
Note RBSL = >RES if calculated RBSL > calculated Csat; =>S if calculated RBSL > solubility									
Calculated using Tier 1 methodology. Adjusted for CA benzene cancer slope factor									
Target HI = 1, target cancer risk = 1E-5									
Groundwater pathway calculated parameters									
Vol factor gw->ambient air	VFwamb	2.71E-05	2.69E-05	2.78E-05	2.51E-05	1.02E-05	1.36E-06	7.29E-05	4.93E-09
Effective Diffusion Coefficient gw(cm^2/s) calc	D^{eff}_{ws}	1.11E-03	9.31E-04	7.82E-04	7.77E-04	1.88E-03	2.51E-03	2.35E-04	1.52E-01
Effective Diffusion Coefficient cap(cm^2/s) calc	D^{eff}_{cap}	2.17E-05	1.80E-05	1.50E-05	1.50E-05	4.66E-05	3.19E-04	4.34E-06	4.84E+00
Effective Diffusion Coefficient crack(cm^2/s) ca	D^{eff}_{crack}	7.26E-03	6.63E-03	5.93E-03	5.62E-03	5.62E-03	2.84E-03	2.36E-03	1.50E-01
Vol factor gw->enclosed space air	VFwesp	6.68E-03	6.87E-03	7.29E-03	6.44E-03	1.66E-03	1.09E-04	2.11E-02	3.52E-07

		Construction RBSLs							
Chemical specific parameters		Benzene	Toluene	EB	Xylenes	Naphth.	Fluorene	Fluoranth.	Pyrene
Carcinogenic/noncarcinogenic		c	nc	nc	nc	nc	nc	nc	nc
Henry's Constant	H	0.22	0.26	0.32	0.29	0.049	4.87E-03	2.79	2.91E-07
Air Diffusion Coefficient (cm^2/s)	D^{air}	9.30E-02	0.085	0.076	0.072	0.072	3.63E-02	3.02E-02	2.72E-02
Water Diffusion Coefficient (cm^2/s)	D^{wat}	1.10E-05	9.40E-06	8.50E-06	8.50E-06	9.40E-06	7.88E-06	6.35E-06	7.24E-06
Effective Diffusion Coefficient soil (cm^2/s) calc	D^{eff}_s	7.26E-03	6.63E-03	5.93E-03	5.62E-03	5.62E-03	2.84E-03	2.36E-03	1.50E-01
Carbon - Water Sorption Coefficient (L/kg)	k_{oc}	38	134.90	95.5	239.9	1288.2	7244.35	38018.94	38018.9
Log carbon-water sorption (calculated) (L/kg)	Log Koc	1.58	2.13	1.98	2.38	3.11	3.86	4.58	4.58
Soil-water sorbtion coeff (calculated)	k_s	0.38	1.35	0.96	2.40	12.88	72.44	380.19	380.19
Solubility (mg/l)	S	1750	535	152	198	31	1.69	0.206	0.132
Reference dose oral	RfDo		0.2	0.1	2	0.004	0.04	0.04	0.03
Reference dose - inhal	RfDi		0.11	0.29	2	0.004	0.04	0.04	0.03
Cancer slope factor-inhal (kg-day/mg)	SFi	0.1							
Cancer slope factor- oral (kg-day/mg)	SFo	0.1							
Calculated parameters									
Volatilization factors, subsoil -> outdoor (mg/m^3	VFsamb	1.10E-03	3.94E-04	1.27E-03	1.10E-03	2.00E-04	1.02E-05	2.50E-03	3.23E-08
Vol factor surficial soil-ambient air (1)	VFss-1	6.69E-08	4.00E-08	4.90E-08	2.97E-08	5.37E-09	5.09E-10	4.84E-09	1.25E-11
Vol factor surficial soil - ambient air (2)	VFss-2	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06
Max vol factor (correction to ASTM)	VFss	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06	7.19E-06
Surficial soil part - ambient air	VFp	2.3E-12	2.3E-12	2.3E-12	2.3E-12	2.30E-12	2.30E-12	2.30E-12	2.30E-12
Soil conc for sat vapor and pore-water (mg/kg)	Csat	847.74	780.73	163.33	497.76	401.76	122.55	78.42	50.19
Construction RBSLs									
RBSL - outdoor ambient air (ug/m^3 - air)		**17.89**	**7026**	**18524**	**127750**	**256**	**2555**	**2555**	**1916**
RBSL - subsurface soil to outdoor air (mg/kg)		**16.28**	**17836**	**14632**	**116457**	**1276**	**250029**	**1023**	**59364108**
RBSL - surficial soil (mg/kg)		**3.5E+02**	**2.3E+05**	**1.4E+05**	**2.5E+06**	**1.7E+04**	**1.7E+05**	**1.7E+05**	**1.3E+05**
RBSL - gw to outdoor air (mg/l)		**660.24**	**2.61E+05**	**6.66E+05**	**5.10E+06**	**2.50E+04**	**1.88E+06**	**3.51E+04**	**3.89E+08**
RBSL - gw to indoor air (mg/l)		**2.678**	**1.02E+03**	**2.54E+03**	**1.98E+04**	**1.54E+02**	**2.34E+04**	**1.21E+02**	**5.44E+06**
Calculated using Tier 1 methodology, assuming 2 year construction duration. Adjusted for CA benzene cancer slope factor									
Target HI = 1, target cancer risk = 1E-5									
Groundwater pathway calculated parameters									
Vol factor gw->ambient air	VFwamb	2.71E-05	2.69E-05	2.78E-05	2.51E-05	1.02E-05	1.36E-06	7.29E-05	4.93E-09
Effective Diffusion Coefficient gw(cm^2/s) calc	D^{eff}_{ws}	1.11E-03	9.31E-04	7.82E-04	7.77E-04	1.88E-03	2.51E-03	2.35E-04	1.52E-01
Effective Diffusion Coefficient cap(cm^2/s) calc	D^{eff}_{cap}	2.17324E-05	1.80072E-05	1.49801E-05	1.49977E-05	4.6596E-05	0.000319273	4.34299E-06	4.837106311
Effective Diffusion Coefficient crack(cm^2/s) ca	D^{eff}_{crack}	7.26E-03	6.63E-03	5.93E-03	5.62E-03	5.62E-03	2.84E-03	2.36E-03	1.50E-01
Vol factor gw->enclosed space air	VFwesp	6.68E-03	6.87E-03	7.29E-03	6.44E-03	1.66E-03	1.09E-04	2.11E-02	3.52E-07

CALCULATION SHEET

WEISS ASSOCIATES

Sheet No. 1 of 84

Project No. 14-1239-01 SUBJECT: PEPSI GREENVILLE RBCA — BAH TIER 1 RBSLs.

By [illegible] Date 10/9/96

Chkd. By TF Date 10/25/96

OBJECTIVE: CALCULATE TIER 1 RBSLs FOR FLUORENE, PYRENE, FLUORANTHENE USING RfD VALUES + NAPHTHALENE TIER 1 RBSLs FOR GW PATHWAYS.

ASSUME: RfD DATA AS PRESENTED IN ASTM TABLE X1.2 + US EPA REGION IX PRGs, 2nd HALF 1995

Inhal / Oral RfD, mg/kg-day

COMPOUND	ASTM X1.2	PRGs 2nd 1/2 1995
Naphthalene	0.004	0.04
Fluorene	0.04	0.04
Pyrene	0.03	0.03
Fluoranthene	0.04	0.04

	Solubility (ASTM Table X1.2)	H Henry's Constant (dimen.)
Naphthalene	= 31 mg/L	0.049
Fluorene	= 1.69 mg/L	0.0049
Pyrene	= 0.132 mg/L	2.9E-7
Fluoranthene	= 0.206 mg/l	2.79

OBSERVE: EPA & ASTM agree on RfD for Fluorene, Pyrene, Fluoranthene. ASTM RBSLs for Naphthalene based on more conservative value.

CALCULATION SHEET

WEISS ASSOCIATES

Sheet No. 2 of 4

Project No. 14-1234-01 SUBJECT: POST EMERGENCY RBCA. PART TIER 1 RBSL's.

By [illegible] Date 10/9/96

Chkd. By TF Date 10/25/96

CALC RBSL FOR GW INGESTION

ASSUME: FROM TABLE Y.2.3, OBSERVE RBSL IS A FUNCTION OF RfD VALUE.

$$\text{TIER 1 } RBSL_{GW-INGESTION} = RBSL\left(\frac{mg}{L}\right) = \frac{THQ \cdot RfD_o \cdot BW \cdot AT_n \times 365}{IR \cdot EF \cdot ED}$$

OR

$$RBSL\ \frac{mg}{L} = Const \times RfD_o$$

Therefore, FOR A GIVEN PAH:

$$\frac{RBSL_{NAPH}}{RBSL_{FLUORENE}} = \frac{RfD_{NAPH}}{RfD_{FLUORENE}}$$

AND

$$RBSL_{FLUORENE} = RBSL_{NAP} \times \frac{RfD_{FL}}{RfD_{NAP}}$$

ASSUME: $RBSL_{GW-ING}$ FOR NAPHTHALENE $\cong$ 0.409 mg/L COMMERCIAL/INDUSTRIAL $\cong$ 0.146 mg/L RESIDENTIAL

Therefore, COMMERCIAL/INDUSTRIAL

	$RBSL_{GW-ING}$	$RBSL_{GW-OUTDOOR}$	$RBSL_{GW-INDOOR}$
NAPHTHALENE	0.409	>31 = >S	12.3
FLUORENE	4.09	7310 = >S	123
PYRENE	3.07	7232 = >S	92.2
FLURANTHENE	4.09	7310 = >S	123

SEE CALCS NEXT PG

SEE CALCS NEXT PG

RESIDENTIAL	RBSL-GW ING	RBSL GW OUTDOOR	RBSL GW-INDOOR
NAPHTHALENE	0.146	>31 = >S	4.74
FLUORENE	1.46	>310 = >S	47.4
PYRENE	1.10	>232 = >S	35.6
FLUORANTHENE	1.46	>310 = >S	47.4

APPENDIX E

TIER 2 SSTL CALCULATIONS

Vapor Pathway Risk Screening Model, Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, CA

WA implementation of Jury model, from Sanders and Stern 1994

Appendix E - CALCULATIONS - Commercial Receptor - Soil to Indoor Air SSTL

Diffusivity Parameters (symbol notation from ASTM for consistency)

Source			
		Chemical Specific Parameters	
		benzene	Chemical Name
ASTM 95	H	0.222	Henry's Constant
Calculated	Thalf	91	Contaminant Half Life (d)
Calculated	μ	2.772589	First order rate constant ($years^{-1}$)
ASTM 95	D^{air}	9.30E-06	Air Diffusion Coefficient (m^2/s)
ASTM 95	D^{wat}	1.10E-09	Water Diffusion Coefficient (m^2/s)
ASTM 95	f_{oc}	0.01	Organic Carbon Fraction
ASTM 95	K_{oc}	0.038	Organic Carbon Partition Coefficient (m^3/Kg) (Log Koc = 1.58)
		Soil Specific Parameters	
ASTM 95	ρ_s	1700	Bulk Density(kg/m^3)
ASTM 95	θ_{as}	0.26	Air Content (v/v)
ASTM 95	θ_{ws}	0.12	Water Content (v/v)
ASTM 95	θ_t	0.38	Porosity (v/v)
calc, Jury	D^{eff}_{soil}	6.140793	Effective Diffusion Coefficient - Soil (m^2/year)
		Building Floor Parameters	
Lindeburg	$\rho_{s,concrete}$	2,378	Bulk Density (kg/m^3) 150 lb/ft^3 concrete with 1% air by volume
ASTM 95	n	0.01	Areal Fraction of Cracks in Floor
ASTM 95	$L_{concrete}$	0.15	Concrete Slab Thickness (m)
Calculated	$\theta_{as,concrete}$	0.01	Concrete Air Content (v/v)
Calculated	$\theta_{ws,concrete}$	0	Concrete Water Content (v/v)
Calculated	$\theta_{t,concrete}$	0.01	Concrete Porosity (v/v)
calc, Jury	$D^{eff}_{concrete}$	0.154821	Effective Diffusion Coefficient - Concrete (m^2/year)

Dose Integration Parameters

	Integration Constants	
ICs	969.5384	ICs=(Co*A*I)/Qb (mg/m)
	Integration Time Limits	
t_o	0.01	Lower time Limit (years)
t_f	25	Upper time Limit (years)
Intervals	2000	Number of intervals of Integration
dt	0.01	Finite time differential (years)

Results

	Integration Error Estimate		
Integration Error (%) =	0.1731	OK - Integration Error is < 1%	
	Chemical Dose Calculation		
Calculated Dose (mg) =	107.6649	=	6.0E-06 risk
Acceptable Dose (mg)	179	=	1.0E-05 risk
	Calculated SSTL		
SSTL (mg/kg)	2.82	Soil Vapor Intrusion to Indoor Air	

Formulas Presented on Following Page

Site Specific Parameters (symbol notation consistent with Sanders and Stern)

Site Spec	C_{soil}	1.70	Representative Soil Concentration (mg/kg)	Boring B-40, 10 ft depth, 10/10/94
Calculated	Co	2.89	Soil Concentration by Volume (g/m^3)	using 1.7 density
Site Spec	L	0.30	Depth to Contamination (m)	first detected benzene at 1 ft
Site Spec	A	3679	Zone of Influence, Building Area (m^2)	assumes 120 x 330 ft building over plume
ASTM 95	Qb	9139	Building Ventilation Rate (m^3/Hr)	ht= 300 cm(ASTM 95), vent rate = .00023/sec (ASTM 95)
ASTM 95	I	20	Inhalation volume (m^3/day)	20 m^3/day(ASTM 95)

Vapor Pathway Risk Screening Model, Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, CA

WA implementation of Jury model, from Sanders and Stern 1994

Appendix E - CALCULATIONS - Commercial Receptor - Soil to Indoor Air SSTL

Formulas

Diffusivity

$$D^{eff} = \frac{\left(\theta_{as}^{10/3} D^{air} H + \theta_{ws}^{10/3} D_{wat}\right)/\theta_t^{2}}{\left(\rho_s f_{oc} K_{oc} + \theta_{ws} + \theta_{as} H\right)}$$

Dose

$$Dose = \frac{C_0 AI}{Q_b} \int_0^t e^{\left(-\mu t - \frac{L}{4D^{eff} t}\right)} \left(\frac{D^{eff}}{\pi t}\right)^{1/2} dt$$

For transport media with more than one Diffusivity
ie. Soil Diffusivity and Building Foundation Diffusivity

$$Dose = \frac{C_0 AI}{Q_b} \int_0^t \frac{1}{\frac{1}{X_1} + \frac{1}{X_2}} dt$$

Where

$$X_1 = e^{\left(-\mu t - \frac{L}{4D^{eff}_{soil} t}\right)} \left(\frac{D^{eff}_{soil}}{\pi t}\right)^{1/2}$$

$$X_2 = e^{\left(-\mu t - \frac{L_{concrete}}{4D^{eff}_{concrete} t}\right)} \left(\frac{D^{eff}_{concrete}}{\pi t}\right)^{1/2}$$

Vapor Pathway Risk Screening Model, Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, CA

WA implementation of Jury model, from Sanders and Stem 1994

Appendix E - CALCULATIONS - Commercial Receptor - Soil to Outdoor Air SSTL

Diffusivity Parameters (symbol notation from ASTM for consistency)

Source			
		Chemical Specific Parameters	
		benzene	Chemical Name
ASTM 95	H	0.222	Henry's Constant
Calculated	Thalf	91	Contaminant Half Life (d)
Calculated	μ	2.772589	First order rate constant (years^{-1})
ASTM 95	D^{air}	9.30E-06	Air Diffusion Coefficient (m^2/s)
ASTM 95	D^{wat}	1.10E-09	Water Diffusion Coefficient (m^2/s)
ASTM 95	f_{oc}	0.01	Organic Carbon Fraction
ASTM 95	K_{oc}	0.038	Organic Carbon Partition Coefficient (m^3/Kg)
			(Log Koc = 1.58)
		Soil Specific Parameters	
ASTM 95	ρ_s	1700	Bulk Density(kg/m^3)
ASTM 95	θ_{as}	0.26	Air Content (v/v)
ASTM 95	θ_{ws}	0.12	Water Content (v/v)
ASTM 95	θ_t	0.38	Porosity (v/v)
calc, Jury	D^{eff}_{soil}	6.140793	Effective Diffusion Coefficient - Soil (m^2/year)

Dose Integration Parameters

	Integration Constants	
ICs	2.23	ICs=(Co*A*I)/Qb (mg/m)
	Integration Time Limits	
t_o	0.01	Lower time Limit (years)
t_f	25	Upper time Limit (years)
Intervals	2000	Number of intervals of Integration
dt	0.01	Finite time differential (years)

Results

Integration Error Estimate

Integration Error (%) = 1.39E-01 OK - Integration Error is < 1%

Chemical Dose Calculation

Calculated Dose (mg) =	2.55	=	1.4E-07 risk
Acceptable Dose (mg)	179	=	1.0E-05 risk

Calculated SSTL

SSTL (mg/kg) 119 Soil Vapor to Outdoor Air

Site Specific Parameters (symbol notation consistent with Sanders and Stem)

Site Spec	C_{soil}	1.70	Representative Soil Concentration (mg/kg)	Boring B-40, 10 ft depth, 10/10/94
Calculated	Co	2.89	Soil Concentration by Volume (g/m^3)	using 1.7 density
Site Spec	L	0.30	Depth to Contamination (m)	first detected benzene at 1 ft
ASTM 95	δ	2	Ambient Air Mixing height (m)	
ASTM 95	Γ	15	Width of Source Area Parallel to Wind (m)	
ASTM 95	U_{air}	2.25	Ambient Wind Speed (m/sec)	
ASTM 95	I	20	Inhalation volume (m^3/day)	

Formulas

Diffusivity

$$D^{eff} = \frac{\left(\theta_{as}^{10/3} D^{air} H + \theta_{ws}^{10/3} D_{wat}\right)/\theta_t^{2}}{\left(\rho_s f_{oc} K_{oc} + \theta_{ws} + \theta_{as} H\right)}$$

Dose

$$Dose = \frac{C^{o} \Gamma I}{U_{air}\delta} \int_{o}^{f} e^{\left(-\mu - \frac{L^{2}}{4 D^{eff} t}\right)} \left(\frac{D^{eff}}{\pi t}\right)^{1/2} dt$$

Vapor Pathway Risk Screening Model, Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, CA

WA implementation of Jury model, from Sanders and Stem 1994

Appendix E - CALCULATIONS - Commercial Receptor - Ground Water to Indoor Air SSTL

Diffusivity Parameters (symbol notation from ASTM for consistency)

Source			
		Chemical Specific Parameters	
		benzene	Chemical Name
ASTM 95	H	0.222	Henry's Constant
Calculated	Thalf	365	Contaminant Half Life (d)
Calculated	μ	0.693147	First order rate constant (years^{-1})
ASTM 95	D^{air}	9.30E-06	Air Diffusion Coefficient (m^2/s)
ASTM 95	D^{wat}	1.10E-09	Water Diffusion Coefficient (m^2/s)
ASTM 95	f_{oc}	0.01	Organic Carbon Fraction
ASTM 95	K_{oc}	0.038	Organic Carbon Partition Coefficient (m^3/Kg) (Log Koc = 1.58)
		Soil Specific Parameters	
ASTM 95	ρ_s	1700	Bulk Density(kg/m^3)
ASTM 95	θ_{as}	0.26	Air Content (v/v)
ASTM 95	θ_{ws}	0.12	Water Content (v/v)
ASTM 95	θ_t	0.38	Porosity (v/v)
calc, Jury	D^{eff}_{soil}	6.140793	Effective Diffusion Coefficient - Soil (m^2/year)
		Building Floor Parameters	
Lindeburg	$\rho_{s,concrete}$	2,378	Bulk Density (kg/m^3) 150 lb/ft^3 concrete with 1% air by volume
ASTM 95	n	0.01	Areal Fraction of Cracks in Floor
ASTM 95	$L_{concrete}$	0.15	Concrete Slab Thickness (m)
Calculated	$\theta_{as,concrete}$	0.01	Concrete Air Content (v/v)
Calculated	$\theta_{ws,concrete}$	0	Concrete Water Content (v/v)
Calculated	$\theta_{t,concrete}$	0.01	Concrete Porosity (v/v)
calc, Jury	$D^{eff}_{concrete}$	0.154821	Effective Diffusion Coefficient - Concrete (m^2/year)

Dose Integration Parameters

	Integration Constants	
ICs	570.3167	ICs=(Co*A*I)/Qb (mg/m)
	Integration Time Limits	
t_o	0.01	Lower time Limit (years)
t_f	25	Upper time Limit (years)
Intervals	300	Number of intervals of Integration
dt	0.08	Finite time differential (years)

Results

Integration Error Estimate

Integration Error (%) = 2.81E-01 OK - Integration Error is < 1%

Chemical Dose Calculation

Calculated Dose (mg) =	145.2091	=	8.1E-06 risk
Acceptable Dose (mg)	179	=	1.0E-05 risk

Calculated SSTL

SSTL (mg/L)	2.09	Ground Water Volatilization to Indoor Air

Formulas Presented on Following Page

Site Specific Parameters (symbol notation consistent with Sanders and Stem)

Site Spec	Co	1.7	Representative Ground Water Concentration (mg/L) = (g/m^3)
Site Spec	L	2.31	Depth to Contamination (m)
Site Spec	A	3679	Zone of Influence, Building Area (m^2)
ASTM 95	Qb	9139	Building Ventilation Rate (m^3/Hr)
ASTM 95	I	20	Inhalation volume (m^3/day)

MW-13, 12/20/1995, max in past year
shallowest MW-5 water depth recorded
assumes 120 x 330 ft building over plume
ht= 300 cm(ASTM 96), vent rate = .00023/sec (ASTM96)
20 m^3/day(ASTM 96)

Vapor Pathway Risk Screening Model, Former New Century Beverage Company Facility, 1150 Park Avenue, Emeryville, CA

WA implementation of Jury model, from Sanders and Stern 1994

Appendix E - CALCULATIONS - Commercial Receptor - Ground Water to Indoor Air SSTL

Formulas

Diffusivity

$$D^{eff} = \frac{\left(\theta_{as}^{10/3} D^{air} H + \theta_{ws}^{10/3} D_{wat}\right) / \theta_t^{\,2}}{\left(\rho_s f_{oc} K_{oc} + \theta_{ws} + \theta_{as} H\right)}$$

Dose

$$Dose = \frac{C_0 AI}{Q_b} \int_0^t e^{\left(-\mu t - \frac{L_T^2}{4 D^{eff} t}\right)} \left(\frac{D^{eff}}{\pi t}\right)^{1/2} dt$$

For transport media with more than one Diffusivity
ie. Soil Diffusivity and Building Foundation Diffusivity

$$Dose = \frac{C_0 AI}{Q_b} \int_0^t \frac{1}{\frac{1}{X_1} + \frac{1}{X_2}} dt$$

Where

$$X_1 = e^{\left(-\mu t - \frac{L_T^2}{4 D^{eff}_{soil} t}\right)} \left(\frac{D^{eff}_{soil}}{\pi t}\right)^{1/2}$$

$$X_2 = e^{\left(-\mu t - \frac{L_{concrete}^2}{4 D^{eff}_{concrete} t}\right)} \left(\frac{D^{eff}_{concrete}}{\pi t}\right)^{1/2}$$

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.3

Site Name: Pepsi
Site Location: Emeryville

Completed By: Tim Utterback
Date Completed: 10/30/1996

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

■ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" If Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X Groundwater Ingestion			Groundwater Volatilization to Indoor Air		Groundwater Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/L)	Residential: 2640 feet	Commercial: 2640 feet	Regulatory(MCL): 2640 feet	Residential: (on-site)	Commercial: (on-site)	Residental (on-site)	Commercial: (on-site)	(mg/L	"■" If yes	Only if "yes" left
71-43-2	Benzene	1.7E+0	>Sol	NA	>Sol	NA	NA	NA	NA	>Sol	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-201-BPX-156

RBCA SITE ASSESSMENT

Tier 2 Worksheet 9.2

Site Name: Pepsi
Site Location: Emeryville

Completed By: Tim Utterback
Date Completed: 10/30/1996

SUBSURFACE SOIL SSTL VALUES (> 3 FT BGS)

Target Risk (Class A & B) 1.0E-5
Target Risk (Class C) 1.0E-5
Target Hazard Quotient 1.0E+0

■ MCL exposure limit?
☐ PEL exposure limit?

Calculation Option: 2

SSTL Results For Complete Exposure Pathways ("x" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration	X Soil Leaching to Groundwater			Soil Volatilization to Indoor Air		Soil Volatilization to Outdoor Air		Applicable SSTL	SSTL Exceeded ?	Required CRF
CAS No.	Name	(mg/kg)	Residential: 2640 feet	Commercial: 2640 feet	Regulatory(MCL): 2640 feet	Residential: (on-site)	Commercial: (on-site)	Residential: (on-site)	Commercial: (on-site)	(mg/kg)	"■" If yes	Only if "yes" left
71-43-2	Benzene	1.7E+0	>Res	NA	>Res	NA	NA	NA	NA	>Res	☐	<1

Software: GSI RBCA Spreadsheet
Version: v 1.0

Serial: G-201-BPX-156

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Pepsi
Site Location: Emeryville

Job Identification: 14123901
Date Completed: 10/30/96
Completed By: Tim Utterback

Software: GSI RBCA Spreadsheet
Version: v 1.0

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined

DEFAULT PARAMETERS

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constructn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF.Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (l/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa in	Inhalation rate indoor (m^3/day)	15			20	
IRa out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+03		2.0E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	TRUE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constructn
Groundwater Pathways:				
GW.i	Groundwater Ingestion	TRUE	FALSE	
GW.v	Volatilization to Outdoor Air	FALSE	FALSE	
GW.b	Vapor Intrusion to Buildings	FALSE	FALSE	
Soil Pathways				
S.v	Volatiles from Subsurface Soils	FALSE	FALSE	
SS.v	Volatiles and Particulate Inhalation	FALSE	FALSE	FALSE
SS.d	Direct Ingestion and Dermal Contact	FALSE	FALSE	TRUE
S.l	Leaching to Groundwater from all Soils	TRUE	FALSE	
S.b	Intrusion to Buildings - Subsurface Soils	FALSE	FALSE	

Matrix of Receptor Distance and Location on- or off-site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)	8.0E+04	FALSE	8.0E+04	FALSE
S	Inhalation receptor (cm)		FALSE		FALSE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A&B carcinogens)	***1.0E-05***	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	2	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Commercial/Industrial Chronic	Commercial/Industrial Construction
t	Exposure duration (yr)	30	25	1
A	Contaminated soil area (cm^2)	2.2E+06		1.0E+06
W	Length of affected soil parallel to wind (cm)	1.5E+03		1.0E+03
W gw	Length of affected soil parallel to groundwater (c	1.5E+03		
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02		
delta	Air mixing zone height (cm)	2.0E+02		
Lss	*Definition of surficial soils (cm)*	1.0E+02		
Pe	Particulate areal emission rate (g/cm^2/s)	2.2E-10		

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	*Groundwater infiltration rate (cm/yr)*	*3.0E+01*
Ugw	Groundwater Darcy velocity (cm/yr)	2.5E+03
Ugw.tr	Groundwater Transport velocity (cm/yr)	6.6E+03
Ks	Saturated Hydraulic Conductivity(cm/s)	
grad	Groundwater Gradient (cm/cm)	
Sw	*Width of groundwater source zone (cm)*	
Sd	Depth of groundwater source zone (cm)	
BC	Biodegradation Capacity (mg/L)	
BIO?	Is Bioattenuation Considered	TRUE
phi eff	Effective Porosity in Water-Bearing Unit	
foc sat	Fraction organic carbon in water-bearing unit	1.0E-03

Soil	Definition (Units)	Value		
hc	Capillary zone thickness (cm)	5.0E+00		
hv	Vadose zone thickness (cm)	3.0E+02		
rho	Soil density (g/cm^3)	1.7		
foc	Fraction of organic carbon in vadose zone	0.01		
phi	*Soil porosity in vadose zone*	*0.38*		
Lgw	Depth to groundwater (cm)	3.0E+02		
Ls	Depth to top of affected soil (cm)	1.0E+02		
Lsubs	Thickness of affected subsurface soils (cm)	2.0E+02		
pH	Soil/groundwater pH	6.5		
		capillary	*vadose*	*foundation*
phi.w	Volumetric water content	0.342	0.12	0.12
phi a	Volumetric air content	0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.01	

Dispersive Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersion coefficient (cm)		
ay	Transverse dispersion coefficient (cm)		
az	Vertical dispersion coefficient (cm)		
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

RBCA CHEMICAL DATABASE

Physical Property Data

CAS Number	Constituent	type	Molecular Weight (g/mole) MW	ref	Diffusion Coefficients in air (cm2/s) Dair	re	in water (cm2/s) Dwat	re	log (Koc) or log(Kd) (@ 20 - 25 C) (l/kg) Koc	ref	Henry's Law Constant (@ 20 - 25 C) (atm-m3/mol)	(unitless)	re	Vapor Pressure (@ 20 - 25 C) (mm Hg) Pure Component	ref	Solubility (@ 20 - 25 C) (mg/l) Pure Component	ref	acid pKa	base pKb	ref
71-43-2	Benzene	A	78.1	5	9.30E-02	A	1.10E-05	A	1.58	A	5.29E-03	2.20E-01	A	9.52E+01	4	1.75E+03	A			

Site Name: Pepsi Site Location: Emeryville Completed By: Tim Utterback Date Completed: 10/30/1996

Software version: v 1.0

RBCA CHEMICAL DATABASE

Toxicity Data

CAS Number	Constituent	Reference Dose (mg/kg/day) Oral RfD_oral	ref	Inhalation RfD_inhal	re	Slope Factors 1/(mg/kg/day) Oral SF_oral	ref	Inhalation SF_inhal	ref	EPA Weight of Evidence	Is Constituent Carcinogenic ?
71-43-2	Benzene	-	R	1.70E-03	R	2.90E-02	A	2.90E-02	A	A	TRUE

Site Name: Pepsi Site Location: Emeryville Completed By: Tim Utterback Date Completed: 10/30/1996

Software version: v 1.0

RBCA CHEMICAL DATABASE

Miscellaneous Chemical Data

CAS Number	Constituent	Maximum Contaminant Level MCL (mg/L)	reference	Permissible Exposure Limit PEL/TLV (mg/m3)	ref	Relative Absorption Factors Oral	Dermal	Detection Limits Groundwater (mg/L)	ref	Soil (mg/kg)	re	Half Life (First-Order Decay) (days) Saturated	Unsaturated	ref
71-43-2	Benzene	1.00E-03	CAL DOHS	3.20E+00	OSHA	1	0.5	0.002	C	0.005	S	720	720	H

Site Name: Pepsi Site Location: Emeryville Completed By: Tim Utterback Date Completed: 10/30/1996

Software version: v 1.0

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration in Groundwater value (mg/L)	note	in Surface Soil value (mg/kg	note	in Subsurface Soil alue (mg/kg	note
Benzene	1.7E+0				1.7E+0	

Site Name: Pepsi
Site Location: Emeryville

Completed By: Tim Utterback
Date Completed: 10/30/1996

GROUNDWATER DAF VALUES

(Enter DAF values in the following table)

CONSTITUENT	Dilution Attenuation Factor (DAF) in Groundwater	
	Residential Receptor	Comm./Ind. Receptor
Benzene	3.3E+29	#VALUE!

Site Name: Pepsi
Site Location: Emeryville

Completed By: Tim Utterback
Date Completed: 10/30/1996

Analytical Data (Up to 10 Data Points)

	1 (mg/L)	*2* (mg/L)	*3* (mg/L)	*4* (mg/L)	*5* (mg/L)	*6* (mg/L)	*7* (mg/L)	*8* (mg/L)
Well Name	MW-5	MW-13	MW-8					
Distance from Source	40'	140'	260'					
Date Sampled	10/1/94	10/1/94	10/1/94					
	0.23	0.88	0.0005					