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REVISED SITE ASSESSMENT REPORT
AND CORRECTIVE ACTION PLAN
SUSAN DAVEY PROPERTY
1279/1281 East Main Street
El Cajon, California
SECOR Project No. 08OT.04926.00
April 8, 2004

Prepared For
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1.0 INTRODUCTION

1.1 PURPOSE

The first nine sections of this document present the results of site assessment activities completed by SECOR International Incorporated (SECOR) at the Susan Davey Property (formerly the Wurzell Estate Property). The site is located at 1279-1281 East Main Street in El Cajon, San Diego County, California (Figure 1). Section 10.0 presents a Corrective Action Plan (CAP) to address remediation of the hydrocarbon-impacted soil and groundwater at the site.

The purpose of the site assessment was to further evaluate the vertical and lateral extent of hydrocarbon-impacted soil and groundwater upgradient and downgradient of, and proximal to, the former underground storage tank (UST) excavation and the former fuel dispenser islands. Field activities were conducted in accordance with SECOR's *Work Plan to Perform Additional Site Assessment*, dated March 12, 2001 (Workplan); and the County of San Diego, Department of Environmental Health, Land and Water Quality Division (LWQD) Workplan approval letter, dated April 3, 2001.

1.2 SCOPE OF SERVICES

The following scope of services was performed during the assessment:

- Prepared a site-specific Health and Safety Plan to address potential hazards at the site during assessment activities;
- Obtained a drilling permit from the LWQD for advancement of three soil borings;
- Met with utility representatives to identify and mark locations of subsurface utilities;
- Collected 12 soil vapor samples from six shallow soil boring locations around the Der Wienershnitzel restaurant building (VP-8 through VP-13; see Figure 2); analyzed all of the samples for benzene, toluene, ethylbenzene and total xylenes (BTEX; see Table 4);
- Supervised the excavation of two trenches (Trench #1 and Trench #2) in the former fuel dispensing area, and the advancement of three soil borings (SB-4 through SB-6);
- Collected 16 soil samples from the trench excavation (seven total) and soil borings (nine total); monitored headspace organic vapors in soil samples with an organic vapor analyzer (OVA) during sampling activities; and analyzed soil samples collected during site assessment activities for total petroleum hydrocarbons as gasoline (TPHg), BTEX and methyl-t-butyl ether (MTBE);
- Purged seven groundwater monitoring wells (MW-1 through MW-7); collected representative groundwater sample from each well; and analyzed groundwater

samples collected from monitoring wells MW-1 through MW-7 for TPHg, BTEX, MTBE, and four other fuel oxygenates, which were t-butyl alcohol (TBA), disopropyl ether (DIPE), ethyl-t-butyl ether (ETBE), and t-amyl methyl-ether (TAME);

- Used the benzene soil vapor sample analytical results (Table 4; samples collected on 1/22/02) to perform additional health risk modeling to further evaluate potential excess cancer risk to workers in the Der Wienerschnitzel restaurant located on the site; Performed a survey to evaluate potential sensitive receptors in the site vicinity; and

- Prepared this report to include a discussion of field procedures, findings, conclusions, and recommendations.

2.0 BACKGROUND INFORMATION

2.1 SITE DESCRIPTION

The subject site is located at the southwest corner of the intersection of East Main Street, and Second Street in El Cajon, California. The property is occupied by a Der Wienerschnitzel fast-food restaurant, Los Panchos Restaurant (a Mexican restaurant), an asphalt parking area, and various planters and grass areas (Figure 2).

2.2 SITE BACKGROUND

Initial Investigation

During a Phase I Environmental Site Assessment (ESA) conducted by SECOR, records were found that indicated that the site had been operated as a gasoline station from approximately 1960 through 1982 (Figure 3). A review of Polk Directories for the site listed the occupants as Lee's Shell from 1960 to 1969, and Hudson Oil Company from 1970 to 1982. According to LWQD records, four USTs were removed from the site in 1984 and 1985. Based on a sketch found in the files at the City of El Cajon Fire Department, and a 1973 aerial photograph, the USTs were located in the northeast portion of the site. Currently, this area is partially covered by the footprint of the Der Wienerschnitzel building. No information was available on the size or contents of the USTs. According to LWQD records, no soil sampling was conducted during UST removal.

First Subsurface Soil Assessment

In July 1996, soil borings B-1, B-2, and B-3 (see Figure 2) were advanced to depths ranging from 14 to 18 feet below ground surface (bgs). The borings were drilled to evaluate the potential presence of hydrocarbon impacted soil and groundwater from historic releases from the former UST system. Soil samples were collected at approximately 4-foot depth intervals, and grab groundwater samples were collected from each boring to evaluate groundwater quality. TPHg soil concentrations ranged from 410 milligrams per kilogram (mg/kg) in a soil sample from boring B-2 collected at 6.5 feet bgs (sample B2-6.5) to 10,000 mg/kg in sample B2-11, see Figure 5 and Table 2). No TPHg concentrations above laboratory detection limits were reported in the boring B-1 samples collected at 6, 10.5, 15, and 18 feet bgs; and in three samples collected below the water table in borings B-2 and B-3 (at sample depths ranging from 14 to 18 feet bgs). Benzene concentrations ranged from nondetectable (<0.05 mg/kg) in seven samples to 29 mg/kg in sample B2-11. A total recoverable petroleum hydrocarbon (TRPH) concentration of 6,400 mg/kg was reported for sample B3-11. TPHg concentrations in the grab groundwater samples ranged from 40,000 to120,000 micrograms per liter (mg/L). Similarly, benzene concentrations in the three grab groundwater samples ranged from 89 to 10,000 µg/L (see Table 3).

The preliminary analytical results were forwarded to the LWQD, which opened an unauthorized release case for the site. Based on the soil and groundwater petroleum hydrocarbon constituent concentrations and the location of the site within a beneficial groundwater use area, the LWQD directed that a site assessment be performed to evaluate the extent of hydrocarbon impact to soil and the groundwater.

First Groundwater Conditions Assessment

In March 1996, a SECOR geologist supervised the drilling and sampling of four shallow well borings (MW-1 through MW-4, see Figure 2). Each well boring was completed as a groundwater monitoring well. No TPHg concentrations above the laboratory reportable limit (10 mg/kg) were reported in the soil samples collected from well borings MW-1 through MW-3. One of the three soil samples from well boring MW-4 (the 10-foot depth sample) contained 2,851 mg/kg TPHg with 16 mg/kg benzene (see Figure 5 and Table 2). Following development, each of the newly installed monitoring wells was sampled. The representative groundwater samples from all four wells contained detectable concentrations of TPHg and BTEX constituents. Well MW-2 contained the highest concentrations of each analyzed constituent. The MW-2 groundwater sample contained 174,000 µg/L, with respective BTEX analyte concentrations of 3,940; 3,620; 1,500; and 4,310 µg/L. MTBE was detected only in the MW-1 groundwater sample (at 17.6 µg/L (see Table 3).

First Soil Vapor Survey Collection and Human Health Risk Assessment

On April 19, 1999, a SECOR geologist supervised the advancement of seven shallow soil vapor probes (VP-1 through VP-7) see Figure 2). Soil vapor samples were collected from each newly installed vapor probe. Vapor samples collected from the four vapor probes located adjacent to the Der Wienerschnitzel restaurant building (VP-1 through VP-4) contained benzene concentrations ranging from nondetectable (less than 0.1 micrograms per liter of vapor; µg/L-vapor) to 1,079 µg/L-vapor at 2 feet bgs and from 2.8 µg/L-vapor to 750 µg/L-vapor at 5 feet bgs. By contrast, soil vapor samples collected from the three vapor probes advanced adjacent to the Los Panchos restaurant building (VP-5 through VP-7) contained nondetectable benzene vapor concentrations at both depths (2 and 5 feet bgs). The soil vapor sample analytical results are presented on Table 4. The average of the benzene analytical results was used in the SAM Vapor Risk Assessment Model. Based on the results of the model, SECOR conducted that the increased cancer risk to workers in the two on-site restaurants due to residual benzene vapor concentrations beneath the site presents less than a one-in-one-million increased cancer risk.

Second Groundwater Conditions Assessment

On May 31 and June 7, 2000, a SECOR geologist supervised the drilling and sampling of three additional well borings (MW-5 through MW-7; see Figure 2). Each well boring was completed as a shallow groundwater monitoring well. No TPHg benzene or MTBE concentrations above the laboratory reporting limits were found in the soil samples from well borings MW-5 through MW-7. The laboratory reporting limits were 0.5 to 10 mg/kg for TPHg, 0.005 mg/kg for BTEX constituents, and 0.005 mg/kg for MTBE (see Figure 5 and Table 2). Following development, each of the existing or newly installed monitoring wells was purged and sampled. The groundwater samples from wells MW-1, MW-2 and MW-4 contained detectable concentrations of TPHg and BTEX constituents; those in the sample from well MW-2 were the highest. The MW-2 groundwater sample was found to contain 7,000 µg/L TPHg, with respective BTEX concentrations of 1,100; 340; 420; and 1,000 µg/L. No TPHg or BTEX constituent concentrations above the respective laboratory reporting limits (0.05 to 50 µg/L were found in the groundwater samples from wells MW-3 and MW-5 through MW-7. Similarly, no MTBE concentrations were detected in the groundwater

samples from wells MW-2, MW-3, and MW-5 through MW-7. MTBE concentrations of 52 and 1.2 µg/L were reported for wells MW-1 and MW-4, respectively (see Figure 5 and Table 2).

Subsurface Utility Survey

In June 2000, SECOR personnel conducted a subsurface utility survey. As part of the work scope, SECOR reviewed available subsurface utility maps prepared by San Diego Gas and Electric (SDG&E) (for gas and electric lines), Pacific Bell (for telephone lines), Helix Water District (for water supply lines), and the City of El Cajon (for sanitary sewer lines). The results of the map search were ground-truthed. The purpose of the investigation was to identify potential man-made contaminant migration pathways in the vicinity of the subject property. Several utility lines were determined to be present, at depths ranging from approximately 3 to 5 feet bgs, in the site vicinity. Utility line research also indicated the presence of sewer lines located in the site vicinity. Since the burial depths of these sewer lines were unknown. SECOR concluded that the lines potentially could provide a hydrocarbon migration pathway (see Figure 2).

Current Site Investigation

The results of SECOR's May 2000 groundwater conditions investigation and June 2000 subsurface utility survey were presented to the LWQD in a document, titled Site Assessment Report (SAR), dated August 22, 2000. Following review of the SAR, the LWQD requested that additional site assessment work be performed at the site. Specifically, the LWQD directed that a better determination of the lateral and vertical extent of hydrocarbon-impacted soil in the vicinity of the former UST system be performed. Although not required by the LWQD. SECOR decided to also re-evaluate the potential excess cancer risk to workers at the Der Wienerschnitzel fast-food restaurant based on the analytical results for soil vapor samples VP2-2 and VP2-5 (Table 4); and to perform a survey of potential sensitive receptors in the site vicinity.

The results of this additional site assessment are included in succeeding sections of this report. Section 4.0 presents the results of the off-site well and sensitive receptor surveys. Section 5.0 presents additional benzene soil vapor health risk assessment modeling results in the area of the Der Wienerschnitzel restaurant building. Intrusive site investigation results are presented in Section 6.0. Details of the analytical testing program are provided in Section 7.0. A summary of the findings of this phase of the investigation are presented in Section 8.0. Conclusions regarding the spatial extent (both lateral and vertical) of hydrocarbon-impacted subsurface soils and groundwater and a recommendation for a no further action required determination based on those conclusions are presented in Section 10.0.

3.0 HYDROGEOLOGIC CONDITIONS

3.1 GEOLOGIC SETTING

According to Kennedy (1975), the El Cajon area consists of Holocene-age alluvial sediments, underlain by pre-Tertiary-age granitic rocks of the Southern California Batholith. Drilling and soil sampling activities performed by SECOR personnel indicate that the subject site is underlain by artificial fill overlying Quaternary-age alluvium. Observations made during drilling activities suggest that the site lithology, to a depth of at least 20 feet bgs, generally consists of sands, clayey sands, silty sands, and silts.

Subsurface soil consists of clayey and silty sands, poorly graded sands with clays, and silts with sand from surface to approximately 12 feet bgs, the maximum depth of exploration for the investigation. The soils are identified as artificial fill overlying Quaternary-age alluvium. These results are consistent with the deeper well borings that have been advanced on the site for installation of groundwater monitoring wells MW-1 through MW-7.

3.2 HYDROGEOLOGIC SETTING

According to the California Regional Water Quality Control Board, San Diego Region (RWQC), the subject site is located in the El Cajon Hydrologic Subarea (HSA 7.13) of the Lower San Diego Hydrologic Area (HA 7.10) of the San Diego Hydrologic Unit (HU 7.00). Groundwater in the El Cajon HSA has been designated as beneficial use for municipal and agricultural supply, and potentially beneficial use for industrial service and process water supply. Depth to first encounter of groundwater beneath the subject site varies seasonally from approximately 8 to 11 feet bgs. Groundwater in the shallow aquifer is under unconfined conditions. Therefore, the water table represents the surface of the uppermost aquifer. Groundwater flow direction is toward the northwest at a gradient ranging from 0.009 vertical feet per horizontal feet (ft/ft).

Based on review of a map prepared by the San Diego County Water Authority in 1996, which depicts the boundaries of sensitive aquifers, the site is located near but most likely not within the boundary of a sensitive aquifer (9-16).

4.0 SENSITIVE RECEPTOR AND GROUNDWATER UTILIZATION RESEARCH

4.1 SENSITIVE RECEPTOR RESEARCH

SECOR performed an off-site sensitive receptor survey to evaluate potential adverse impacts of the dissolved gasoline plume on surrounding sensitive receptors. For the purpose of this evaluation, the sensitive receptors researched were domestic or production water supply wells, surface water bodies, schools and day care centers. As part of the evaluation, SECOR performed the following activities: 1) reviewed agency water well databases; 2) reviewed the EcoSearch™ and GeoTracker™ databases; 3) reviewed the U.S.G.S. El Cajon, California 7.5-minute quadrangle topographic map; and 4) performed a windshield survey of properties, located within a 550-foot radius of the site vicinity. SECOR also contacted personnel from the Helix Water District (HWD) for information on sources of potable water for the site vicinity.

4.2 GROUNDWATER UTILIZATION RESEARCH

During the agency database research, SECOR identified five water wells within a one half-mile radius of the subject site. All of the wells were located hydrologically crossgradient with respect to the groundwater flow direction at the site. All of these wells were listed as "destroyed" on the database reviewed at the Department of Environmental Health. None of the identified wells were located within a 500-foot radius of the subject site. SECOR personnel then conducted a field receptor survey (windshield survey) to confirm the existence or absence of the wells identified in the agency database research. None of the listed wells were found within the 500-foot site radius. Moreover, no surface water bodies, schools or day-care facilities were located within a one-half mile radius of the site.

In November 2002, Mr. Joe Young, a Water Systems engineer with the HWD, was contacted by SECOR regarding any plans that HWD might have to install future water supply wells in the vicinity of the Susan Davey Property site. Mr. Young indicated that the HWD currently has no water supply wells, and that there are no plans for HWD to install wells in their service area. This service area includes the vicinity of the intersection of Main Street, East Main Street and Jamacha Road.

Nearby Former Bob's Automotive Site Groundwater Utilization Research

During the late 1990s, SECOR performed site assessment activities at a nearby site (Former Bob's Automotive) also located in the El Cajon HAS with similar hydrogeologic conditions. The Former Bob's Automotive site is located at 1492 East Main Street approximately 4,500 feet to the northeast of the Susan Davey Property site. As part of the assessment activities at the Former Bob's Automotive site, a comprehensive analysis of actual groundwater conditions in the El Cajon HSA, including groundwater quality assessment and an aquifer pumping test, was conducted.

According to the results of the aquifer pumping test at the Former Bob's Automotive site, the uppermost water-bearing zone in the El Cajon HSA can yield more than 200 gallons per day from 4-inch diameter extraction wells. Analytical testing of selected groundwater samples from well MW-2 at the Former Bob's Automotive site contained elevated

concentrations of chloride, nitrates as nitrogen (NO_3-N), total dissolved solids (TDS), and exhibited high electrical conductivity (EC) values. SECOR (1998) determined that the chloride, nitrates, and TDS concentrations all exceeded their respective State drinking water maximum concentration limits (MCLs). According to HWD guidelines, these four parameters (e.g., chloride, NO_3-N, TDS, and EC) are the main indicators of groundwater quality, and thus of groundwater usability for drinking water purposes. Baed on SECOR's field observations, historical laboratory groundwater sampling analytical results, and water supply information obtained from regulatory agencies and from state and local water district authorities, there appears to be a very low probability that shallow groundwater in the vicinity of either the Former Bob's Automotive or nearby Susan Davey Property sites in the El Cajon HSA will ever be used, especially for municipal water supply.

During its groundwater conditions evaluation in the area of the former Bob's Automotive site, SECOR interviewed several knowledgeable HWD personnel, including Mr. Bob Friegden and Ms. Debra Hack. Mr. Friegden was the HWD General Manager and District Engineer. Ms. Hack was HWD's public educator. According to Mr. Friegden, no groundwater well could be pumped (in the HWD service area) for potable water supply without first pre-treating it at the wellhead to remove biological and other contaminants from the groundwater prior to its distribution. Such well head treatment was determined by the HWD to be prohibitively expensive. Mr. Friegden indicated that the HWD was aware of the elevated concentrations of chloride, NO_3-N, TDS, and EC values in shallow groundwater in their service area. A potential future water supplier other than the HWD or private parties would incur significant costs when performing State-mandated monthly monitoring to confirm that the water did not exceed State MCLs. Mr. Friegden concluded that it would be much less expensive for occupants to buy water from the HWD than to treat groundwater at the well head to meet the MCLs. Furthermore, Mr. Friegden confirmed that the City of El Cajon receives all of its water from the HWD (SECOR, 1998).

According to Debra Hack, the HWD historically has operated up to 12 water supply wells within the El Monte Basin in the past. However, Ms. Hack further stated that the HWD has never had any water supply wells in the El Cajon HAS (or basin as she referred to it, since the HWD does not utilize the terms used by the RWQCB). Since the time that imported surface water from the Colorado River Basin became available, the HWD has reduced its production from the El Monte Basin well field to approximately 250 acre-feet per year. Currently, 90 percent of HWD's water comes from the Colorado River Basin, and the remaining 10 percent is from surface runoff to Lake Cuyamaca and to El Capitan Reservoir. According to Ms. Hack, the HWD has never pumped water from the El Cajon HAS and has no plans to do so (SECOR, 1998).

5.0 SOIL VAPOR RISK ASSESSMENT

SECOR performed additional potential human health risk assessment modeling to further evaluate the excess cancer risk posed by subsurface benzene vapors to workers at the Der Wienerschnitzel fast-foot restaurant located on-site. The additional risk assessment modeling was performed using benzene vapor concentrations obtained from the current soil vapor sample analyses. The purpose of the additional risk assessment was to further demonstrate that the benzene remaining beneath the Der Wienershnitzel fast-food restaurant presents less than a one in a million increased cancer risk to workers.

5.1 SOIL VAPOR RISK ASSESSMENT PROCEDURES

On January 22, 2002, SECOR personnel conducted an additional soil vapor survey at the site. The survey included installation and sampling of six soil vapor probes (VP-8 through VP-13; see Figure 3) around the perimeter of the Der Wienerschnitzel fast-food restaurant building. The sampling locations were selected to evaluate the presence of volatile organic compounds (VOCs) in soil vapor beneath the building. The sampling locations were selected to assess areas that had not been covered during the April 1999 soil vapor survey and to re-assess the area around VP-2 (SECOR, 2000). Vapor samples were collected from each probe at approximate depths of 2 and 5 feet bgs.

HP Labs (HP) of Solana Beach, California performed the soil vapor survey. HP (1998) describes the typical sampling procedures used to collect and analyze soil vapor samples at similar sites. The sampling apparatus consists of polyethylene tubing within a 1.5-inch nominal diameter push rod (drive tube), connected to a syringe within a hardened-steel drop-off point. The vapor sampling point is threaded onto the leading edge of a 1.5-inch nominal diameter probe rod and advanced to the desired sampling depth using a Strataprobe® hydraulic direct-push drilling system. Once inserted to the desired depth, the probe rod is retracted approximately one to two inches, thereby exposing the vapor sampling port to the subsurface soil. Approximately three dead volumes of air then are extracted through the syringe to flush the sample probe and tubing prior collecting the sample. Upon completion of vapor purging, the soil vapor samples are collected using a 30-cubic centimeter (cc) vacuum syringe. Each 30-cc syringe is transported to a mobile laboratory on-site for immediate analysis. Each direct-push boring then is backfilled with hydrated granular bentonite and capped with either cold-patch asphalt or cement paste to match the original surface.

HP performed the vapor survey at the site in accordance with the above-described procedures. Downhole pushing and sampling equipment were either changed out (i.e., the disposable vapor sampling points) or thoroughly decontaminated between uses (i.e., undamaged drive tubes). Drive tubes that were bent or otherwise rendered unserviceable were decontaminated and discarded. Decontamination consisted of scrubbing in a tri-sodium phosphate detergent solution, rinsing in a tap water bath, and final rinsing in a deionized water bath.

5.2 SOIL VAPOR SAMPLE ANALYTICAL TESTING PROGRAM

Twelve soil vapor samples were submitted for analysis to an on-site HP mobile laboratory. HP is a state-certified laboratory based in Escondido, California. The soil vapor samples were analyzed for BTEX constituents by U.S. EPA Method 8260B.

5.3 SOIL VAPOR SAMPLE ANALYTICAL RESULTS

Soil vapor sample analytical results, including locations and sample depths, are summarized in Table 4 and on Figure 3. A copy of the HP laboratory report is provided in Appendix A.

Benzene vapor concentrations ranged from 4.1 to 75 µg/L-vapor in the four samples with detectable concentrations. Benzene vapor was not detected in the other eight samples at a concentration greater than the laboratory detection limit, or equipment quantitation limit (EQL) of 1 µg/L-vapor. The EQL for toluene, ethylbenzene, and total xylenes was also 1 µg/L-vapor. Toluene vapor concentrations ranged from 1.3 to 4.1 µg/L-vapor in seven of the samples; ethylbenzene vapor concentrations ranged from 1.2 to 3.9 µg/L-vapor in three samples; and total xylenes vapor concentrations ranged from 1.6 to 4.5 µg/L-vapor in the three samples in which it was detected.

As would be expected, the highest BTEX vapor concentrations were found in the 5-foot sample from vapor probe VP-10 (sample VP10-5) for benzene, ethylbenzene and total xylenes; and the 5-foot sample from VP11 (sample VP11-5) for toluene. As shown on Figure 3, sample VP10-5 was collected near the northeast corner of the Der Wienerschnitzel building; and sample VP11-5 was taken at the northwest corner of a grassy area to the northwest of the building. Soil vapor probe VP10 is located adjacent to former UST excavation, and probe VP11 is located downgradient of the former UST excavation. Also, both of these probes and respective samples are located in the vicinity of VP-2.

5.4 SOIL VAPOR MIGRATION AND RISK ASSESSMENT

SECOR used the benzene soil vapor sample analytical data in Table 4 to estimate the potential excess cancer risk to humans resulting from diffusion of benzene vapor (the selected target compound) from hydrocarbon-impacted soil and groundwater, through the vadose zone and into the Der Wienerschnitzel restaurant building built on a typical slab-on-grade foundation. The benzene vapor concentrations in the most shallow (2-foot bgs) samples were averaged to derive a single value for running the SAM Vapor Risk Model. Where actual analytical concentrations were less than the laboratory detection limit, the detection limit of 1 µg/L-vapor was used to calculate the average benzene soil vapor concentration.

In accordance with the current and foreseeable future use of the site, conservative SAM commercial/industrial worker exposure criteria were used. The soil vapor migration and risk assessment calculations were performed using the SAM Vapor Risk Assessment Model (Version; November 1999; Revised: January 8, 2002). The calculations were completed using SAM default, site-specific, and updated parameters including those indicated below.

- Slab Attenuation Factor = 0.1 (SAM conservative default for an exiting slab);
- Ventilation Rate = 0.83 air exchanges per hour (commercial/industrial default);
- Room Height = 8 feet (2.44 meters; SAM conservative default);
- Total Soil Porosity = 0.3 (SAM conservative default);
- Soil Air Porosity = 0.2 (SAM conservative default);
- Soil Gas Concentration (Measured) = 5.17 µg/L-vapor benzene (site-specific, average of soil vapor sample concentrations at 2 feet; 0.61 meter bgs);
- Depth of Contamination or Soil Gas = 2 feet (0.61 meter);
- Exposure Duration = 7 years (U.S. Department of Labor, Bureau of Labor Statistics; to be conservative, 7 years is approximately 2.7 times the median service industry workers, that includes restaurant workers tenure of 2.6 years for 1983-2003; see Appendix B for references); and
- Hours Per Day = 12 hours (SAM conservative industrial/commercial worker default).

Based on these parameters the benzene total indoor air concentration (C_1) estimated by the SAM Vapor Risk Model is 6.93E-04 (or 6.93×10^{-4}) µg/L-vapor.

Potential excess cancer risk calculations using the benzene C_1 estimate were performed using equations from the U.S. Environmental Protection Agency (EPA) Risk Assessment Guidance (RAG) for Superfund Sites (EPA, 1989) contained in the SAM Vapor Risk Assessment Model. The calculations were completed using the conservative SAM default parameters in the model including those indicated below:

- Slope Factor = 0.1 milligrams per kilograms-day $(mg/kg\text{-}day)^{-1}$;
- Inhalation Rate = 20 cubic meters per day (m^3/day);
- Body Weight = 70 kilogram;
- Averaging Time = 25,550 days (70 years); and
- Reference Dose = 0.0017 mg/kg-day.

The potential excess cancer risk to humans from benzene vapor at 2 feet bgs for workers in the Der Wienerschnitzel restaurant building was calculated to be 6.78E-07 (or 6.78×10^{-7}), equating to an excess cancer probability of 1 in1,474,926. This result indicates that the benzene vapor beneath the Der Wienerschnitzel fast-food restaurant building does not pose a significant threat to human health. A copy of the printouts of the SAM Vapor Risk

Assessment Model spreadsheets for the Susan Davey Property – Der Wienerschnitzel Restaurant Building are presented in Appendix B.

The conservative health risk calculations indicate that, under current subsurface conditions and commercial/industrial exposure criteria, benzene vapor migration into the Der Wienerschnitzel fast-foot restaurant building should not pose a threat to human health of workers above a one-in-a-million risk level. The most conservative concentrations and risk scenarios indicate that the increased potential cancer risk is less than the SAM acceptable cancer risk.

6.0 SITE ASSESSMENT METHODOLOGY

This section presents a description of the field methods and procedures that were used to conduct intrusive investigations of subsurface soil and groundwater conditions at the site.

6.1 PRE-FIELD PREPARATION

6.1.1 Health and Safety Plan

A site-specific Health and Safety Plan was prepared by SECOR prior to initiation of field activities. On-site personnel were required to review the Health and Safety Plan prior to commencement of the site assessment and were instructed to conduct field activities in accordance with plan guidelines.

6.1.2 Drilling Permit

Prior to commencing assessment activities, SECOR submitted a permit application and appropriate fees to the LWQD for the installation of three soil borings. The LWQD approved the permit request on December 10, 2001. A copy of the approved drilling permit is provided in Appendix C.

6.1.3 Underground Utility Clearance

Prior to drilling activities, potential drilling locations were marked on-site and Underground Service Alert (USA) was notified. USA notified local utility companies of the scheduled subsurface investigation, and representatives of the affected utilities marked their underground utilities. In addition, SECOR met with Subsurface Alert, Inc., a private utility locator, to mark on-site underground utilities.

6.2 TRENCHING AND SOIL SAMPLING

In an attempt to determine if abandoned product piping was left in the subsurface of the subject site, SECOR excavated a shallow exploratory trench adjacent to the former location of the fuel dispenser islands. On February 7, 2002, a SECOR geologist supervised the excavation of subsurface soil in this area. Trench 1 was 53 feet in length and approximately 3 feet deep. Similarly, Trench 2 was 58 feet in length and the same depth. Qual-Pac Services performed the excavation work. During the excavation activities, SECOR did not observe any evidence of abandoned product piping or petroleum hydrocarbon impact including stained soil or fuel odors. SECOR used an organic vapor analyzer (OVA) to segregate the soil removed from the trenches during the excavation activities. The OVA registered readings of 0 parts per million volumetric (ppmv) for all of the soil that was removed. The soil excavated from the exploratory trenches was stockpiled on-site. Following the excavation activities, SECOR collected seven soil samples (SS-1 through SS-7) from the floors of the trenches (Figure 4). A portion of each of the stockpiled soil samples was screened for the presence of organic vapors using the OVA. Based on field evidence (including visual observation, olfactory cues and no measurable OVA readings) and the soil sample analytical results (which indicated that no petroleum

hydrocarbons were present in the stockpiled soil samples above method detection limits), the excavated soil was re-used to backfill the trenches.

6.3 DRILLING AND SOIL SAMPLING

On March 5, 2002, a SECOR geologist supervised the drilling and sampling of three soil borings (SB-4, SB-5 and SB-6; see Figure 2 and Figure 5). The borings were drilled by Tri-County Drilling (TCD) using a CME 75 drilling rig equipped with 8-inch outside diameter continuous-flight, hollow-stem augers (HSAs).

During drilling, soil samples were collected at depths of 5, 10 and 12 feet bgs in each boring. The samples were collected, prepared, and screened for the presence of organic vapors using the procedures presented in Appendix D. A SECOR geologist logged the soil cuttings using the visual/manual method for the Unified Soil Classification System (USCS), as prescribed in ASTM Standard D 2488-93. Edited boring logs are provided in Appendix E. Downhole drilling and sampling equipment was decontaminated in accordance with the decontamination procedures described in Appendix D. Soil cuttings generated during drilling activities were placed in 55-gallon drums, labeled, centrally located, and left on-site pending receipt of the results of laboratory analyses and determination of appropriate waste disposal.

6.4 MONITORING WELL PURGING AND SAMPLING

On February 19, 2002, depth to static water (DTW) was measured in wells MW-1 through MW-7 using an electronic water level meter. Following gauging, the wells were purged using disposable Teflon bailers and sampled in accordance with LWQD guidelines (provided in the 2002 SAM Manual). Based on LWQD guidelines, wells MW-1 and MW-3 through MW-7 were characterized as fast recharging; approximately 1.5 borehole volumes of water were removed from each well to allow fresh formational water to enter. Well MW-2 was characterized as slow recharging; approximately one borehole volume of water was removed from this well prior to sampling. Three water-quality indicators (i.e., electrical conductivity, pH, and temperature) were measured repeatedly during purging to assist in evaluating when a sufficient volume of stagnant water had been removed.

Groundwater samples were collected from each well in clean disposable bailers and transferred to acidified 40-ml glass vials. The water samples were delivered to a California-certified analytical laboratory (ZymaX Envirotechnology of San Luis Obispo, California) for chemical analysis. Monitoring well sampling and decontamination procedures are described in Appendix D. DTW and well purging and sampling data were recorded on Monitoring Well Gauging Logs and on Well Purging/Sampling Logs. A copy of these logs is provided in Appendix F. Purged water was placed in two 55-gallon steel drums, labeled, centrally-located, and left on-site pending receipt of laboratory results and determination of appropriate waste disposal.

6.5 WASTE MATERIALS MANAGEMENT

As noted in the preceding sections, soil cuttings and purged groundwater were stored on-site in labeled 55-gallon steel drums. Soil cuttings were waste profiled using the sample

analytical results from the soil borings. Drummed wastewater was categorized on the basis of the groundwater analytical results from the well sampling event. The wastes were handled as follows:

The Soil cuttings were transported by EFR Environmental Services, Inc. (EFR) as non-hazardous materials to Dome Rock Industries, Inc. for treatment and/or disposal. The drummed purge water was transported by EFR as non-hazardous waste to Dome Rock Industries, Inc. for treatment and/or disposal. EFR transported the drummed wastes on March 20, 2002 under a non-hazardous waste manifest. A copy of the waste manifest is provided in Appendix G.

7.0 CHEMICAL TESTING PROGRAM

7.1 CHEMICAL TESTING PROCEDURES

Select soil samples collected during the drilling activities were analyzed by ZymaX Envirotechnology, Inc. (ZymaX) for TPHg, BTEX, and MTBE using EPA Method 8260 and GC/MS combination (equivalent to EPA Method 8260B). In addition, the trench soil samples were analyzed by HP for TPHg using CA DHS Method, and for BTEX and MTBE using EPA Method 8260B. Groundwater samples from the monitoring wells were analyzed by ZymaX for the following analytes: TPHg, BTEX, MTBE, TAME, DIPE and ETBE by Method 8260 and GC/MS combination. This method is equivalent to EPA Method 8260B.

7.2 ANALYTICAL RESULTS

7.2.1 Soil Analytical Results – Trenching

Analytical results are summarized in Table 1; and TPHg, benzene and MTBE concentration distributions are illustrated on Figure 4. A copy of the laboratory report and chain-of-custody documentation is included in Appendix H. No TPHg, BTEX or MTBE concentrations above the respective constituent laboratory detection limits were reported in the seven soil samples (SS-1 through SS-7) collected from the bottom of Trench 1 and Trench 2.

7.2.2 Soil Analytical Results – Drilling

Analytical results are summarized in Table 2; and TPHg and benzene concentration distributions are illustrated on Figure 5. A copy of the laboratory report and chain-of-custody documentation is included in Appendix H.

TPHg concentrations were reported above the laboratory detection limit (<0.5 mg/kg) in four of the nine samples submitted for analysis. Detectable concentrations of TPHg ranged from 80 mg/kg in sample SB-4/10' to 1,800 mg/kg in sample SB-5/12'. The remaining five samples contained nondetectable TPHg concentrations.

Benzene concentrations were reported above the laboratory detection limits (ranging from <0.005 to 0.1 mg/kg) in four of the nine samples submitted for analysis. Detectable benzene concentrations ranged from 0.015 mg/kg in sample SB-6/10' to 3.9 mg/kg in sample SB-5/12'. The remaining five soil samples contained non-detectable benzene concentrations. Similarly, detectable concentrations of toluene, ethylbenzene and total xylenes were found in the same four samples. The maximum concentrations were 44 mg/kg toluene, 22 mg/kg ethylbenzene and 150 mg/kg total xylenes. All of these were found in the 12-foot sample from boring SB-5 (sample SB-5/12'). This boring was located in the north-central portion of the Susan Davey Property between the Los Panchos Restaurant and the Der Wienerschnitzel building. No MTBE concentrations above laboratory detection limits (<0.005 to 0.5 mg/kg) were reported in any of the soil samples submitted for analysis.

7.2.3 Groundwater Sampling Analytical Results

Laboratory analytical results are summarized in Table 3; and the dissolved TPHg; benzene and MTBE concentrations are illustrated on Figure 10. A copy of the laboratory report and chain-of-custody documentation is included in Appendix H.

TPHg concentrations were reported above the laboratory detection limit (<50 µg/L) in three of the seven samples submitted for analysis. Detectable concentrations of TPHg ranged from 480 µg/L in the sample from well MW-4 to 6,300 µg/L in the sample from well MW-2. The remaining four groundwater samples contained non-detectable concentrations of TPHg. Similarly, the groundwater samples from the same three wells (MW-1, MW-2, and MW-4) contained detectable concentrations of BTEX analytes. The most heavily impacted well is well MW-2, which contained 640 µg/L benzene, 83 µg/L toluene, 270 µg/L ethylbenzene and 830 µg/L total xylenes. The lowest detectable BTEX concentrations were 39 µg/L benzene, 0.6 µg/L toluene, 19 µg/L ethylbenzene and 0.9 µg/L total xylenes. With the exception of ethylbenzene (which was collected from well MW-4), all of these values were found in the sample from well MW-1. As shown on Figure 2, well MW-1 is located to the northwest of the Der Wienerschnitzel building (close to vapor point VP11), and well MW-4 is located near the southwest corner of the Los Panchos Restaurant.

MTBE concentrations were reported above the laboratory detection limit (ranging from <0.5 to <20 µg/L) in two of the seven well water samples (samples MW-1 and MW-4). Sample MW-1 contained 78 µg/L MTBE, and sample MW-4 contained 0.7 µg/L MTBE. In addition, all of the groundwater samples were analyzed for four other fuel oxygenates (TBA, DIPE, ETBE and TAME). A TBA concentration (10 µg/L) was found in only sample (from well MW-1). Detectable DIPE concentrations ranged from 0.9 µg/L in sample MW-4 to 680 µg/L in sample MW-2. DIPE concentrations were not detected in four of the samples (samples MW-3 and MW-5 through MW-7). No ETBE or TAME concentrations were reported above their respective laboratory detection limits (which ranged from <0.5 to <20 µg/L) in any of the seven well water samples.

8.0 SITE ASSESSMENT REPORT FINDINGS

Based on the results of the additional site assessment activities described above in Section 3.0 through 7.0, SECOR presents the following findings on site conditions and the impacts of hydrocarbon-impacted soil and groundwater on sensitive receptors in the site vicinity.

8.1 LOCAL HYDROSTRATIGRAPHIC CONDITIONS

Subsurface soil consists of clayey and silty sands, poorly graded sands with clays, and silts with sand from surface to approximately 12 feet bgs, the maximum depth of exploration for this investigation. The soils are identified as artificial fill overlying Quaternary-age alluvium. These results are consistent with the deeper well borings that have been advanced on the site for installation of groundwater monitoring wells MW-1 through MW-7.

No groundwater was encountered during drilling to 12 feet bgs in various portions of the site. However, the reported static water level depths in existing monitoring wells ranged from 8.66 to 10.92 feet bgs. This suggests that groundwater locally is under semi-confined (instead of water table) conditions, since the apparent piezometric rise in the wells is at least 1.08 to 3.34 feet. SECOR calculated the groundwater flow direction to be to the northwest at a gradient of 0.009 ft/ft (Figure 9), using the surveyed well locations, surveyed wellhead elevations from Table 5, and the February 19, 2002 DTW measurements. Depictions Lithologic and hydrostratigraphic relationships in subsurface soils across the site are shown in Figure 6, Figure 7 and Figure 8.

8.2 GROUNDWATER UTILIZATION

Five water wells were identified on various agency databases as being located within a one-half mile radius of the site. However, none of these wells are still in service. No surface water bodies, schools or day care facilities are located within the same one-half mile radius of the site.

The groundwater quality assessment, and current and planned utilization information collected by SECOR for the Susan Davey Property site and nearby Former Bob's Automotive site indicate that the HWD does not consider the groundwater beneath the subject site (located in the El Cajon Basin) to be a feasible source of potable water. According to knowledgeable HWD individuals, it is unlikely that groundwater in the site vicinity would ever be used by HWD as a municipal potable source due to the costs associated with wellhead treatment and with State-mandated MCL compliance monitoring. Groundwater sample analytical results and HWD officials indicate that the uppermost water-bearing zone in the El Cajon Basin contains elevated concentrations of chloride, NO_3-N, TDS, and EC values. All of these parameters exceed their respective State drinking water MCLs (SECOR, 1998). Consequently, the groundwater is considered by the HWD to be non-potable.

Additionally, even if the groundwater beneath the Susan Davey Property site were potable, the subsurface utility lines identified to be present in its immediate vicinity most likely would preclude the installation of a water supply well. It should also be noted that certain

subsurface utility lines such as sewer lines and storm drains have the potential to cause unwanted cross-contamination of water supply wells.

8.3 SOIL VAPOR SURVEY AND RISK ASSESSMENT

The results of the additional soil vapor survey presented in this report confirm that detectable BTEX soil vapor concentrations are present in the subsurface of the site. None of the detected BTEX vapor concentrations pose a threat to the health of workers in the Der Wienerschnitzel fast-food restaurant and Los Panchos Restaurant. Specifically, there is less than a one-in-a-million increased cancer risk for workers in the restaurants who potentially would inhale benzene vapors.

8.4 SOIL ASSESSMENT

Elevated concentrations of TPHg and benzene were found in the 12-foot samples from soil borings SB-4 (located to the north of the Der Wienerschnitzel building) and SB-5 (located midway between the two restaurant buildings in the north central portion of the site). Soil samples from these two borings also contained detectable concentrations of toluene, ethylbenzene and total xylenes; the maximum concentrations of each constituent were found in the 12-foot sample from boring SB-5 (sample SB-5/12').

Soil sample analytical data indicate that soil containing total petroleum hydrocarbons as gasoline (TPHg) concentrations above 100 milligrams per kilogram (mg/kg) is present in the vicinity of the former underground storage tank (UST) excavation and former fuel dispenser islands. Specifically, the impact to soil appears to be present in the vicinity of the release sources and has migrated to the soil/water ("capillary fringe") zone. At this location (i.e., capillary fringe zone), the impact appears to have remained. TPHg concentrations exceeding 100 mg/kg (including a maximum of 10,000 mg/kg in sample B2-11) were reported in soil samples collected from soil borings B2, B3, SB-4, SB-5 and MW-4 at depths ranging from approximately 6.5 to 12.5 feet below ground surface bgs; (a 6-foot thick hydrocarbon-impacted soil zone). Also, it should be noted that in certain areas within the plume, the hydrocarbon impacted soil zone lessens in thickness to approximately 9.5 to 12.5 feet bgs (a 3-foot thick hydrocarbon-impacted soil zone). TPHg concentrations were less than 100 mg/kg in 27 of 35 soil samples collected and analyzed from this area during this and previous phases of site investigation work.

Based on the distribution of soil samples indicating TPHg-impacted soil containing less than 100 mg/kg, the vertical extent of TPHg in soil with concentrations exceeding 100 mg/kg conservatively was estimated to be from 6.5 to 12.5 feet bgs to 9.5 to 12.5 feet bgs (6-foot to 3-foot thick zone of impact) in the vicinity of the former UST excavation and fuel dispensers. The zone of impact was approximated further by assuring that the thickness dividing line of the soil zone of impact (i.e., 6-foot to 3-foot) is approximately 20 feet west of SB-5. Due to the irregular shape of the assessed zone of TPHg-impacted soil and to simplify the TPHg mass calculations, the area of TPHg-impacted soil conservatively was estimated to be rectangular shaped. This rectangular-shaped plume has a dimension of approximately 90 feet wide by 160 feet long by 6 to 3 feet thick. The determination was based on hydrocarbon concentrations and estimates of the vertical and lateral extent of hydrocarbon-impacted soil.

Based on the conservatively estimated rectangular plume area, soil sample TPHg concentrations, and an average soil plume thickness of 6 to 3 feet, SECOR estimates that the volume of impacted soil with TPHg concentrations greater than 100 mg/kg is approximately 2,743 in-place cubic yards. Most of these soil samples appear to have concentrations greater than 1,000 mg/kg. The mass of TPHg in soil is estimated to be 18,253 pounds or 2,795 gallons of gasoline (Table 6). The mass estimate was calculated by multiplying the average TPHg concentrations of the soil within the 100 mg/kg concentration plume area (i.e., 2,241 mg/kg) by the estimated volume of TPHg impacted material by the density of the materials (estimated at 3,000 pounds per cubic yard). Pounds of TPHg were converted to gallons by assuming that one gallon of fuel weighs 6.53 pounds. Refer to Figures 5, 6, 7, and 8 for depictions of the estimated volume of hydrocarbon-impacted soils remaining in place beneath the site.

8.5 GROUNDWATER ASSESSMENT

Groundwater in the shallow aquifer beneath the site has been impacted by motor fuel hydrocarbons, including TPHg, BTEX constituents, MTBE, TBA and DIPE. The horizontal limit of dissolved hydrocarbon impact to groundwater at the site (in all directions) is defined by perimeter wells MW-3, MW-5, MW-6 and MW-7. Samples collected from these wells have not contained dissolved TPHg, benzene or MTBE concentrations above laboratory detection limits. Hydrocarbon-impacted groundwater appears to be limited to the vicinity of wells MW-1 (located near the Der Wienerschnitzel building), MW-2 (located between the two restaurant buildings, but closer to Los Panchos Restaurant) and MW-4 (located near the western wall of the Los Panchos Restaurant), all of which are either located in the center of and/or immediately crossgradient from the former UST excavation and dispenser islands (Figures 9 and 10).

Groundwater samples collected from the four site perimeter wells have contained either low or non-detectable concentrations of dissolved gasoline petroleum hydrocarbons for the last four years. Therefore, based on the groundwater analytical data collected to date, the dissolved hydrocarbon plume appears to be stable and to be limited in Horizontal extent to the vicinity of wells MW-1, MW-2 and MW-4. Figures 11, 12 and 13 depict graphs illustrating dissolved benzene decreasing concentration trends in MW-1, MW-2 and MW-4 (the three wells located in the significantly impacted portion of the site). Although an increase in benzene concentrations were observed in MW-1 (1.6 µg/L to 39 µg/L), the increase is not considered to be significant.

Additionally, low to non-detectable dissolved MTBE concentrations have been reported in groundwater samples collected from two of the six groundwater monitoring wells during the past four years. Dissolved MTBE concentrations in groundwater samples collected from MW-1 have ranged from 17.6 µg/L (sample collected on April 1, 1998) to 78 µg/L (sample collected in mid-February 2002). Based on these analytical data, MTBE is not considered to be a constituent of concern at the site. SECOR believes that the origin of the low concentrations of dissolved MTBE is a release(s) of gasoline products previously used at the subject site.

Since the dissolved-phase gasoline plume (i.e., benzene and, to a lesser extent, MTBE) is associated directly with the residual hydrocarbon-impacted soil within the capillary fringe at

the subject site, it is not possible to preceisely predict the number of years that it will take for the dissolved benzene and dissolved MTBE plumes to degreade naturally (by aerobic biodegradation) to their respective MCLs. Based on the decreasing dissolved benzene and dissolved MTBE concentration trends over the last five years of groundwater sampling data, as well as the old age and stability of the plume, the dissolved benzene and dissolved MTBE concentrations would be expected to degrade to their respective MCLs in several decades (most likely within 30 years). As discussed in Section 4.2, the HWD has no plans for utilizing the groundwater beneath the subject site for potable water supply in the present and in the foreseeable future (extending well beyond the estimated timeframe for the dissolved hydrocarbon constituents to attain their MCL values by unenhanced aerobic biodegradation). Therefore, SECOR considers it reasonable to assume that the HWD will not consider the impacted groundwater in the subject site vicinity to be a potable water source within the above-menitioned degradation timeframe.

9.0 SITE ASSESSMENT REPORT CONCLUSIONS

The following bulleted items describe the pertinent conclusions made for consideration of closure of the case for the subject site.

- SECOR concludes that there are no ongoing UST-related contaminant release sources associated with the Susan Davey Property site. Gasoline products have not been dispensed since 1982, and the known gasoline UST systems were removed in 1985. SECOR also notes that recent shallow exploratory trenching in the vicinity of the former fuel dispenser islands has uncovered no field evidence of product piping or additional USTs at the subject site.

- Use of the impacted groundwater by the HWD or other parties is undesirable at the present time and for the foreseeable future, due to the presence of elevated concentrations of TDS, nitrates, and chlorides. Groundwater beneath the subject site is not now being used as a municipal, domestic and/or agricultural water supply source. SECOR has been informed that HWD has no future plans to use the groundwater in the impacted area. Therefore, SECOR concludes that the groundwater is unlikely to be used during the entire period of time (most likely 30 years) that it will take for the dissolved benzene and MTBE plumes to degrade to their respective MCLs.

- The gasoline release to soil at the subject site has been fully characterized. SECOR estimates that the volume of impacted soil with TPHg concentrations greater than 100 mg/kg is approximately 2,745 in-place cubic yards. The mass of TPHg in soil is estimated to be 18,253 pounds or 2,795 gallons of gasoline.

- The groundwater sample analytical results for the most recent (February 19, 2002) sampling event indicate that the lateral extent of residual groundwater impact has been defined adequately. SECOR concludes that the dissolved-phase gasoline plume is stable and that dissolved benzene and MTBE concentrations are declining and likely will continue to decline to MCLs over an extended period of time.

- No sensitive receptors (e.g., groundwater production wells within one-half mile radius of the site) are threatened by the gasoline released at the site.

- SECOR concludes, on the basis of two soil vapor surveys and several human health risk assessments, that the gasoline released at the site (specifically the carcinogen benzene) presents no significant risk to the health of the workers at the Los Panchos and Der Wienerschnitzel restaurants on the site.

- The timeframe that may be required to allow the dissolved-phase gasoline plume, and particularly its dissolved benzene and dissolved MTBE components, to degrade naturally to their MCLs is uncertain. However, SECOR concludes that the MCL cleanup goals can be achieved by natural biodegradation before the time when the high TDS- and nitrate-impacted groundwater could reasonably be expected to be needed as a potable water source.

10.0 CORRECTIVE ACTION PLAN

This CAP has been prepared In accordance with the California Code of Regulations, Title 23, Division 3, Chapter 16, Article 11. As specified in Article 11, there are three elements that should be included in a CAP. These are: 1) an assessment of the impacts of an unauthorized release from a petroleum UST system to the subsurface; 2) a feasibility study to evaluate alternatives for remediating or mitigating the actual or potential adverse impacts of the unauthorized release; and 3) the establishment of applicable cleanup levels to achieve (for waters having actual or potential beneficial uses) numerical water quality objectives (WQOs) . SECOR believes that the preceding nine sections of this document (which together comprise the SAR) satisfies the first CAP element. The focus of this section will be the other two CAP elements. Because the impacted aquifer has designated beneficial uses, two remedial alternatives that are capable of achieving the WQOs will be evaluated. This is in compliance with a December 15, 2003 directive from the LWQD requiring that the CAP include an evaluation of two viable cleanup strategies for mitigating the hydrocarbon-impacted soil and groundwater at the site.

As required to set forth in the December 15, 2003 LWQD letter, this CAP evaluates two viable clean-up strategies to mitigate hydrocarbon-impacted soil and groundwater at the subject site. The proposed strategies, which are discussed in Sections 10.3 and 10.4 below, are as follows: 1) limited soil excavation followed by implementation of a monitored natural attenuation program; and 2) remediation by natural attenuation (RNA), due to demonstrated dissolved-phase gasoline plume stability, with no further action. Either strategy should be capable of achieving the project objectives.

10.1 ESTABLISHMENT OF APPLICABLE CLEANUP LEVELS

Refer to Section 3.2 for a discussion of the actual or potential beneficial uses of the impacted aquifer, and to Section 4.2 for a discussion of the current and foreseeable future use of the aquifer as a source of water for municipal or agricultural water supply. Despite the facts that the aquifer is not currently being used, and that it is unreasonable to expect that it will be used in the foreseeable future (at least three decades), SECOR understands that the water quality cleanup goals are to be based on the designated actual or potential beneficial uses identified by SDRWQCB in its *Water Quality Control Plan, San Diego Basin (9)*, dated 1996. The applicable WQOs for dissolved benzene and dissolved MTBE for the impacted aquifer are their respective State MCLs, which are 1.0 µg/L benzene and 13.0 µg/L MTBE.

10.2 REMEDIAL ALTERNATIVES SCREENING

SECOR has performed a remedial alternatives technology screening to eliminate remedial technologies that were infeasible or unsuitable for use in removing hydrocarbon-impacted soil in the approximately 8- to 10-foot thick vadose zone at the site. Soil vapor extraction was rejected because of the shallow depth to groundwater, and because it appeared to be too aggressive and costly an approach for cleaning up the limited volume of hydrocarbon-impacted soil that likely contributes to the groundwater impacts at the site. Similarly, air sparging was considered but rejected because of the relatively low concentrations of dissolved-phase gasoline constituents (e.g., benzene and MTBE) that currently are present

at the site. Complete excavation of hydrocarbon-impacted soil in the vadose zone was rejected because it would severely disrupt ongoing commercial enterprises at the site. Limited soil excavation, in effect the removal of hot spots (e.g., soils with TPHg concentrations in excess of 500 mg/kg) was retained for further consideration. Remediation by natural attenuation was retained for further consideration because it can achieve the WQOs with minimal disruption to current site occupant's commercial enterprises.

Both of the retained mitigation strategies rely on the lack of any impact to groundwater resources that reasonably can be expected to be used as potable water sources, the presence of an old and stable plume, and the lack of any significant risk to human health posed by the release.

10.3 LIMITED SOIL EXCAVATION WITH NATURAL ATTENUATION

Excavation and removal of the most significantly-impacted soils (e.g., those with TPHg concentrations in excess of 500 mg/kg) would be highly effective at removing a significant portion of the hydrocarbon-impacted soil that is most likely to be impacting groundwater, particularly in the vicinity of soil borings B-2 and B-3 and well MW-4. Due to the estimated areal extent of impacted soil and its depth below the surface of the site, an approximate 1,750 cubic yards of impacted soil (excluding the volume of clean overburden soil) would have to be removed, sampled for characterization, and then properly handled by recycling, off-site disposed, or off-site thermal treatment. In addition to the extensive remedial excavating, the project would require an extensive backfilling and compaction effort, and the excavation sidewalls would have to be shored to preclude potential structural damage to adjacent utilities and nearby building foundations. Shoring would add significant cost and complication to the soil excavation effort. Following the hot spot soil excavation, it is likely that the remaining hydrocarbon-impacted groundwater would not meet the WQOs. However, the dissolved-phase gasoline plume would then be remediated by natural attenuation (RNA). SECOR anticipates that the RNA process would be significantly shortened due to removal of the most-heavily impacted soil in the vadose zone and capillary fringe.

Remediation to target clean-up levels (i.e., removal/remediation of hydrocarbon-impacted soil and groundwater to the extent practicable) would cost approximately $266,875 over the 2-year duration (Table 7). Refer to Appendix I for the cost estimate spreadsheet.

10.4 REMEDIATION BY NATURAL ATTENUATION AND NO FURTHER ACTION

This strategy would involve remediation by unenhanced natural attenuation (RNA). It is unlikely that RNA will reduce the dissolved hydrocarbon plume. SECOR contends that extensive soil/groundwater removal and/or remediation is impracticable and unnecessary, if the purpose is to avert human health risk or further adverse impacts to the environment. The results of human health risk assessments by SECOR in 1999 and 2002 (reported in Sections 2.0 and 5.0 of this report) reveal that the aged gasoline plume poses no significant excess cancer risk to the workers of the two on-site restaurants. The benzene fraction largely has volatized. Inhalation of benzene vapors from the hydrocarbon-groundwater plume is an incomplete pathway of exposure.

Aerobic biodegradation of dissolved petroleum hydrocarbon constituents is a viable remedial strategy for the dissolved hydrocarbon-impacted groundwater plume. Because the dissolved hydrocarbon plume in the site vicinity is stable, and soil/groundwater removal and/or remediation is unnecessary to achieve the target groundwater clean-up goal (i.e., removal/remediation of hydrocarbon-impact soil and groundwater to the extent practicable), a "No Further Action Required" determination for the site could be made by the LWQD. There would be no significant costs associated with this strategy.

For costing purposes, it is assumed that RNA would not need to be monitored to prove that attenuation of the dissolved gasoline constituents is occurring. Consequently, the only costs that would be incurred would be for proper abandonment of the seven groundwater monitoring wells. The estimated cost associated with monitoring well abandonment is approximately $19,275 (Table 7), which involves the abandonment of 140 linear feet of well casing. Refer to Appendix I for the cost estimate spreadsheet.

10.5 RECOMMENDED MITIGATION APPROACH

Based on review of the site assessment data collected to date, the site appears to meet the eight criteria for administrative closure as a "Low Risk Groundwater Case", as outlined by the SDRWQCB's *Interim Guidance Document*, dated April 1, 1996. Preceding sections of this CAP have provided an adequate discussion of the criteria, which are listed below.

1. *Groundwater has been impacted, the leak has been stopped and on-going sources, including free product (LPH), have been removed or remediated to the extent practicable.*

2. *The site has been adequately characterized.*

3. *The site is located in a Basin without designated municipal and domestic beneficial uses.*

4. *The site is located outside of a sensitive aquifer boundary.*

5. *The dissolved hydrocarbon plume is not migrating.*

6. *No water wells, deeper drinking water aquifers, surface water, or other sensitive receptors are likely to be impacted.*

7. *The site appears to present no significant risk to human health.*

8. *The site appears to present no significant risk to the environment.*

SECOR notes that the Item #3 criterion can be met only if the impacted aquifer is not used for potable water supply during the entire period that it will take for the dissolved benzene and dissolved MTBE plumes to aerobically biodegrade to their respective MCLs. Refer to Section 4.2 and Section 8.5 for substantiating proof that these facts are valid.

SECOR evaluated two viable remediation alternatives for cleaning up the hydrocarbon-impacted soil and groundwater at the site (refer to Section 10.3 and Section 10.4), and identified RNA to be the more cost-effective of the approaches. SECOR believes that RNA can achieve the WQOs for dissolved benzene and dissolved MTBE if sufficient time is allowed to elapse while the groundwater plume undergoes unenhanced aerobic biodegradation. Refer to Section 8.5 for a discussion of the basis for SECOR's conclusion that the plume degradation timeframe will elapse before the aquifer can be reasonably expected to be used as an actual groundwater source for municipal or agricultural water supply.

10.6 CONCLUSIONS AND RECOMMENDATIONS

Based on SECOR's review of the two retained site mitigation strategies, SECOR concludes that RNA is the preferred mitigation approach. SECOR notes that the continuing presence of residual hydrocarbons and dissolved-phase hydrocarbons in the site's subsurface presents no threat to human health, water resources, or the environment. SECOR recognizes that it could take a several decades for the stable dissolved-phase hydrocarbon plume to be fully bioremediated. However, SECOR believes that it is reasonable to assume that there will be no future threats to the human health, water resources, or the environment during this extended RNA period.

SECOR further recommends that the dissolved-phase motor fuel hydrocarbon plume be allowed to be reduced by RNA.

To implement the RNA process and to secure expeditious administrative closure of the subject site (Unauthorized Release #H03126-001) case file, SECOR recommends that the following sequence of events be approved for implementation by the LWQD:

1) The LWQD should review and approve the CAP, and then the LWQD case officer should issue a conditional letter of concurrence for the CAP and for its recommended mitigation approach (e.g., RNA and Well Abandonment).

2) The LWQD should issue a written authorization to SECOR to implement the public notice process (for concerned residents and commercial businesses) and its 30-day comment period.

3) Upon successful completion of the comment period, the LWQD case officer should issue a final concurrence letter for the CAP and its selected remedial alternative (e.g., RNA and Well Abandonment).

4) SECOR should secure all necessary well abandonment permits, encroachment permits, and traffic control plan permits to enable it to decommission all of the groundwater monitoring wells.

5) SECOR should then proceed to properly abandon the seven groundwater monitoring wells in accordance with the approved LWQD well abandonment permit specifications.

11.0 LIMITATIONS

The findings and conclusions contained in this report have been prepared for the specific application to this project and have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental scientific profession currently practicing under similar conditions in the area at the time this investigation was performed. No warranty, either expressed or implied, is made. This report is for the exclusive use of Susan Davey and her representatives.

A potential always remains for the presence of the unknown, unidentified, or unforeseen subsurface contamination. Further evidence against such potential site contamination would require additional subsurface exploration and testing.

12.0 REFERENCES

Technical References

California Code of Regulations (CCR), 1998, identification and listing of Hazardous Waste, Criteria for identifying the Characteristics of Hazardous Waste, Characteristic of Toxicity, Title 22, Chapter 11, Article 2, Section 66261.24.

CCR, 1998, Domestic Water Quality and Monitoring Regulations, Primary Standards – Inorganic Chemicals, Maximum Contaminant Levels-Inorganic Chemicals, Title 22, Chapter 15, Article 4, Section 64431.

CCR, 2000, Domestic Water Quality and Monitoring Regulations, Primary Standards, Organic Chemicals, Maximum Contaminant Levels-Organic Compounds, Title 22, Chapter 15, Article 5.5, Section 64444.

CCR, 2003, Corrective Action Requirements, Title 23, Division 3, Chapter 16, Article 11, Section 2720 et seq.

California Regional Water Quality Control Board, San Diego Region (RWQCB), 1996, Water Quality Control Plan, San Diego Basin (9).

Consultant LWQD, and U.S. Department of Labor References.

County of San Diego, Site Assessment and Mitigation Program (SAM), 2003, 2003 SAM Manual.

County of San Diego, Site Assessment and Mitigation Program (SAM), 2004, 2004 SAM Manual.

County of San Diego Water Authority, 1996, Map Showing Sensitive Aquifer Boundaries.

County of San Diego Department of Environmental Health, Land and Water Quality Division (LWQD) Work Plan Approval Letter, dated April 13, 2001.

Kennedy, M.P. and G.L. Peterson, 1975. Geology of the San Diego Metropolitan Area, California, California Division of Mines and Geology Bulletin 200, Sacramento, California.

U.S. Department of Labor, Bureau of Labor Statistics, 2002, Employee Tenure Summary 1983-2002, Contact: Mr. Randy Ilg (220-691-6378) also see Appendix B of this report.

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Consultant References

SECOR International Inc., 1996. Limited Site Assessment Report, Susan Davey Property, 279/1281 East Main Street, El Cajon, California. SECOR, San Diego, California. August 28.

SECOR International Inc., 1998. Site Assessment Report, Susan Davey Property, 1279/1281 East Main Street, El Cajon, California. SECOR, San Diego, California. April 28.

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SECOR International Inc., 2000. Site Assessment Report, Susan Davey Property, 1279/1281 East Main Street, El Cajon, California. SECOR, San Diego, California. August 22.

SECOR International Inc., 2001. Work Plan to Perform Additional Site Assessment, Susan Davey Property, 1278/1281 East Main Street, El Cajon, California. SECOR, San Diego, California, March 12, 2001.

TABLES

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS - TRENCHING
Susan Davey Property
All concentrations reported in milligrams per kilograms (mg/kg).

Sample ID	Sample Depth (ft. bgs)	Date Sampled	TPHg	B	T	E	X	MTBE
SS-1	3	02/07/02	<10	<0.01	<0.01	<0.01	<0.02	<0.01
SS-2	3	02/07/02	<10	<0.01	<0.01	<0.01	<0.02	<0.01
SS-3	3	02/0702	<10	<0.01	<0.01	<0.01	<0.02	<0.01
SS-4	3	02/07/02	<10	<0.01	<0.01	<0.01	<0.02	<0.01
SS-5	3	02/07/02	<10	<0.01	<0.01	<0.01	<0.02	<0.01
SS-6	3	02/07/02	<10	<0.01	<0.01	<0.01	<0.02	<0.01
SS-7	3	02/07/02	<10	<0.01	<0.01	<0.01	<0.02	<0.01

Notes:
TPHg = Total petroleum hydrocarbons as gasoline (C_6-C_{12})
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
MTBE = Methyl-t-butyl ether
TRPH = Total recoverable petroleum hydrocarbons
bgs = Below ground surface
-- = Not analyzed
<# = Below laboratory detection limit

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - DRILLING
Susan Davey Property
All concentrations reported in milligrams per kilogram (mg/kg).

Sample ID	Sample Depth (bgs)	Date Sampled	TPHg	B	T	E	X	TAME	TBA	DIPE	ETBE	MTBE	TPRH
Previous Assessment Activities - 7/2/96-6/7/00													
B1-6	6	07/02/96	<10	<0.05	<0.05	<0.05	<0.15	--	--	--	--	--	--
B1-10.5	10.5	07/02/96	<10	0.007	<0.005	0.008	0.044	--	--	--	--	--	--
B1-15	15	07/02/96	<10	<0.05	<0.05	<0.05	<0.15	--	--	--	--	--	--
B1-18	18	07/02/96	<10	<0.05	<0.05	<0.05	<0.15	--	--	--	--	--	--
B2-6.5	6.5	07/02/96	410	0.18	<0.5	<0.5	<0.15	--	--	--	--	--	--
B2-11	11	07/02/96	10,000	29	270	120	800	--	--	--	--	--	--
B2-14.5	14.5	07/02/96	<10	<0.05	<0.05	<0.05	<0.15	--	--	--	--	--	--
B3-6.5	6.5	07/02/96	2,100	<5	<5	11	15	--	--	--	--	--	--
B3-11	11	07/02/96	2,800	<0.5	<0.5	26	68	--	--	--	--	--	6,400
B3-15	15	07/02/96	<10	<0.05	<0.05	<0.05	<0.15	--	--	--	--	--	
B3-18	18	07/02/96	<10	<0.05	<0.05	<0.05	<0.15	--	--	--	--	--	--
MW-1/5	5	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-1/10	10	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-2/5	5	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-2/10	10	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-3/5	5	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-3/10	10	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-4/5	5	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-4/10	10	03/25/98	2,851	16.0	148	50.6	349.0	--	--	--	--	--	--
MW-4/15	15	03/25/98	<10	<0.05	<0.05	<0.05	<0.05	--	--	--	--	--	--
MW-5/15	15	05/31/00	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	--
MW-5/20	20	05/31/00	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	--
MW-6/15	15	05/31/00	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	--
MW-6/20	20	05/31/00	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	--
MW-7/15	15	06/07/00	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	--
MW-7-20	20	06/07/00	<0.5	<0.005	<0.005	<0.005	<0.005	<0.005	<0.05	<0.005	<0.005	<0.005	--

TABLE 2
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS - DRILLING
Susan Davey Property
All concentrations reported in milligrams per kilogram (mg/kg).

Sample ID	Sample Depth (bgs)	Date Sampled	TPHg	B	T	E	X	TAME	TBA	DIPE	ETBE	MTBE	TPRH
Current Assessment Activities-03/05/02													
SB-4/5'	5	03/05/02	<0.5	<0.005	<0.005	<0.005	<0.005	--	--	--	--	<0.005	--
SB-4/10'	10	03/05/02	80	<0.1	<0.1	0.4	1.2	--	--	--	--	<0.1	--
SB-4/12'	12	03/05/02	1,400	0.9	21	20	190	--	--	--	--	<0.5	--
SB-5/5'	5	03/05/02	<0.5	<0.005	<0.005	<0.005	<0.005	--	--	--	--	<0.005	--
SB-5/10'	10	03/05/02	960	1.5	18	11	69	--	--	--	--	<0.5	--
SB-5/12'	12	03/05/02	1,800	3.9	44	22	150	--	--	--	--	<0.5	--
SB-6/5'	5	03/05/02	<0.5	<0.005	<0.005	<0.005	0.015	--	--	--	--	<0.005	--
SB-6/10'	10	03/05/02	<0.5	0.015	0.04	0.007	0.028	--	--	--	--	<0.005	--
SB-6/12'	12	03/05/02	<0.5	<0.005	<0.005	<0.005	<0.005	--	--	--	--	<0.005	--

Notes:
TPHg = Total petroleum hydrocarbons as gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
TAME = t-amyl methyl ether
TBA = t-butyl alcohol
DIPE = Diisopropyl ether
ETBE = Ethyl-t-butyl ether
MTBE = Methyl-t-butyl ether
TRPH = Total recoverable petroleum hydrocarbons
bgs = Below ground surface
-- = Not analyzed
<# = Below method reporting limit

TABLE 3
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
Susan Davey Property
All concentrations reported in micrograms per liter (µg/L)

Sample ID	Date Sampled	TPHg	B	T	E	X	MTBE	TBA	DIPE	ETBE	TAME	Total Lead
B1-W	07/02/96	40,000	2,200	76	990	320	NA	NA	NA	NA	NA	NA
B2-W	07/02/96	120,000	10,000	19,000	2,600	20,000	NA	NA	NA	NA	NA	NA
B3-W	07/02/96	56,000	89	49	170	530	NA	NA	NA	NA	NA	NA
MW-1	04/01/98	260	8.9	<2.5	18.4	<5.0	17.6	NA	NA	NA	NA	NA
	05/26/99	150	<0.5	<0.5	0.7	<5.0	48	NA	NA	NA	NA	NA
	06/12/00	150	1.9	<0.5	2.2	<0.5	52	NA	NA	NA	NA	NA
	09/12/00	<500	<2	<2	<2	<6	57	<10	92	<2	<2	NA
	12/12/00	170	1.6	<0.5	5.1	<0.5	54	<0.5	81	<0.5	<0.5	NA
	02/19/02	700	39	0.6	69	0.9	78	10	46	<0.5	<0.5	NA
MW-2	04/01/98	174,000	3,940	3,620	1,500	4,310	<400	NA	NA	NA	NA	NA
	05/26/99	12,000	1,400	980	710	2,200	<20	NA	NA	NA	NA	NA
	06/12/00	7,900	1,100	340	420	1,000	<10	NA	NA	NA	NA	NA
	09/12/00	15,000	2,200	730	990	2,300	<100	<500	730	<100	<100	NA
	12/12/00	8,200	1,100	170	480	910	<50	<500	1,000	<50	<50	NA
	02/19/02	6,300	640	83	270	830	<20	<200	680	<20	<20	NA
MW-3	04/01/98	166	0.9	<0.5	<3.0	2	<0.5	NA	NA	NA	NA	NA
	05/26/99	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	06/12/00	NS	NS	NS	NS	NS	NS	NA	NA	NA	NA	NA
	07/31/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	09/12/00	<500	<2	<2	<2	<6	<2	<10	<2	<2	<2	NA
	12/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	NA	NA
	02/19/02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA
MW-4	04/01/98	9,790	810	613	145	884	<25	NA	NA	NA	NA	<0.1
	05/26/99	1,600	290	160	85	280	<2.0	NA	NA	NA	NA	NA
	06/12/00	600	130	69	34	100	1.2	NA	NA	NA	NA	NA
	09/12/00	<500	12	7.3	4.1	14	<2	<10	<2	<2	<2	NA
	12/12/00	93	17	3	3.6	12	0.8	<5.0	0.6	<0.5	<0.5	NA
	02/19/02	480	59	11	19	54	0.7	<5.0	0.9	<0.5	<0.5	NA

TABLE 3
SUMMARY OF GROUNDWATER SAMPLE ANALYTICAL RESULTS
Susan Davey Property
All concentrations reported in micrograms per liter (µg/L)

Sample ID	Date Sampled	TPHg	B	T	E	X	MTBE	TBA	DIPE	ETBE	TAME	Total Lead
MW-5	06/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	12/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA
	02/19/02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA
MW-6	06/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	09/12/00	<500	<2	<2	<2	<6	<2	<10	<2	<2	<2	NA
	12/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA
	02/19/02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA
MW-7	06/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	NA	NA	NA	NA	NA
	09/12/00	<500	<2	<2	<2	<6	<2	<10	<2	<2	<2	NA
	12/12/00	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA
	02/19/02	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA

Notes:
TPHg = Total petroleum hydrocarbons as gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total xylenes
TAME = tert-amyl methyl ether
TBA = tert-butyl alcohol
DIPE = Diisopropyl ether
ETBE = Ethyl tert-butyl ether
MTBE = Methyl-t-butyl ether
<# = Below laboratory detection limit
NS = Not sampled
Shaded row represents the most recent groundwater sampling event.

TABLE 4
SUMMARY OF SOIL VAPOR SAMPLE ANALYTICAL RESULTS
Susan Davey Property
All concentrations reported in micrograms per liter of vapor (µg/L-vapor)
All samples analyzed by EPA Method 8260B

Sample Identification	Date Collected	Sample Depth (Ft bgs)	Benzene	Toluene	Ethylbenzene	Total Xylenes
Previous Assessment Activities - 04/19/99 - Der Wienerschnitzel Restaurant Building Area						
VP1-2	4/19/1999	2	<0.1	<0.1	<0.1	<0.1
VP1-5	4/19/1999	5	4.2	0.9	<0.1	<0.1
VP2-2	4/19/1999	2	1,079	545	31	99
VP2-5	4/19/1999	5	750	102	27	96
VP3-2	4/19/1999	2	0.39	<0.1	<0.1	<0.1
VP3-5	4/19/1999	5	54	18	<0.1	<0.1
VP4-2	4/19/1999	2	3.2	8.3	1.5	4.0
VP4-5	4/19/1999	5	2.8	7.3	1.7	2.5
Previous Assessment Activities - 04/19/99 - Los Panchos Restaurant Building Area						
VP5-2	4/19/1999	2	<0.1	<0.1	<0.1	<0.1
VP5-5	4/19/1999	5	<0.1	<0.1	<0.1	<0.1
VP6-2	4/19/1999	2	<0.1	<0.1	<0.1	<0.1
VP6-5	4/19/1999	5	<0.1	<0.1	<0.1	<0.1
VP7-2	4/19/1999	2	<0.1	<0.1	<0.1	<0.1
VP7-5	4/19/1999	5	<0.1	<0.1	<0.1	<0.1
Current Assessment Activities - 1/22/02 - Der Wienerschnitzel Restaurant Building Area						
VP8-2	01/22/02	2	<1	<1	<1	1.8
VP8-5	01/22/02	5	<1	<1	<1	<1
VP9-2	01/22/02	2	<1	<1	<1	<1
VP9-5	01/22/02	5	<1	<1	<1	<1
VP10-2	01/22/02	2	18	<1	1.7	1.9
VP10-5	01/22/02	5	75	1.3	3.9	2.1
VP11-2	01/22/02	2	9	1.4	<1	1.6
VP11-5	01/22/02	5	4.1	4.1	1.2	4.6
VP12-2	01/22/02	2	<1	2.4	<1	2.5
VP12-5	01/22/02	5	<1	2.2	<1	2.1
VP13-2	01/22/02	2	<1	2.3	<1	2.1
VP13-5	01/22/02	5	<1	1.8	<1	1.9

Notes:
VP8-2 = Vapor point sampling location identification - depth
Ft bgs = Feet below ground surface
= micrograms per liter

TABLE 5
SUMMARY OF WELL GAUGING AND ELEVATION DATA
Susan Davey Property

Well No.	Date	SWE	DTW (feet bgs)	LPH Thickness (feet)	GWE (feet)
MW-1	04/01/98	479.42	7.75	0	471.67
	05/26/99	479.42	9.32	0	470.10
	06/12/00	479.42	9.50	0	469.92
	09/12/00	479.42	9.75	0	469.67
	12/12/00	479.42	9.84	0	469.58
	02/19/02	479.42	9.80	0	469.62
MW-2	04/01/98	480.00	8.77	0	471.23
	05/26/99	480.00	10.36	0	469.64
	06/12/00	480.00	10.55	0	469.45
	09/12/00	480.00	10.83	0	469.17
	12/12/00	480.00	10.99	0	469.01
	02/19/02	480.00	10.92	0	469.08
MW-3	04/01/98	478.35	6.76	0	471.59
	05/26/99	478.35	8.16	0	470.19
	06/12/00	478.35	NM	0	NC
	09/12/00	478.35	8.61	0	469.74
	12/12/00	478.35	9.93	0	468.67
	02/19/02	478.35	8.70	0	469.65
MW-4	04/01/98	478.60	7.66	0	470.94
	05/26/99	478.60	9.30	0	469.30
	06/12/00	478.60	9.49	0	469.11
	09/12/00	478.60	9.80	0	468.80
	12/12/00	478.60	9.93	0	468.67
	02/19/02	478.60	9.88	0	468.72
MW-5	06/12/00	478.71	10.37	0	468.34
	02/19/02	478.71	10.81	0	467.90
MW-6	06/12/00	478.93	8.30	0	470.63
	09/12/00	478.93	8.56	0	470.37
	12/12/00	478.93	8.69	0	470.24
	02/19/02	478.93	8.66	0	470.27
MW-7	06/12/00	479.04	10.25	0	468.79
	09/12/00	479.04	10.57	0	468.47
	12/12/00	479.04	10.72	0	468.32
	02/19/02	479.04	10.70	0	468.34

Notes:

GWE = Groundwater elevation, in feet above mean sea level (AMSL)
SWE = Surveyed well elevation, in feet AMSL, surveyed relative to a City of El Cajon benchmark.
DTW = Depth to water, in feet below top of well casing
LPH = Liquid-phase hydrocarbons
Shaded row represents most recent groundwater sampling event.

TABLE 6

ESTIMATED VOLUME OF TPH-IMPACTED SOIL
Susan Davey Property

Area of Concern	Volume Of Soil With TPH Concentrations Exceeding 100 mg/kg (1)				Mass of TPH in Soil with TPH Concentrations Exceeding 100 mg/kg (2)		
	Area (ft^2)	Thickness (ft)	Volume (ft^3)	Volume (yd^3)	Mean (mg/kg)	Mass (lbs)	Gallons
Estimated Volume Soil in the vicinity of the former UST Excavation and Fuel Dispensers (West of SB-5)	9,442	3	28,326	1,049	2,241	6,983	1,069
Soil in the vicinity of the former UST Excavation and Fuel Dispensers (East of SB-5)	7,620	6	45,720	1,693	2,241	11,270	1,726
TOTALS	17,062	-	74,046	2,742	-	18,253	2,795

Total estimated volume of impacted soil with TPH concentrations exceeding 100 mg/kg: **2,742 yd^3**

Total mass of TPH in soil with TPH concentrations exceeding 100 mg/kg: **18,253 lbs. or 2,795 gallons**

Notes:

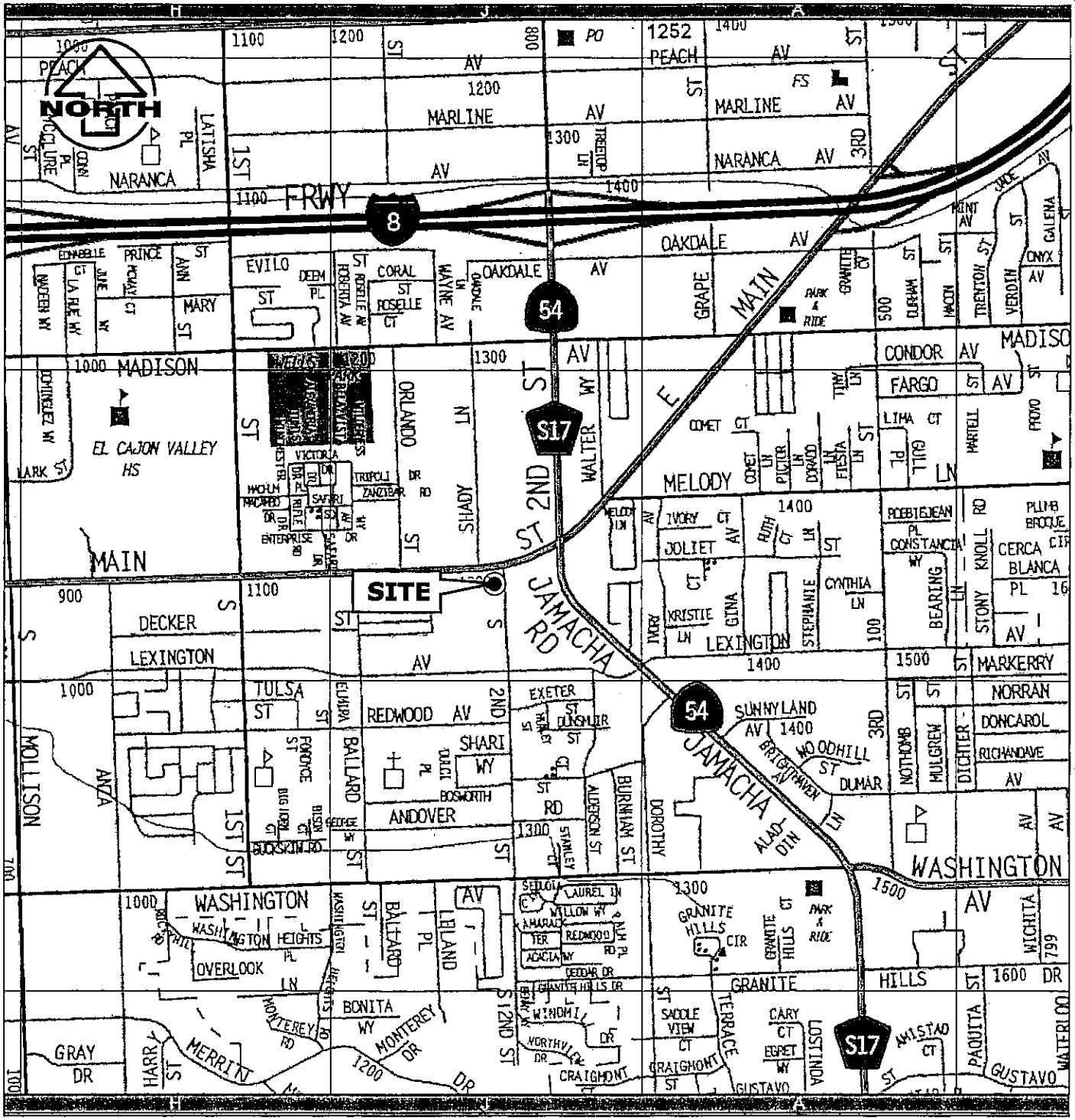
(1) Includes soil within the projected 100 milligrams per kilogram (mg/kg) TPH limits delineated in Figures 5, 6, 7 and 8. Estimated volume calculations were made on the basis of approximate volume of the maximum assessed extent of TPH-impacted soil with concentrations exceeding 100mg/kg, and on the basis of the geometric mean concentrations calculated from soil sample analytical results.

(2) The mass calculations were made by multiplying the calculated soil volume by the geometric mean TPH concentration by the density of the soil (3,000 pounds per cubic yard assumed). When soil sample data was not available for a particular volume of soil, the geometric mean from the nearest volume of soil was used for mass calculations. Gallons of gasoline calculated by assuming one gallon of gasoline 6.53 pounds.

TABLE 7
REMEDIATION STRATEGY COST ESTIMATES
Susan Davey Property

Alternatives	Regulatory Acceptance	Contaminant Fate	Permitting	Effectiveness	Long-Term Liability	Cost ($ Estimated)	Estimated Time to Complete
1. Limited excavation of impacted soils to 500 mg/kg TPHg, remediation by natural attenuation (RNA) of dissolved hydrocarbons in groundwater with periodic groundwater monitoring.	Soil excavation readily accepted. May require considerable effort for acceptance of RNA.	Contaminated soil is transferred to an approved recycling/disp-osal facility. Contaminants dissolved in groundwater are allowed to naturally degrade.	Remedial excavation shoring would most likely be extensive due to buildings and adjacent streets and utilities.	Moderately to very effective.	Long-term liability exists at some contaminated soil disposal facilities, minimal if treated and recycled off-site. Effectiveness of natural attenuation is an ongoing scientific debate. Note: there is significant short-term liability associated with excavation work near buildings and public streets/utilities.	Starting Cost: $230,000 Annual Costs: $18,437	2 years
2. Remediation by Natural Attentuation and No Further Action.	Accepted if low or acceptable risk to human health and groundwater resource.	Contaminant is degraded into harmless compounds through unenhanced natural processes.	No permitting is required. Presence of GW plume is documented on various agency lists.	Highly effective, but slow.	Long-term liability can be interpreted to be similar to liability that currently exists.	Cost for GW Well Abandonment $19,275	Approx. 20 to 30 Years to Benzene MCL

FIGURES



REFERENCE: THOMAS GUIDE CD-ROM, PAGE & GRID 1251 J5.

0 1320 2640

APPROXIMATE SCALE IN FEET

SECOR
International Incorporated
2655 CAMINO DEL RIO N., SUITE 302
SAN DIEGO, CA. 92108

k:\Allprojects2001dwgs\General\Daveyprop\Daveysloc.dwg

PROJECT: 008.04711 DATE: 1/31/01

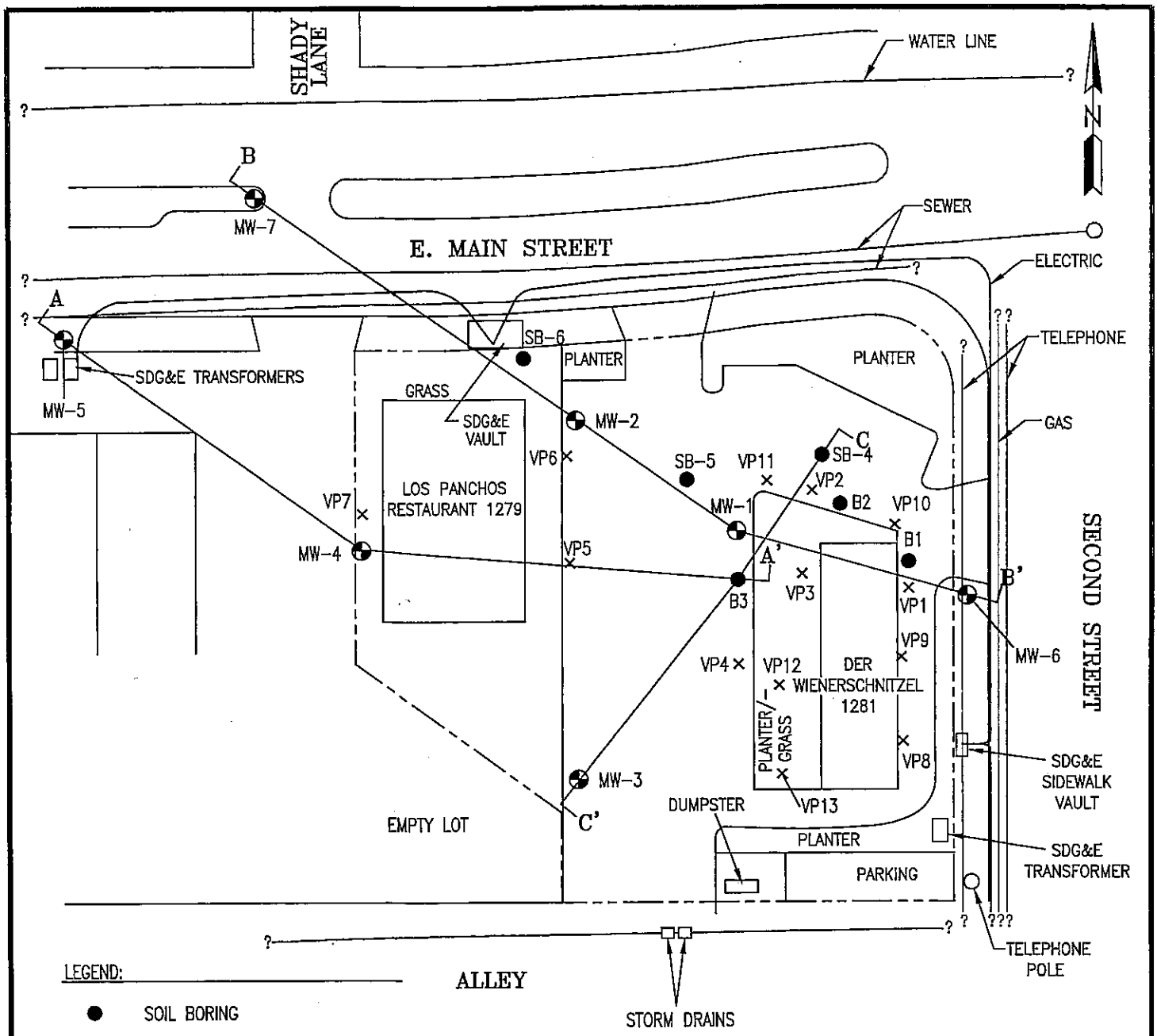
NOTES:

FIGURE 1

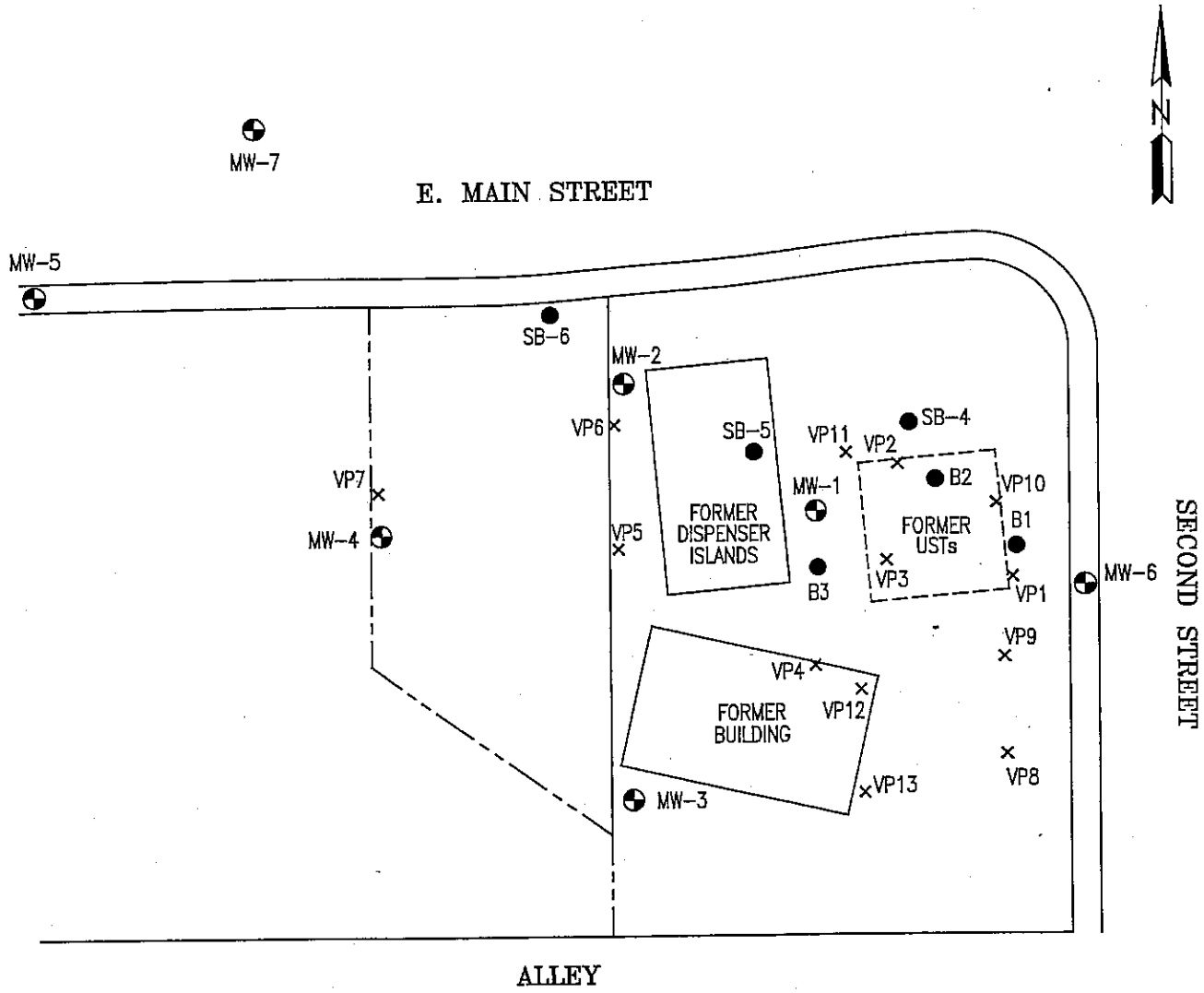
SITE LOCATION MAP

SUSAN DAVEY PROPERTY

1279 & 1281 E. MAIN STREET
EL CAJON, CALIFORNIA



SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108 DAVEYSP.DWG 4/26/02	SITE PLAN WITH CROSS-SECTION LINES SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CA.	PROJECT No.: 080T.04926.00 FIGURE: 2



LEGEND:

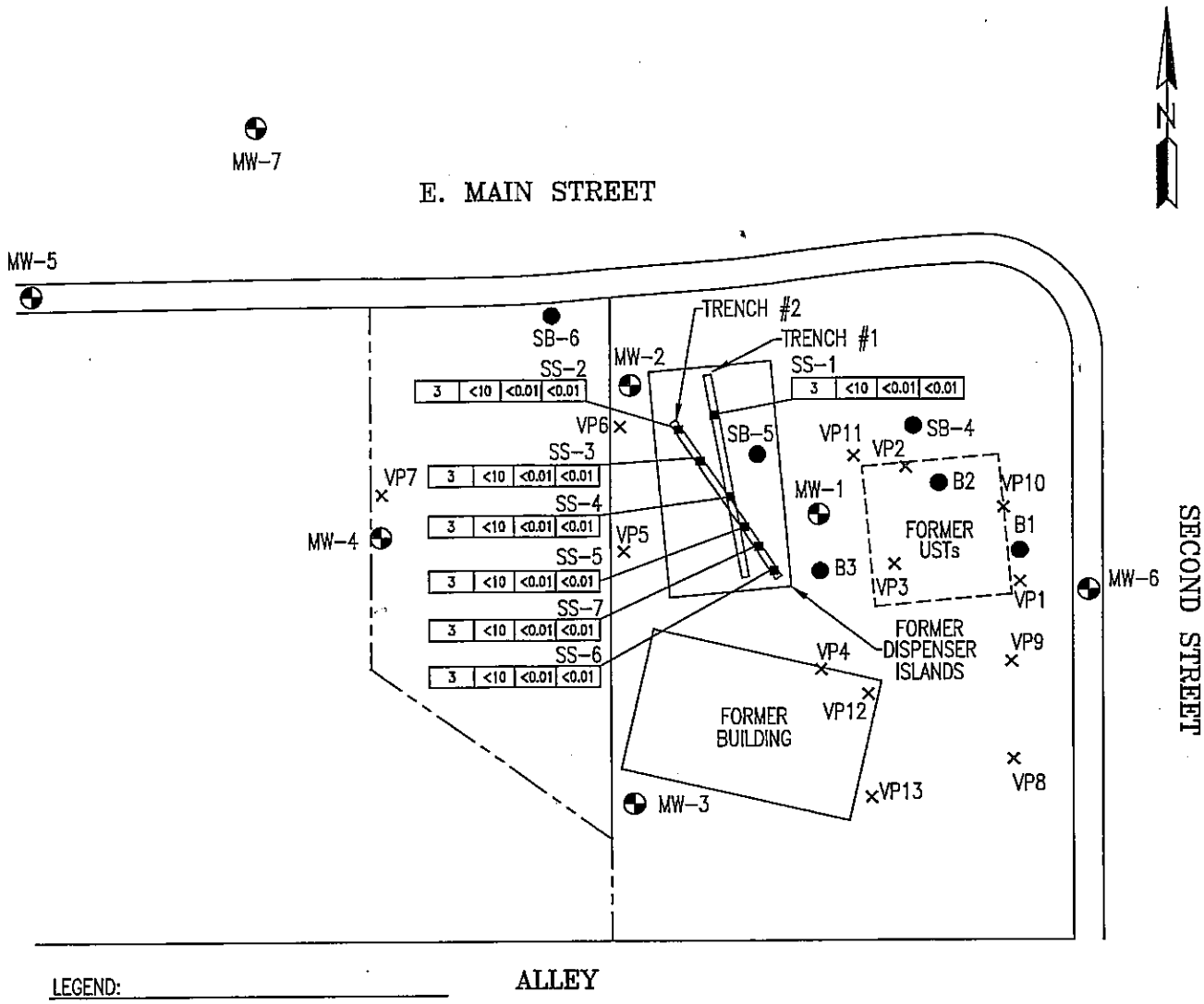
- ● SOIL BORING
- ⊕ GROUNDWATER MONITORING WELL
- × VAPOR PROBES (SECOR 4/19/99, AND 1/23/02)
- — — — PROPERTY LINE
- UST UNDERGROUND STORAGE TANK

NOTE: FORMER BUILDING, DISPENSER ISLANDS AND UST LOCATIONS ARE APPROXIMATE BASED ON A 1973 AERIAL PHOTOGRAPH

0 50 100

APPROXIMATE SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108 DAVEYSPC.DWG 4/26/02	SITE PLAN WITH FORMER SERVICE STATION SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CA.	PROJECT No.: 080T.04926.00 FIGURE: 3



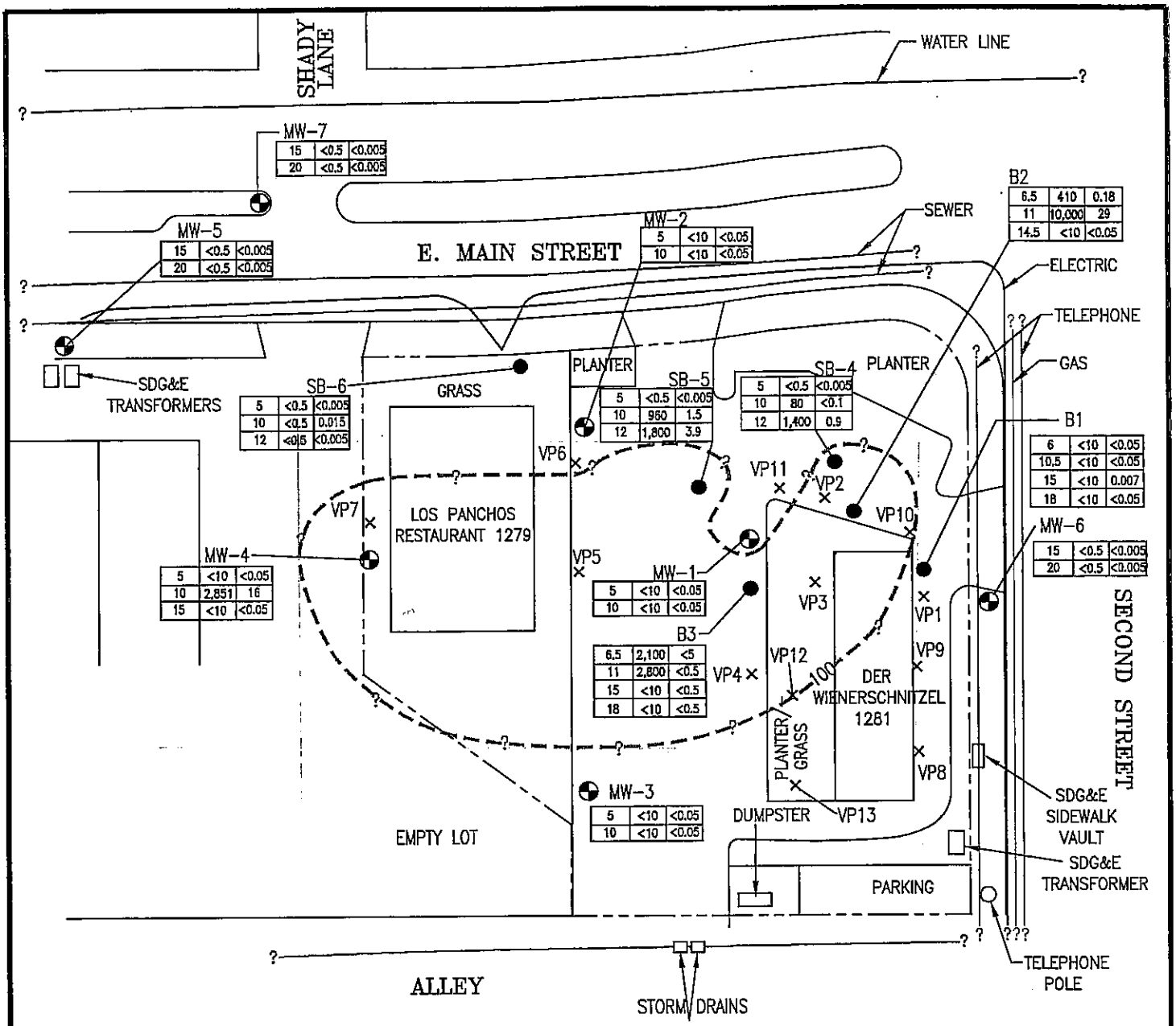
LEGEND:

- ■ SOIL SAMPLE LOCATIONS
- ● SOIL BORING
- ⊕ GROUNDWATER MONITORING WELL
- × VAPOR PROBES (SECOR 4/19/99, AND 1/23/02)
- TPHg TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- MTBE METHYL-TERT-BUTYL ETHER
- BGS BELOW GROUND SURFACE
- 3 | <10 | <0.01 | <0.01 — SOIL SAMPLE DEPTH IN FEET BGS/TPHg/BENZENE/MTBE CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg)
- UST UNDERGROUND STORAGE TANK
- PROPERTY LINE
- TRENCH

NOTE: FORMER BUILDING, DISPENSER ISLANDS AND UST LOCATIONS ARE APPROXIMATE BASED ON A 1973 AERIAL PHOTOGRAPH

0 50 100
APPROXIMATE SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108 DAVEYHCT.DWG 5/14/02	HYDROCARBON CONCENTRATIONS IN SOIL - TRENCHING SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CA.	PROJECT No.: 080T.04926.00 FIGURE: 4



LEGEND:

- ● SOIL BORING
- GROUNDWATER MONITORING WELL
- × VAPOR PROBES (SECOR 4/19/99, AND 1/23/02)
- PROPERTY LINE
- GAS
- SEWER
- ELECTRIC LINE
- TELEPHONE

TPHg — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

BGS — BELOW GROUND SURFACE

6.5	2,100	<5

SOIL SAMPLE DEPTH IN FEET BGS/TPHg/BENZENE CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg)

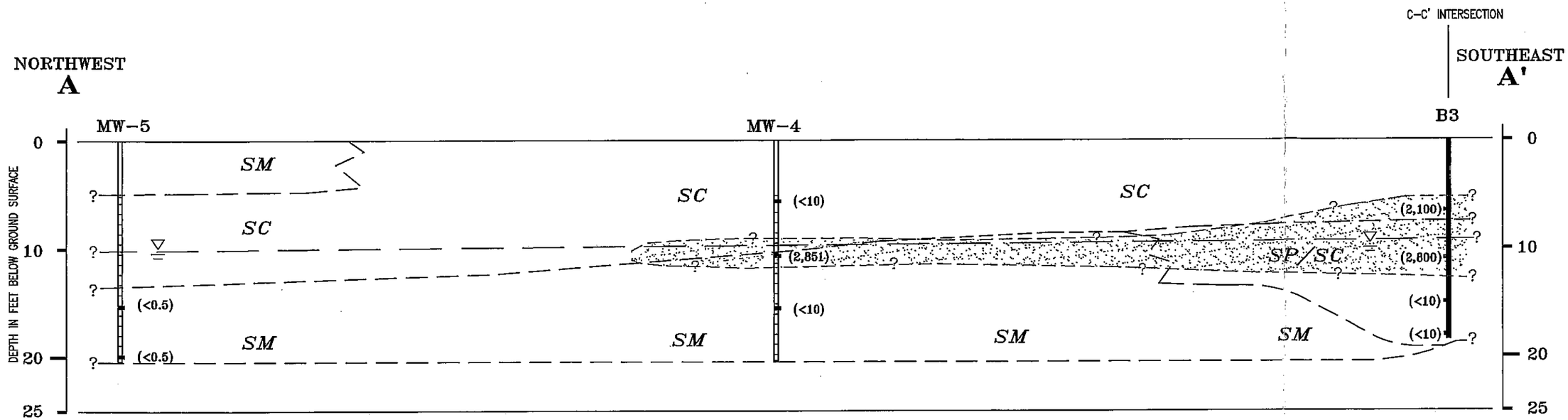
ESTIMATED EXTENT OF SOIL WITH TPHg CONCENTRATIONS >100 mg/kg.

N

0 50 100

APPROXIMATE SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108 DAVEYHC.DWG 5/14/02	HYDROCARBON CONCENTRATIONS IN SOIL – DRILLING SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CA.	PROJECT No.: 080T.04926.00 FIGURE: 5

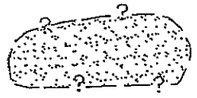


LEGEND:

- ▪ SOIL SAMPLE LOCATION
- (2,851) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPHg), CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg)
- ▽ STATIC GROUNDWATER LEVEL
- ND NOT DETECTED

MONITORING WELL

- BLANK
- SCREENED INTERVAL



TPHg CONCENTRATIONS >100 mg/kg IN SOIL

SM	SILTY SAND
SC	CLAYEY SAND
SP	POORLY GRADED SAND
SP/SC	POORLY GRADED SAND WITH CLAY

0 20 40
HORIZONTAL SCALE IN FEET

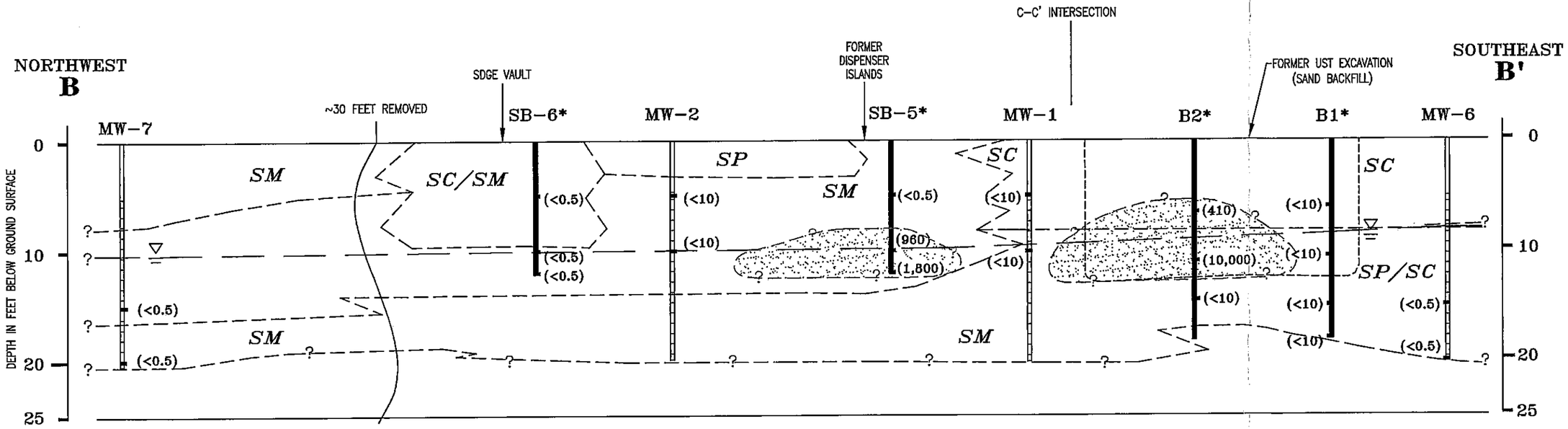
0 10 20
VERTICAL SCALE IN FEET

SECOR
INTERNATIONAL INCORPORATED
2655 CAMINO DEL RIO N., SUITE 302
SAN DIEGO, CA. 92108

GEOLOGIC CROSS SECTION A–A'

SUSAN DAVEY PROPERTY
1279 & 1281 E. MAIN STREET
EL CAJON, CALIFORNIA

CAD FILE NO.: X–SECAA	PROJECT No.: 080T.04926.00
DATE: 4/26/02	FIGURE: 6



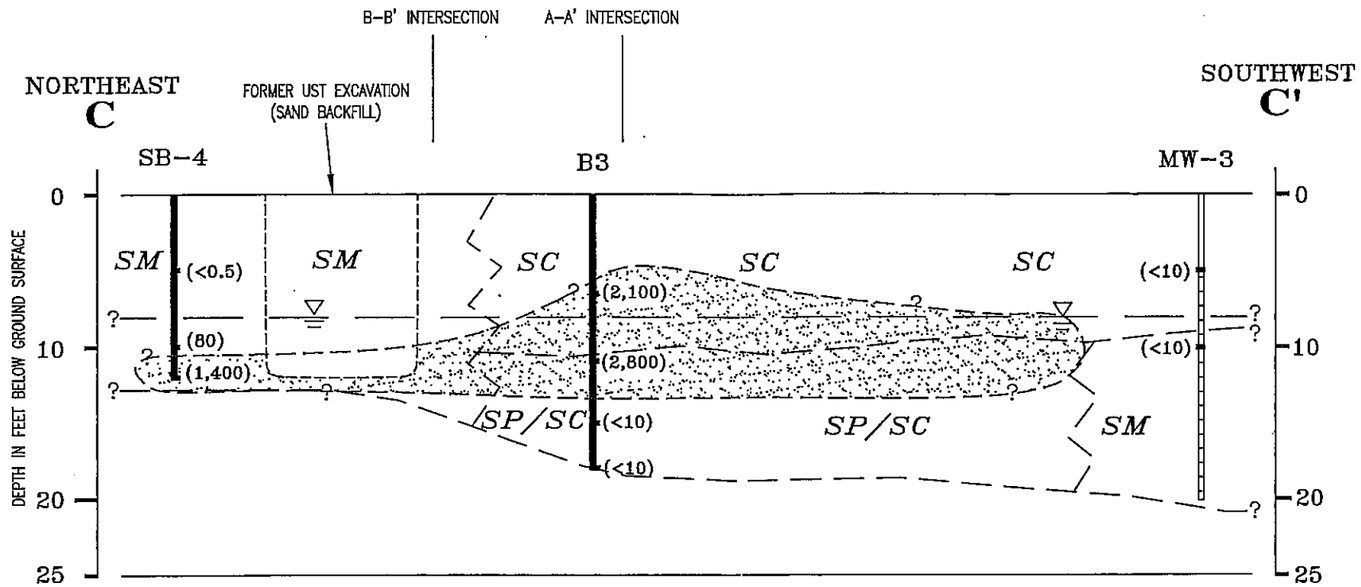
LEGEND:

- ▪ SOIL SAMPLE LOCATION
- (410) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPHg), CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg)
- ▽ STATIC GROUNDWATER LEVEL
- ND NOT DETECTED
- MONITORING WELL
  - BLANK
  - SCREENED INTERVAL
- * SOIL BORINGS PROJECTED ONTO B-B' CROSS-SECTION LINE FROM THEIR RESPECTIVE LOCATIONS
- TPHg CONCENTRATIONS >100 mg/kg IN SOIL
- SM SILTY SAND
- SC CLAYEY SAND
- SP POORLY GRADED SAND
- SP/SC POORLY GRADED SAND WITH CLAY
- SC/SM CLAYEY SAND WITH SILT

0 20 40
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108	GEOLOGIC CROSS SECTION B-B' SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CALIFORNIA	CAD FILE NO.: X-SECBBA	PROJECT No.: 080T.04926.00
		DATE: 4/26/02	FIGURE: 7



LEGEND:

- SOIL SAMPLE LOCATION
- (2,100) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPHg), CONCENTRATIONS IN MILLIGRAMS PER KILOGRAM (mg/kg)
- STATIC GROUNDWATER LEVEL
- ND NOT DETECTED
- UST UNDERGROUND STORAGE TANK

MONITORING WELL

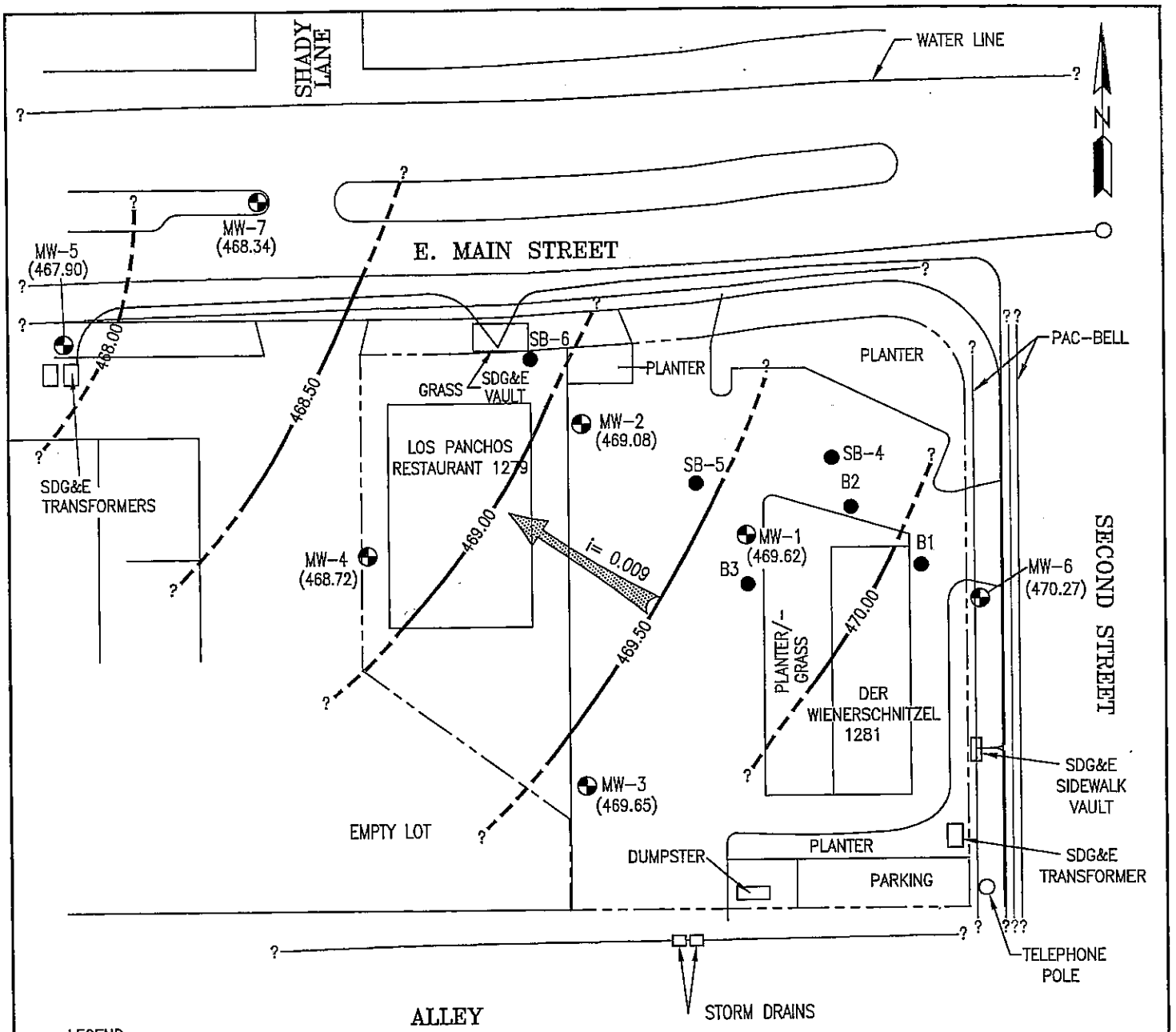
- BLANK
- SCREENED INTERVAL

- TPHg CONCENTRATIONS >100 mg/kg IN SOIL
- SM SILTY SAND
- SC CLAYEY SAND
- SP POORLY GRADED SAND
- SP/SC POORLY GRADED SAND WITH CLAY

0 20 40
HORIZONTAL SCALE IN FEET

0 10 20
VERTICAL SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108	GEOLOGIC CROSS SECTION C-C' SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CALIFORNIA	CAD FILE NO.: X-SECcc	PROJECT No.: 080T.04926.00
		DATE: 4/16/02	FIGURE: 8



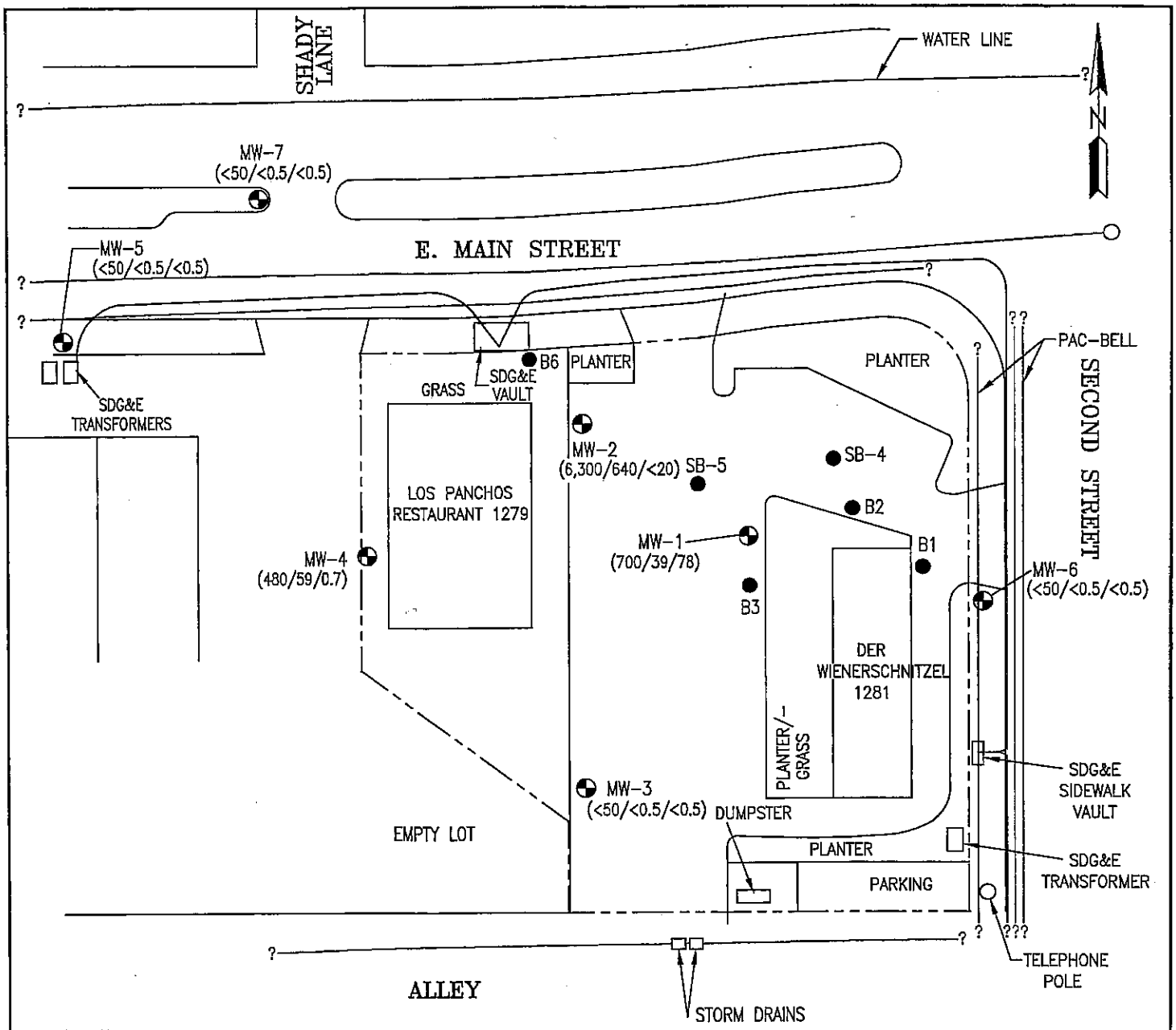
LEGEND:

- ● SOIL BORING
- ⊕ GROUNDWATER MONITORING WELL
- PROPERTY LINE
- GAS
- SEWER/STORM DRAIN
- ELECTRIC LINE
- TELEPHONE
- WATER
- i= 0.009 GROUNDWATER FLOW DIRECTION AND GRADIENT
- ?- - -469.00— GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (MSL). DASHED WHERE INFERRED, QUERIED WHERE UNCERTAIN.
- (469.08) GROUNDWATER ELEVATION IN FEET ABOVE MSL.

BASED ON GROUNDWATER MONITORING DATA FOR FEBRUARY 19, 2002

0 50 100
APPROXIMATE SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108 DAVEYGW02.DWG 4/16/02	GROUNDWATER ELEVATION CONTOUR MAP SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CA.	PROJECT No.: 080T.04926.00 FIGURE: 9



LEGEND:

- ● SOIL BORING
- ⊕ GROUNDWATER MONITORING WELL
- PROPERTY LINE
- GAS
- SEWER/STORM DRAIN
- ELECTRIC LINE
- TELEPHONE
- WATER

(<50/<0.5/<0.5) TOTAL PETROLEUM HYDROCARBONS AS GASOLINE / BENZENE / METHYL-T-BUTYL ETHER CONCENTRATIONS IN MICROGRAMS PER LITER (μg/L)

WELLS SAMPLED ON FEBRUARY 19, 2002

0 50 100

APPROXIMATE SCALE IN FEET

SECOR INTERNATIONAL INCORPORATED 2655 CAMINO DEL RIO N., SUITE 302 SAN DIEGO, CA. 92108 DAVEYCON02R.DWG 4/16/02	HYDROCARBON CONCENTRATIONS IN GROUNDWATER SUSAN DAVEY PROPERTY 1279 & 1281 E. MAIN STREET EL CAJON, CA.	PROJECT No.: 080T.04926.00 FIGURE: 10

Figure 11
Dissolved Benzene Concentration Trends
(MW-1)

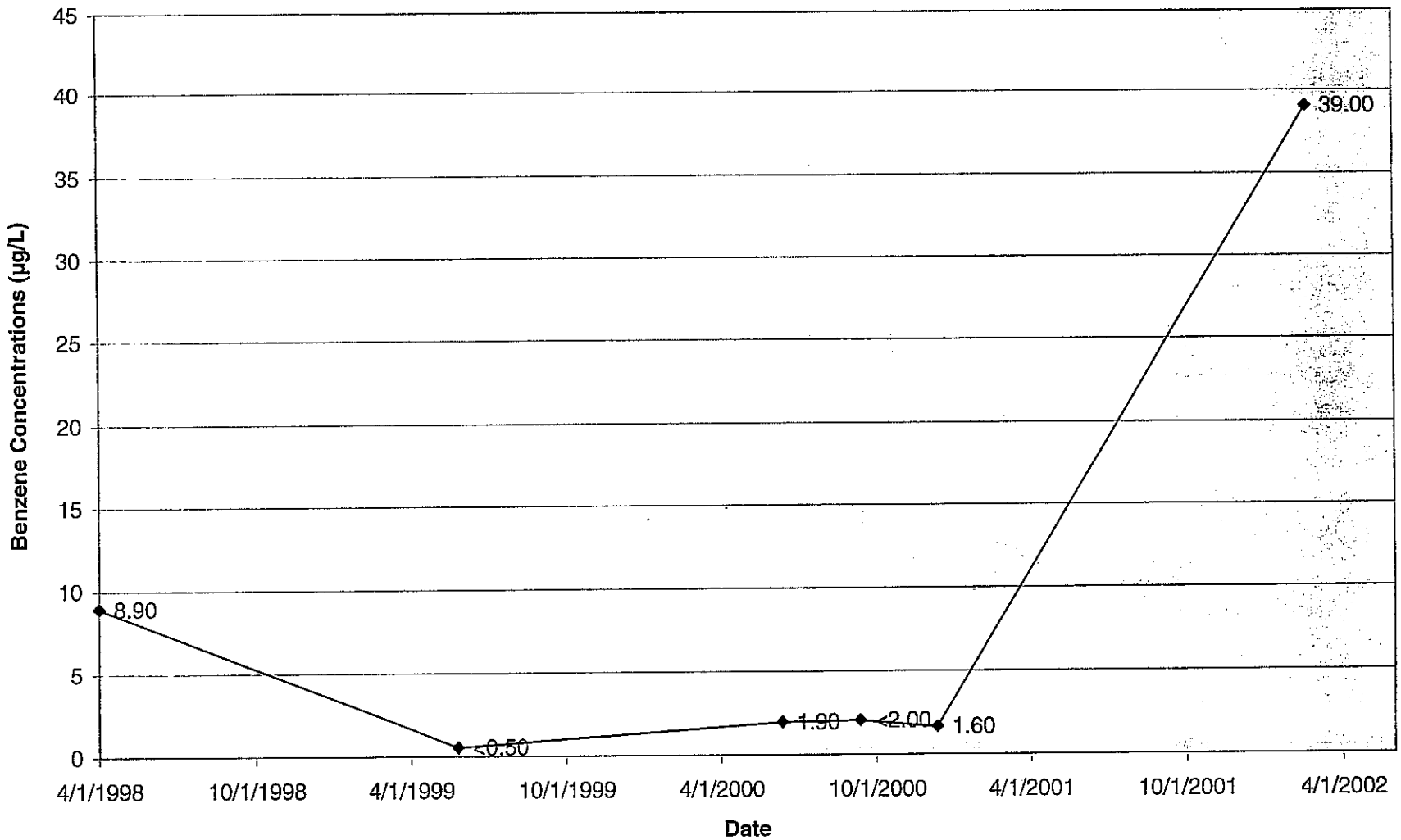


Figure 12
Dissolved Benzene Concentration Trends
(MW-2)

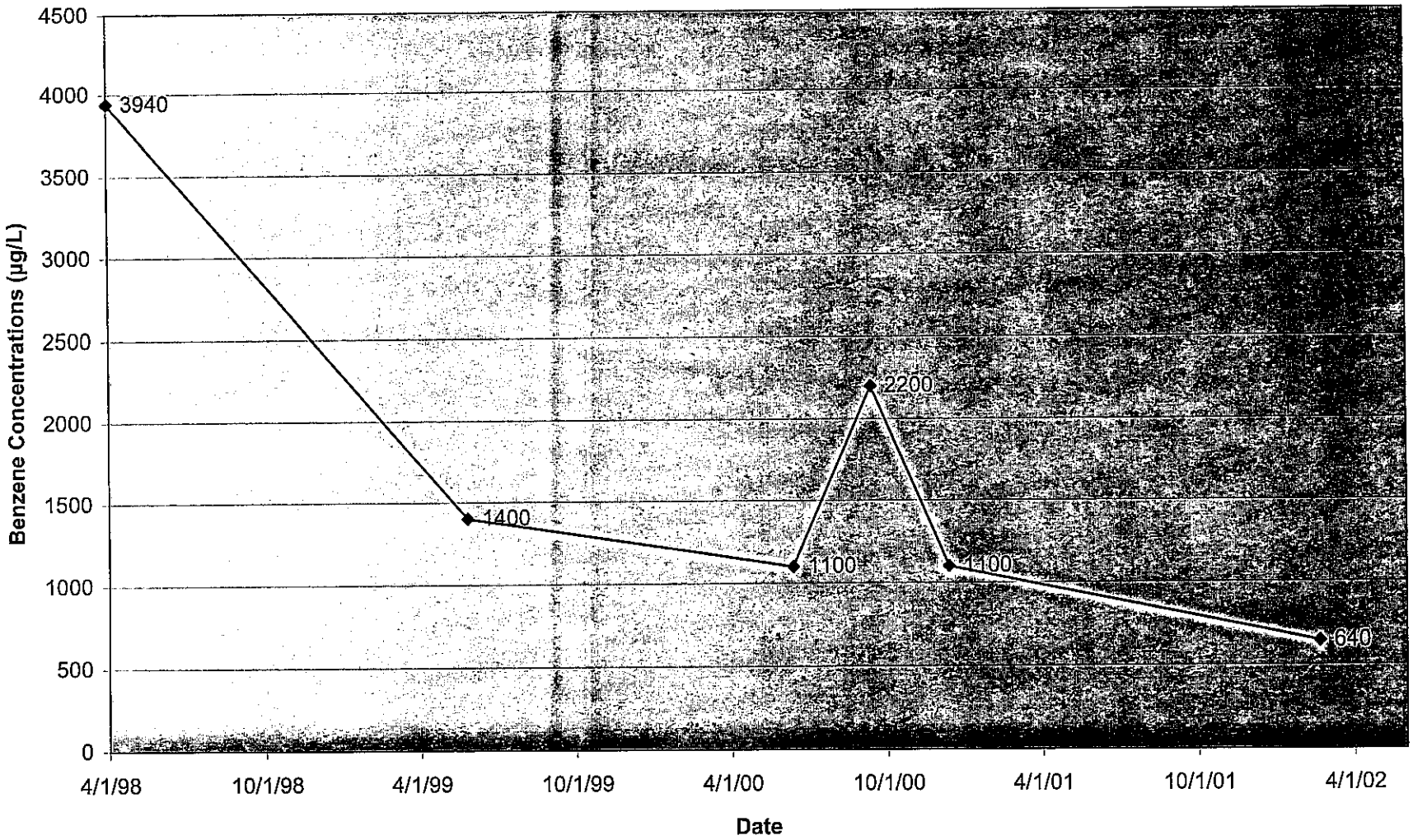
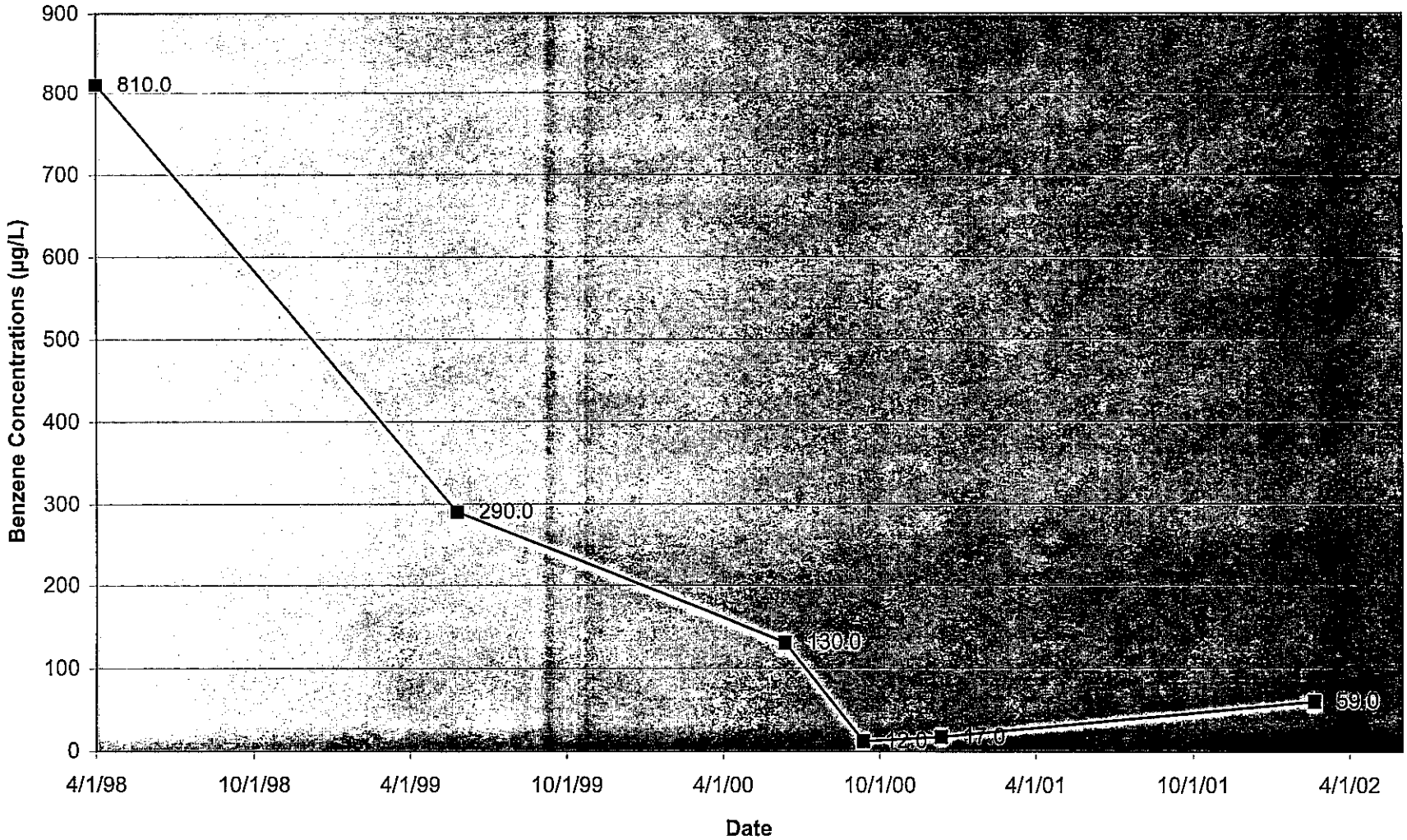


Figure 13
Dissolved Benzene Concentration Trends
(MW-4)



APPENDICES

APPENDIX A

SOIL VAPOR LABORATORY REPORT
AND
CHAIN-OF-CUSTODY DOCUMENTATION

RECEIVED
FEB 01 2002
By

1/30/2002

SECOR
2655 Camino Del Rio North, Suite 302
San Diego, CA 92108

Project Name: 1279-1281 E. Main Street, El Cajon
Project No.: PO# 0804926 Susan Davy Property

Attention: Mr. Brain Demme

The following sample(s) were received and analyzed:

Date Received	Quantity	Matrix
1/22/02	12	Vapor

The samples were analyzed by one or more of the EPA methodologies or equivalent methods listed below.

VOCs -- EPA Method 8260

The results are included with a summary of the quality control procedures. Please note that the symbol "nd" indicates a value below the reporting limit for the particular compound in the sample.

Please feel free to call us to discuss any part of this report or to schedule future projects.

Sincerely,

Tamara Davis
Lab Director

Mobile One Laboratories is certified by the California Department of Health Services (certificate #s: 1194, 1561, 1921, 2088, 2278).

HP Labs Project # SE012202-L5

148 S. Vinewood Street • Escondido, CA 92029 • Phone (760) 735-3208 • Fax (760) 735-2469
432 N. Cedros Avenue • Solana Beach, CA 92075 • Phone (858) 793-0401 • Fax (858) 793-0404
2373 208th Street Suite F-1 • Torrance, CA 90501 • Phone (310) 782-2929 • Fax (310) 782-2798

Report Summary

EPA Method 8260B (5030 Prep.)

Client: SECOR
Project: 1279-1281 E. Main Street, El Cajon

Matrix: Vapor
Units: ug/L

Sample Name:		BLANK	VP8-2	VP8-5	VP9-2	VP9-5	VP10-2
Analysis Date		22 Jan 2002	22 Jan 2002	22 Jan 2002	22 Jan 2002	22 Jan 2002	22 Jan 2002
Analysis Time		6:04 am	8:12 am	8:38 am	9:03 am	9:28 am	9:53 am
Dilution Factor:	0.1	0.05	0.05	0.05	0.05	0.05	0.05
Purge Volume(cc):		n/a	30	30	30	30	30
Compound	E.Q.L	Amount Found	Amount Found	Amount Found	Amount Found	Amount Found	Amount Found
Benzene	1	nd	nd	nd	nd	nd	18
Toluene	1	nd	nd	nd	nd	nd	nd
Ethylbenzene	1	nd	nd	nd	nd	nd	1.7
m,p-Xylene	1	nd	1.8	nd	nd	nd	1.9
o-Xylene	1	nd	nd	nd	nd	nd	nd

Surrogates	Spiked	QC Limits(% Rec.)	Percent Recovery					
DBFM	50 ng	75-125	107	106	106	110	105	88
1,2-DCA-d4	50 ng	70-130	107	97	99	103	101	106
Toluene - d8	50 ng	75-125	95	92	95	96	94	121
1,4-BFB	50 ng	75-125	79	86	87	90	84	85

Analyses performed by: Jim Cook

SE012202-L5

Report Summary

EPA Method 8260B (5030 Prep.)

Client: SECOR
Project: 1279-1281 E. Main Street, El Cajon

Matrix: Vapor
Units: ug/L

Sample Name:		VP10-5	VP11-2	VP11-5	VP12-2	VP12-5	VP13-2
Analysis Date		22 Jan 2002	22 Jan 2002	22 Jan 2002	22 Jan 2002	22 Jan 2002	22 Jan 2002
Analysis Time		10:45 am	11:09 am	11:34 am	12:24 pm	12:50 pm	1:15 pm
Dilution Factor:	0.1	0.2	0.2	0.1	0.05	0.05	0.05
Purge Volume(cc):		30	30	30	30	30	30
Compound	E.Q.L	Amount Found	Amount Found	Amount Found	Amount Found	Amount Found	Amount Found
Benzene	1	75	9.0	4.1	nd	nd	nd
Toluene	1	1.3	1.4	4.1	2.4	2.2	2.3
Ethylbenzene	1	3.9	nd	1.2	nd	nd	nd
m,p-Xylene	1	2.1	1.6	4.6	2.5	2.1	2.1
o-Xylene	1	nd	nd	nd	nd	nd	nd

Surrogates	Spiked	QC Limits(% Rec.)	Percent Recovery					
DBFM	50 ng	75-125	84	92	84	99	99	97
1,2-DCA-d4	50 ng	70-130	102	101	100	89	88	91
Toluene - d8	50 ng	75-125	114	105	108	98	98	97
1,4-BFB	50 ng	75-125	81	83	86	88	86	86

Analyses performed by: Jim Cook

SE012202-L5

Report Summary

EPA Method 8260B (5030 Prep.)

Client: SECOR
Project: 1279-1281 E. Main Street, El Cajon

Matrix: Vapor
Units: ug/L

Sample Name:		**VP13-5**
Analysis Date		22 Jan 2002
Analysis Time		1:39 pm
Dilution Factor:	0.1	0.05
Purge Volume(cc):		30
Compound	E.Q.L	Amount Found
Benzene	1	nd
Toluene	1	1.8
Ethylbenzene	1	nd
m,p-Xylene	1	1.9
o-Xylene	1	nd

Surrogates	Spiked	QC Limits(% Rec.)	Percent Recovery
DBFM	50 ng	75-125	100
1,2-DCA-d4	50 ng	70-130	92
Toluene - d8	50 ng	75-125	96
1,4-BFB	50 ng	75-125	87

Analyses performed by: Jim Cook

SE012202-L5

Calibration Verification

EPA Method 8260B

Client: SECOR
Project: 1279-1281 E. Main Street, El Cajon

Matrix: vapor
Units: ug/L

Sample Name: CCV
Analysis Date 22 Jan 2002
Analysis Time 5:40 am
Dilution Factor: 1

Compound		Amount Found	Percent Diff	CCC (-20 to +20%) Pass	EPA 8260 (-20 to +20%) Pass
Dichlorodifluoromethane		47	-6		yes
Chloromethane		51	1		yes
Vinyl Chloride	CCC	57	14	yes	yes
Bromomethane		62	24		no
Chloroethane		49	-2		yes
Trichlorofluoromethane		48	-5		yes
1,1-Dichloroethene	CCC	47	-6	yes	yes
Methylene Chloride		51	2		yes
Methyl-t-butylether		37	-25		no
trans-1,2-Dichloroethene		51	1		yes
1,1-Dichloroethane		54	7		yes
2,2-Dichloropropane		55	10		yes
cis-1,2-Dichloroethene		48	-4		yes
Chloroform	CCC	53	7	yes	yes
Bromochloromethane		47	-7		yes
1,1,1-Trichloroethane		54	7		yes
1,1-Dichloropropene		47	-6		yes
Carbon Tetrachloride		51	1		yes
1,2-Dichloroethane		50	1		yes
Benzene		54	8		yes
Trichloroethene		47	-6		yes
1,2-Dichloropropane	CCC	47	-7	yes	yes
Bromodichloromethane		50	-1		yes
Dibromomethane		45	-9		yes
cis-1,3-Dichloropropene		37	-25		no
Toluene	CCC	49	-2	yes	yes
trans-1,3-Dichloropropene		39	-22		no
1,1,2-Trichloroethane		43	-14		yes
1,2-Dibromoethane		38	-24		no
1,3-Dichloropropane		43	-14		yes

Calibration Verification

EPA Method 8260B

Client: SECOR
Project: 1279-1281 E. Main Street, El Cajon

Matrix: vapor
Units: ug/L

Sample Name:		CCV			EPA 8260 (-20 to +20%)
Compound		Amount Found	Percent Diff		Pass
Tetrachloroethene		48	-4		yes
Dibromochloromethane		44	-12		yes
Chlorobenzene		50	0		yes
Ethylbenzene	CCC	50	0	yes	yes
1,1,1,2-Tetrachloroethane		53	5		yes
m,p-Xylene		100	0		yes
o-Xylene		50	0		yes
Styrene		47	-6		yes
Bromoform		42	-17		yes
Isopropylbenzene		48	-5		yes
1,1,2,2-Tetrachloroethane		41	-19		yes
1,2,3-Trichloropropane		39	-23		no
n-propylbenzene		49	-3		yes
Bromobenzene		45	-11		yes
1,3,5-Trimethylbenzene		47	-6		yes
2-Chlorotoluene		50	0		yes
4-Chlorotoluene		47	-6		yes
tert-Butylbenzene		45	-10		yes
1,2,4-Trimethylbenzene		49	-3		yes
sec-Butylbenzene		48	-4		yes
p-Isopropyltoluene		48	-4		yes
1,3-Dichlorobenzene		47	-6		yes
1,4-Dichlorobenzene		46	-7		yes
n-Butylbenzene		48	-3		yes
1,2-Dichlorobenzene		44	-13		yes
1,2-Dibromo-3-chloropropane		34	-32		no
1,2,4-Trichlorobenzene		42	-15		yes
Hexachlorobutadiene		43	-15		yes
Naphthalene		33	-35		no
1,2,3-Trichlorobenzene		41	-19		yes

Surrogates	Spiked	QC Limits(% Rec.)	
DBFM	50 ng	75-125	105
1,2-DCA-d4	50 ng	70-130	101
Toluene - d8	50 ng	75-125	93
1,4-BFB	50 ng	75-125	87

SUMMATION

CCC compounds pass the 8260B criteria

CALIBRATION VERIFIED

Footnote Summary

Footnote	Definition
E.Q.L.	Estimated Quantitation Limit
nd	Not detected above the E.Q.L. or detection limit.
J	The concentration reported is between the Method Detection Limit and the E.Q.L.
D	Concentration reported from a secondary dilution; E.Q.L.s adjusted accordingly.
B	Analyte found in the associated blank.
E	Analyte amount exceeds calibration range. Amount quantitated by extrapolation.
***	MS/MSD, LCS/LCSD recovery is outside QC range; no corrective action taken.
M	Surrogate recovery outside QC range due to matrix interference.
S	Because of necessary sample dilution, value was outside QC limits.
&	Gasoline range organics not identified as gasoline.
#	Diesel range organics not identified as diesel.
**	This compound has been screened by EPA method 8020. Any positive results should be confirmed by a second analysis.

Chain of Custody Record

HP LABS

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Date: JANUARY 22, 2002
HPL Project # SE 012202-LS
Outside Lab:

Client: SECOR
Address: 2655 CAMINO DEL RIO NORTH, SUITE 302
SAN DIEGO, CA 92108
Phone: 619-296-6195 Fax: 619-296-6199

Collector: DAVE BALKENDUSH
Client Project # PO#0804926
Location: 1279-1281 EAST MAIN STREET, EL CAJON
Turn around time:

Page: 1 Of
Project Manager BRIAN DEMME

Notes:

Sample Receipt
Intact: [x] Yes [ ] No
Seal Intact: [ ] Yes [ ] No [x] N/A
Cold: [ ] Yes [ ] No
N/A (Received on Site)

Sample	Depth	Time	Date	Sample Type	Container Type	TPH gasoline / diesel	TPH extended	8021 for BTEX/MTBE	8021 for Halogenated compounds	418.1 TRPH	8260B BTEX Oxygenates	Oxygenates	VOCs	VOCs and Oxygenates	Methane	Fixed Gases	Field Notes	Total # of containers
VP8-2	2'	0750	1/22/02	VAPOR	PLASTIC SYRINGE						X						P30cc	1
VP8-5	5'	0758									X						P30	1
VP9-2	2'	0812									X						P30	1
VP9-5	5'	0818									X						P30	1
VP10-2	2'	0842									X						P30	1
VP10-5	5'	0848									X						P30cc SAMPLER REPORTS ODOR	1
VP11-2	2'	0918									X						P30	
VP11-5	5'	0928									X						P30	
VP12-2	2'	0954									X						P30	
VP12-5	5'	0958									X						P30	
VP13-2	2'	1006									X						P30	
VP13-5	5'	1010									X						P30	

Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
[signature]		[signature]	HP LABS	1/22/02	10:40
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:
Relinquished by: (Signature)	(company)	Received by: (Signature)	(company)	Date:	Time:

*Signature constitutes authorization to proceed with analysis and acceptance of condition on back.

Sample disposal instruction: [ ] Disposal @ $2.00 each [ ] Return to client [ ] Pickup

APPENDIX B

SOIL VAPOR RISK CALCULATIONS
AND
DEPARTMENT OF LABOR STATISTICS

Employee Tenure Summary

Technical information: (202) 691-6378
http://www.bls.gov/cps/

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USDL 02-531

For release: 10:00 A.M. EDT
Thursday, September 19, 2002

EMPLOYEE TENURE IN 2002

The median number of years that wage and salary workers had been with their current employer (referred to as employee tenure) was 3.7 years in January 2002, according to data released today by the Bureau of Labor Statistics of the U.S. Department of Labor. Since 1983, median employee tenure has ranged from 3.4 to 3.8 years in the years when such information was obtained.

Information on employee tenure is obtained from supplemental questions in the Current Population Survey (CPS). The CPS is a monthly survey of about 60,000 households that provides information on the labor force status, demographics, and other characteristics of the civilian noninstitutional population age 16 and over. The supplemental questions about employee tenure have been essentially the same since 1983. Prior to that year, the CPS questions on employee tenure were significantly different. As a result, this release focuses only on comparable data from 1983 to 2002. (See the Technical Note.) Some highlights from the January 2002 survey follow:

--Median years of tenure tend to increase with age. For example, the median tenure of older workers ages 55 to 64 was three and a half times that of workers ages 25 to 34.

--Thirty percent of workers age 25 and over had been with their current employer for 10 years or more at the time of the survey. For workers age 55 and over, half had such long tenure.

--The share of employed persons who had been with their employer for 12 months or less declined with age. Seventy percent of teenagers had been with their employer for a year or less, compared with 10 percent of persons age 55 and over.

--The median years of tenure for workers in the public sector was twice that of workers in the private sector. This is partly due to the relatively older age of the public-sector workforce.

--Managerial and professional specialty workers had the highest tenure among the major occupational groups, while workers in service occupations had the lowest median tenure.

Demographic characteristics

In January 2002, the median tenure (the point at which half of the workers had more tenure and half had less tenure) was 3.9 years for men and 3.4 years for women. Median tenure has been about one-half year higher for men than for women since 1996, compared with a difference of about one year in the prior survey years. (See table 1.)

Among men, median tenure changed little from February 2000 (when data on job tenure were last collected), but was slightly lower than in January 1983, despite an upward shift in the age of the male workforce. As shown

below, the percentage of male wage and salary workers who were between the ages of 35 and 54 increased in January 1983 to January 2002. All else held constant, this age shift would have been associated with an increase in median tenure because, until retirement age, tenure tends to increase with age. However, median tenure declined for men in most age groups, offsetting the aging effect.

For women, median tenure also changed little from February 2000, though it was higher than in January 1983. Contributing to the increased tenure was an upward shift in the age distribution of working women from 1983 to 2002. In addition, there has been some increase in tenure between the two time periods, particularly among women ages 40 to 49. For example, the proportion of women in this age group who had been with their employer for 10 years or more rose from 28 percent in 1983 to 33 percent in 2002.

Percent distribution of employed wage and salary workers by age and sex, January 1983 and January 2002

Age	Men		Women	
	January 1983	January 2002	January 1983	January 2002
Total, 16 years and over..	100.0	100.0	100.0	100.0
16 to 24 year.....	20.0	15.2	22.5	15.8
25 to 34 year.....	29.9	23.6	28.9	21.9
35 to 44 year.....	21.2	27.0	21.2	26.4
45 to 54 year.....	15.6	21.6	14.7	23.0
55 to 64 year.....	11.1	10.0	10.5	10.4
65 years and over.....	2.2	2.6	2.3	2.5

Note: Data exclude the incorporated and unincorporated self-employed.

In January 2002, 33 percent of male wage and salary workers age 25 and over had been with their current employer for 10 years or more, compared with 29 percent of women. The gap between men and women with such long tenure is about the same as when the survey was conducted in 1998 and 2000; however, it is about one-third lower than in 1983. (See table 2. Workers ages 16 to 24 are excluded from table 2 because few of these young workers could have been with their current employer for 10 years or more.)

Larger proportions of whites and blacks than of Hispanics had 10 or more years of tenure with their current employer. In January 2002, 22 percent of Hispanics (age 25 and over) had been with their current employer for 10 years or more, compared with 29 percent of blacks and 32 percent of whites. This discrepancy can be explained, in part, by the relative youth of the Hispanic workforce. For example, among persons age 25 and over, nearly two-fifths of employed Hispanics were between the ages of 25 and 34, compared with about one-fourth of employed whites and blacks. Moreover, about 1 in 10 employed Hispanics age 35 and over--the group more likely to have 10 or more years of tenure--had not been in the United States for 10 years at the time of the survey.

In January 2002, 25 percent of wage and salary workers age 16 and over had been with their current employer for 12 months or less, down slightly from 27 percent in February 2000. This group includes new entrants and reentrants to the workforce, job losers who found new jobs during the previous year, and workers who had voluntarily changed employers during the previous year. Young workers are more likely to have shorter tenure than older workers. For example, 72 percent of 16- to 19-year-olds and 51 percent of 20- to 24-year-olds had tenure of 12 months or less with their current employer; this compares with 11 percent of workers ages 55 to 64.

Industry

In January 2002, nonagricultural wage and salary workers in government had double the tenure of their counterparts in private industries, 6.7 and 3.3 years, respectively. (See table 5.) Differing age distributions can explain part of the gap in tenure, as government workers tend to be older than workers in private industries. For example, 74 percent of government workers were age 35 and over, compared with 61 percent of private wage and salary workers.

Within the private sector, manufacturing workers had the highest median tenure (5.5 years) of the major industry groups. Within manufacturing, industries with particularly high employee tenure included petroleum and coal products (10.2 years), primary metal industries (7.6 years), paper and allied products (7.4 years , and transportation equipment (7.0 years). Across the major industries, median tenure was lowest among workers in retail trade, at 2.2 years. Once again, age distributions affect overall median tenure. For example, workers in manufacturing tend to be older than those in retail trade.

Occupation

Managerial and professional specialty workers had the highest median tenure (4.8 years) among the major occupational groups. (See table 6.) Within this group, officials and administrators in public administration had a notably high median tenure of 11.3 years. Workers in service occupations had the lowest median tenure, 2.4 years. Within services, food service workers had the lowest median tenure (1.4 years), while protective service workers had the highest (5.1 years). Workers in service occupations tend to be younger than persons employed in managerial and professional specialty occupations.

- Employee Tenure Explanatory Note
- Table 1. Median years of tenure with current employer for employed wage and salary workers by age and sex, selected years, 1983-2002
- Table 2. Percent of employed wage and salary workers 25 years and over who had 10 years or more of tenure with their current employer by age and sex, selected years, 1983-2002
- Table 3. Distribution of employed wage and salary workers by tenure with current employer, age, sex, race, and Hispanic origin, January 2002
- Table 4. Median years of tenure with current employer for employed wage and salary workers 25 years and over by educational attainment, sex, and age, January 2002
- Table 5. Median years of tenure with current employer for employed wage and salary workers by industry, selected years, 1983-2002
- Table 6. Median years of tenure with current employer for employed wage and salary workers by occupation, selected years, 1983-2002
- Text version of entire news release

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Table 5. Median years of tenure with current employer for employed wage dustry, selected years, 1983-2002

Table 5. Median years of tenure with current employer for employed wage and salary worker 1983-2002

Industry	January 1983	January 1987	January 1991	Febru 199
Total, 16 years and over	3.5	3.4	3.6	3.
Agriculture	2.2	2.4	2.6	3.
Nonagricultural industries	3.6	3.4	3.6	3.
Government	5.8	6.5	6.5	6.
Private industries	3.2	3.0	3.2	3.
Mining	3.4	6.1	5.8	6.
Construction	2.0	2.0	2.6	2.
Manufacturing	5.4	5.5	5.2	5.
Durable goods (1)	5.6	6.0	5.8	5.
Lumber and wood products	4.0	3.2	3.6	3.
Furniture and fixtures	4.2	3.2	4.0	4.
Stone, clay, and glass products	7.0	6.8	6.3	5.
Primary metal industries	10.0	10.2	9.7	8.
Fabricated metal products	5.7	5.5	5.5	5.
Machinery and computing equipment	5.8	6.7	5.9	5.
Electrical machinery, equipment, and supplies	4.7	4.8	5.5	4.
Transportation equipment (1)	8.8	8.0	7.6	8.
Motor vehicles and equipment	13.0	11.2	11.7	7.
Aircraft and parts	6.4	6.8	6.3	9.
Professional and photographic equipment and watches	4.7	5.9	5.1	5.
Toys, amusements, and sporting goods	3.6	5.8	3.2	2.
Nondurable goods (1)	5.1	4.9	4.7	5.
Food and kindred products	5.2	4.4	4.2	5.
Textile mill products	7.0	7.0	5.6	5.
Apparel and other finished textile products	3.8	3.2	3.8	3.
Paper and allied products	7.6	8.6	7.6	8.
Printing and publishing	3.2	3.2	3.5	4.
Chemicals and allied products	7.0	7.2	5.7	6.
Petroleum and coal products	6.0	11.7	8.4	10.
Rubber and miscellaneous plastics products	5.4	4.4	4.7	4.
Transportation and public utilities	5.8	5.7	5.8	5.
Transportation	4.6	3.9	4.2	4.
Communications and other public utilities	8.3	8.4	9.9	8.
Wholesale trade	3.8	3.7	3.4	3.
Retail trade	1.9	1.8	1.9	1.
Finance, insurance, and real estate	3.2	3.0	3.4	4.
Banking and other finance	3.3	3.1	3.6	3.
Insurance and real estate	3.0	2.9	3.2	4.
Services (1)	2.5	2.5	2.7	3.
Private households	1.8	1.7	1.9	2.
Services, except private households	2.5	2.5	2.7	3.
Business services	1.5	1.6	1.8	2.

Personal services except private households.....	2.0	2.0	2.1	2.
Entertainment and recreation services.....	1.8	1.8	2.3	1.
Hospitals.....	3.5	4.6	4.2	5.
Health services, except hospitals.....	2.5	2.4	2.7	2.
Educational services.....	2.7	3.1	3.5	3.
Social services.....	2.2	2.3	2.3	2.
Other professional services.....	2.9	2.8	3.3	3.

1 Includes other industries, not shown separately.

r =revised.

NOTE: Data for 1996, 1998, 2000, and 2002 are not strictly comparable with data for 199 population controls from the 1990 census, adjusted for the estimated undercount, are used for the 1983-91 period are based on population controls from the 1980 census. Also, begin incorporate the effects of the redesign of the Current Population Survey introduced in Jan incorporated and unincorporated self-employed.

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Table 5. Median years of tenure with current employer for employed wage and salary workers by industry, selected years, 1983-2002

Table 5. Median years of tenure with current employer for employed wage and salary workers by industry, selected year 1983-2002

Industry	January 1983	January 1987	January 1991	February 1996	February 1998	February 2000	Janua 02
Total, 16 years and over	3.5	3.4	3.6	3.8	3.6	3.5	3.7
Agriculture	2.2	2.4	2.6	3.4	2.9	3.1	3.4
Nonagricultural industries	3.6	3.4	3.6	3.8	3.6	3.5	3.7
Government	5.8	6.5	6.5	6.9	7.3	7.2	6.7
Private industries	3.2	3.0	3.2	3.3	3.2	3.2	3.3
Mining	3.4	6.1	5.8	6.1	5.6	6.5	4.6
Construction	2.0	2.0	2.6	2.9	2.7	2.8	3.0
Manufacturing	5.4	5.5	5.2	5.4	4.9	5.0	5.5
Durable goods(1)	5.6	6.0	5.8	5.3	4.9	4.9	5.5
Lumber and wood products	4.0	3.2	3.6	3.3	3.8	4.0	3.5
Furniture and fixtures	4.2	3.2	4.0	4.2	3.9	4.1	5.3
Stone, clay, and glass products	7.0	6.8	6.3	5.1	6.1	5.4	5.9
Primary metal industries	10.0	10.2	9.7	8.1	8.0	7.0	7.6
Fabricated metal products	5.7	5.5	5.5	5.1	4.0	4.7	5.5
Machinery and computing equipment	5.8	6.7	5.9	5.2	4.4	4.5	.5
Electrical machinery, equipment, and supplies	4.7	4.8	5.5	4.9	5.0	4.7	4.9
Transportation equipment(1)	8.8	8.0	7.6	8.3	7.8	6.4	7.0
Motor vehicles and equipment	13.0	11.2	11.7	7.8	6.4	5.8	7.0
Aircraft and parts	6.4	6.8	6.3	9.8	9.6	9.7	8.3
Professional and photographic equipment and watches	4.7	5.9	5.1	5.1	5.5	5.2	4.5
Toys, amusements, and sporting goods	3.6	5.8	3.2	2.7	3.6	3.7	5.6
Nondurable goods(1)	5.1	4.9	4.7	5.4	4.9	5.1	5.5
Food and kindred products	5.2	4.4	4.2	5.1	5.1	5.0	5.1
Textile mill products	7.0	7.0	5.6	5.4	6.7	7.4	5.1
Apparel and other finished textile products	3.8	3.2	3.8	3.8	3.8	3.3	4.8
Paper and allied products	7.6	8.6	7.6	8.4	7.5	6.1	7.4
Printing and publishing	3.2	3.2	3.5	4.3	4.0	4.4	5.1
Chemicals and allied products	7.0	7.2	5.7	6.9	5.4	5.8	6.3
Petroleum and coal products	6.0	11.7	8.4	10.3	9.4	7.5	10.2

Transportation and public utilities	5.8	5.7	5.8	5.2	4.8	4.4	4.4
Transportation	4.6	3.9	4.2	4.1	3.8	3.9	4.3
Communications and other public utilities	8.3	8.4	9.9	8.2	8.2	5.2	4.7
Wholesale trade	3.8	3.7	3.4	3.9	4.1	3.9	3.9
Retail trade	1.9	1.8	1.9	1.9	1.8	2.0	2.2
Finance, insurance, and real estate	3.2	3.0	3.4	4.1	3.5	3.6	3.6
Banking and other finance	3.3	3.1	3.6	3.9	3.7	3.3	3.5
Insurance and real estate	3.0	2.9	3.2	4.2	3.4	3.9	3.8
Services(1)	2.5	2.5	2.7	3.0	2.9	2.9	3.1
Private households	1.8	1.7	1.9	2.3	2.3	2.9	2.8
Services, except private households	2.5	2.5	2.7	3.0	2.9	2.9	3.1
Business services	1.5	1.6	1.8	2.0	1.9	r1.8	2.2
Automobile and repair services	2.3	2.0	2.2	2.9	2.4	2.7	3.0
Personal services, except private households	2.0	2.0	2.1	2.3	2.3	2.7	8
Entertainment and recreation services	1.8	1.8	2.3	1.9	1.9	2.3	2.1
Hospitals	3.5	4.6	4.2	5.2	5.2	5.2	4.8
Health services, except hospitals	2.5	2.4	2.7	2.9	2.9	3.2	3.0
Educational services	2.7	3.1	3.5	3.8	3.5	3.3	3.6
Social services	2.2	2.3	2.3	2.8	2.7	2.6	2.7
Other professional services	2.9	2.8	3.3	3.5	3.3	r3.2	3.5

1 Includes other industries, not shown separately.
r =revised.
NOTE: Data for 1996, 1998, 2000, and 2002 are not strictly comparable with data for 1991 and earlier years because population controls from the 1990 census, adjusted for the estimated undercount, are used beginning in 1996. Figures for the 1983-91 period are based on population controls from the 1980 census. Also, beginning in 1996, the figures incorporate the effects of the redesign of the Current Population Survey introduced in January 1994. Data exclude the incorporated and unincorporated self-employed.

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Table 6. Median years of tenure with current employer for employed wage and salary workers by occupation, selected years, 1983-2002

Table 6. Median years of tenure with current employer for employed wage and salary workers by occupation, selected years, 1983-2002

Occupation	January 1983	January 1987	January 1991	February 1996	February 1998	February 2000	Januar 02
Total, 16 years and over	3.5	3.4	3.6	3.8	3.6	3.5	3.7
Managerial and professional specialty	4.8	5.0	5.2	5.1	4.8	4.8	4.8
Executive, administrative, and managerial	5.3	5.1	5.5	5.5	5.3	5.0	5.3
Officials and administrators, public administration	8.4	9.7	10.7	10.4	12.3	12.0	11.3
Other executive, administrative, and managerial	5.3	5.2	5.7	5.6	5.5	5.2	5.4
Management-related occupations	4.8	4.2	4.7	4.8	4.1	3.9	4.3
Professional specialty	4.5	5.0	4.9	4.8	4.4	4.6	4.3
Engineers	6.3	6.1	6.7	6.6	5.3	4.8	4.8
Mathematical and computer scientists	3.8	5.0	4.2	4.5	3.3	3.3	3.3
Natural scientists	4.7	6.0	5.6	4.4	5.0	5.2	4.6
Health diagnosing occupations	2.8	2.5	3.0	3.3	3.2	3.4	4.1
Health assessment and treating occupations	3.6	4.1	4.2	4.9	4.6	5.3	4.6
Teachers, college and university	4.4	7.2	5.5	4.4	4.2	4.7	3.8
Teachers, except college and university	6.0	7.0	6.7	5.8	5.9	5.6	5.0
Lawyers and judges	3.2	3.3	3.4	4.3	4.3	3.8	4.7
Other professional specialty occupations	3.4	3.5	3.6	3.9	3.6	3.9	.9
Technical, sales, and administrative support	3.1	2.9	3.2	3.4	3.2	3.1	3.2
Technicians and related support	3.3	3.8	3.8	4.7	4.3	3.8	3.7
Health technologists and technicians	3.3	4.4	3.5	4.5	4.5	3.8	3.6
Engineering and science technicians	3.9	4.7	4.0	5.5	4.0	4.1	4.0
Technicians, except health, engineering, and science	2.7	2.9	3.9	4.4	4.1	3.4	3.7
Sales occupations	2.3	2.3	2.4	2.5	2.4	2.7	2.7
Supervisors and proprietors	4.4	4.4	4.9	4.8	4.8	4.7	4.6
Sales representatives, finance and business services	2.6	2.4	2.7	3.3	2.7	2.8	3.1
Sales representatives, commodities, except retail	3.7	3.9	3.4	3.8	4.1	4.3	4.1
Sales workers, retail and personal services	1.6	1.4	1.4	1.3	1.2	1.4	1.5
Sales-related occupations	1.7	2.4	3.8	1.5	2.4	3.7	2.3
Administrative support, including clerical	3.5	3.3	3.6	4.0	3.6	3.4	3.6
Supervisors	7.6	8.9	8.4	9.4	8.2	7.6	7.5
Computer equipment operators	3.2	3.0	3.8	4.8	4.1	2.9	3.4
Secretaries, stenographers, and typists	3.2	3.0	3.4	4.4	4.1	4.4	4.3

[illegible]	6.1	[illegible]	[illegible]9	7.[illegible]	[illegible]	[illegible]4	9.9
Other administrative support, including clerical.....	3.2	3.0	3.1	3.4	3.1	2.8	3 0
Service occupations.....	2.2	2.0	2.3	2.4	2.4	2.5	2.4
Private household.....	1.9	1.9	2.2	2.2	2.3	2.8	2.9
Protective service.....	4.6	5.0	4.4	5.2	5.4	5.7	5.1
Service, except private household and protective.....	2.0	1.8	2.0	2.1	2.1	2.2	2.1
Food service.....	1.5	1.3	1.4	1.3	1.3	1.5	1.4
Health service.....	2.6	2.2	2.4	2.8	2.8	3.1	2.4
Cleaning and building service.....	3.0	2.7	3.0	3.0	3.1	3.2	3.1
Personal service.....	1.9	1.9	2.1	2.2	2.2	2.3	2.4
Precision production, craft, and repair.....	4.8	4.7	4.8	4.9	4.6	4.3	4.4
Mechanics and repairers.....	5.2	5.8	5.0	5.3	4.9	4.7	4.6
Construction trades.....	3.2	2.6	3.2	3.5	3.4	3.1	3.3
Other precision production, craft, and repair.....	6.0	6.2	6.4	6.3	6.1	5.4	6.7
Operators, fabricators, and laborers.....	3.9	3.4	3.5	3.2	3.2	3.2	.5
Machine operators, assemblers, and inspectors.....	4.8	4.3	4.4	4.1	3.9	4.0	4.9
Transportation and material moving occupations.....	4.4	4.1	3.9	3.9	3.8	3.7	3.6
Motor vehicle operators.....	3.5	3.2	3.2	3.4	3.4	3.5	3.4
Other transportation and material moving occupations.	6.8	7.2	6.3	5.4	4.8	4.8	4.6
Handlers, equipment cleaners, helpers, and laborers....	2.1	2.0	2.2	1.9	1.9	2.0	2.4
Construction laborers.....	2.0	1.3	2.4	2.2	1.6	2.6	2.3
Other handlers, equipment cleaners, helpers, and laborers.....	2.2	2.2	2.1	1.8	1.9	1.9	2.4
Farming, forestry, and fishing.....	2.3	2.4	2.7	3.7	2.8	3.1	3.1
Farm operators and managers.....	3.9	5.0	4.8	6.2	4.7	3.9	5.5
Other farming, forestry, and fishing occupations.....	2.3	2.3	2.6	3.6	2.8	3.1	3.0

NOTE: Data for 1996, 1998, 2000, and 2002 are not strictly comparable with data for 1991 and earlier years becaus population controls from the 1990 census, adjusted for the estimated undercount, are used beginning in 1996. Figures for the 1983-91 period are based on population controls from the 1980 census. Also, beginning in 1996, the figures incorporate the effects of the redesign of the Current Population Survey introduced in January 1994. Data exclude the incorporated and unincorporated self-employed.

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Suite 4675
2 Massachusetts Avenue, NE
Washington, DC 20212-0001

Ph 202 [redacted] 378
CPS data questions: **cpsinfo@bls.gov**
Technical (web) questions: **webmaster@bls.gov**
Other comments: **feedback@bls.gov**

SITE ASSESSMENT & MITIGATION VAPOR RISK ASSESSMENT MODEL

Version: November 1999

Revised 01-08-2002

Input Data

Case Name:

Davey Property - Typical Commercial Building

CHEMICAL OF CONCERN:

Enter Chemical Name = benzene

C11 benzene
C12 benzo(a)pyrene
C13 carbon tetrachloride
C14 chlorobenzene
C15 chloroethane (ethyl chloride)
C16 chloromethane (methyl chloride)
C17 1,2-dichlorobenzene
C18 1,3-dichlorobenzene
C19 1,4-dichlorobenzene
C20 1,1-dichloroethene (1,1-DCE)
C21 trans-1,2-dichloroethene
C22 1,1-dichloroethane (1,1-DCA)
C23 1,2-dichloroethane (1,2-DCA)

E11 dichloromethane (methylene chloride)
E12 ethylbenzene
E13 naphthalene
E14 methyl tertiary butyl ether (MTBE)
E15 tetrachloroethene (PCE)
E16 toluene
E17 1,1,1-trichloroethane
E18 1,1,2-trichloroethane
E19 trichloroethene (TCE)
E20 trichloromethane (chloroform)
E21 vinyl chloride
E22 xylene

Chemical Mixture (if app.) =

C27 Gasoline
C28 Kerosene
C29 Diesel

E27 Fuel Oil
E28 Waste Oil

If compound is not listed then data must be entered into the site-specific field.

SITE SPECIFIC INFORMATION			Site-Specific	Value Used
Mole fraction	dimensionless	MF		0.0000
Temperature	K	T		293
Water concentration (chemical)	ug/l	C_w		0
Soil concentration (chemical)	mg/kg	C_t		0
Soil concentration (TPH/TRPH)	mg/kg	C_t		0
Soil gas concentration (measured)	mg/m3 (ug/l)	$C_{sg}(m)$	1.06	1.06
Depth of contamination or Soil Gas	m	X	0.61	0.61

Version: November 1999

Revised 12/20/2000

Data Input

			Site Specific	Value Used
CHEMICAL PROPERTIES				
Henry's Law Constant	dimensionless	H		0.23
Vapor pressure	atm	VP		0.13
Molecular weight (chemical)	mg/mole	MW		78,110
Molecular weight (mixture)	mg/mole	MW(m)		#N/A
Universal gas constant	atm-m3/mole-K	R	XXXXXXXXXX	8.20E-05
Diffusion coefficient in air	cm2/sec	D_a		0.088
Organic carbon partitioning coef.	cm3/gm	K_{oc}		62
SOIL PROPERTIES				
Total porosity	dimensionless	θ		0.3
Air-filled porosity	dimensionless	θ_a		0.2
Water-filled porosity	dimensionless	θ_w	XXXXXXXXXX	0.1
Bulk density (dry)	gm/cc	r_b		1.8
Weight fraction of organic carbon	dimensionless	foc		0.01
BUILDING SPECIFICATIONS				
Floor area of building	m2	A		1
% of floor area that flux occurs	dimensionless			100%
Interior Height of building	m	R_h		2.44
Exchange rate of air	exchanges/hr	E		0.83
Attenuation factor(Crack factor)	dimensionless	S_b	0.1	0.1
OUTDOOR AIR COMPONENT				
Downwind contamination length	m	L		0
Wind speed	m/hr	u		16000
Height of building openings	m	h		2
EXPOSURE SCENARIO Default values are for Industrial Uses				
Body weight	kg	BW		70
Inhalation rate	m3/day	IR		20
Exposure duration	yrs	ED		25
Hours per day	hr/day			12
Days per week	days/week			5
Weeks per year	weeks/yr			50
HEALTH RISK FACTORS				
Reference dose	mg/kg-day	RfD		0.0017
Slope factor (potency)	1/(mg/kg-day)	SF		0.1

SITE ASSESSMENT & MITIGATION VAPOR RISK ASSESSMENT MODEL

Version: November 1999

Revised 01-08-2002

Risk Calculations

Case Name: Davey Property - Typical Commercial Building

Chemical: benzene

Variable Descriptions				Units
CALCULATION OF SOIL GAS CONCENTRATION				
A. SOURCE - Free Product/Soil>100mg/kg.				
Mole fraction	MF	=	0.00E+00	dimensionless
Molecular weight	MW	=	7.81E+04	mg/mole
Vapor pressure	VP	=	1.30E-01	atm
Universal gas constant	R	=	8.20E-05	atm-m3/mole-K
Temperature	T	=	2.93E+02	K
Calculated soil gas concentration	$C_{sg}(fp)$	=	**0.00E+00**	**mg/m3**
B. SOURCE - Groundwater				
Water contamination level	C_w	=	0.00E+00	ug/l
Henry's Law Constant	H	=	2.30E-01	dimensionless
Calculated soil gas concentration	$C_{sg}(gw)$	=	**0.00E+00**	**mg/m3**
C. SOURCE - Soil < 100 mg/kg				
Soil contamination level	C_t	=	0.00E+00	mg/kg
Henry's Law Constant	H	=	2.30E-01	dimensionless
Bulk density (dry)	ρ_b	=	1.80E+00	gm/cc
Air-filled porosity	θ_a	=	2.00E-01	dimensionless
Water-filled porosity	θ_w	=	1.00E-01	dimensionless
Soil/water distribution coef.	K_d	=	6.20E-01	cm3/gm
Calculated soil gas concentration	$C_{sg}(s)$	=	**0.00E+00**	**mg/m3**
D. SOURCE - Measured Soil Gas				
Measured soil gas concentration	$C_{sg}(m)$	=	**1.06E+00**	**mg/m3 (ug/l)**

E. SOIL GAS CONCENTRATION USED IN RISK CALCULATIONS >>>> **1.06E+00 mg/m3**

DIFFUSIVE TRANSPORT UPWARD IN UNSATURATED ZONE				
Total porosity	θ	=	3.00E-01	dimensionless
Air-filled porosity	θ_a	=	2.00E-01	dimensionless
Diffusion coefficient in air	D_a	=	8.80E-02	cm2/sec
Effective diffusion coefficient	D_e	=	**4.60E-03**	cm2/sec
Depth of contamination or Csg	X	=	6.10E-01	m
Calculated Flux	F_x	=	**2.88E-03**	**mg/m2-hour**

Case Name: Davey Property - Typical Commercial Building

CALCULATING VAPOR CONCENTRATION IN BUILDING

A. INDOOR AIR COMPONENT

Floor area of building	A	=	1.00E+00	m2
% of floor area that flux occurs			1.00E+00	dimensionless
Attenuation factor(Crack factor)	S_b	=	1.00E-01	dimensionless
Flux area within building	Af	=	**1.00E-01**	m2
Interior Height of building	R_h	=	2.44E+00	m
Volume of building	V	=	**2.44E+00**	m3
Exchange rate of air	E	=	8.30E-01	exchanges/hr
Ventilation rate	Q	=	**2.03E+00**	m3/hr
Indoor air component	C_i	=	**1.42E-04**	**mg/m3**

B. OUTDOOR AIR COMPONENT

Downwind contamination length	L	=	0.00E+00	m
Wind speed	u	=	1.60E+04	m/hr
Height of building openings (or height of breathing zone)	h	=	2.00E+00	m
Outdoor air component	C_o	=	**0.00E+00**	**mg/m3**
C. TOTAL INDOOR AIR CONCENTRATION	C_t	=	**1.42E-04**	**mg/m3**

EXPOSURE SCENARIO

Body weight	BW	=	7.00E+01	kg
Inhalation rate	IR	=	2.00E+01	m3/day
Exposure duration	ED	=	2.50E+01	yrs
Hours per day	conversion		1.20E+01	hr/day
Exposure time	ET	=	**5.00E-01**	hr/24 hours
Days per week	conversion		5.00E+00	days/week
Weeks per year	conversion		5.00E+01	weeks/yr
Exposure frequency	EF	=	**2.50E+02**	days/yr
Averaging Time (carc. risk)	AT	=	2.56E+04	days
Averaging Time (non-carc. risk)	AT	=	**9.13E+03**	days
Chemical Intake (carc. risk)	IT_c	=	**4.96E-06**	**mg/kg-day**
Chemical Intake (non-carc. risk)	IT_{nc}	=	**1.39E-05**	**mg/kg-day**

NON-CARCINOGENIC RISK (Chronic Risk)

Chemical Intake (non-carc. risk)	IT_{nc}	=	1.39E-05	mg/kg-day
Reference dose	RfD	=	1.70E-03	mg/kg-day
Hazard Index	HI	=	**8.18E-03**	

CARCINOGENIC RISK

Chemical Intake (carc. risk)	IT_c	=	4.96E-06	mg/kg-day
Slope factor (potency)	SF	=	1.00E-01	1/(mg/kg-day)
Cancer Risk	**Risk**	=	**4.96E-07**	

Case Name:

Davey Property - Typical Commercial Building

CHEMICAL OF CONCERN:

Enter Chemical Name = benzene

C11 benzene
C12 benzo(a)pyrene
C13 carbon tetrachloride
C14 chlorobenzene
C15 chloroethane (ethyl chloride)
C16 chloromethane (methyl chloride)
C17 1,2-dichlorobenzene
C18 1,3-dichlorobenzene
C19 1,4-dichlorobenzene
C20 1,1-dichloroethene (1,1-DCE)
C21 trans-1,2-dichloroethene
C22 1,1-dichloroethane (1,1-DCA)
C23 1,2-dichloroethane (1,2-DCA)

E11 dichloromethane (methylene chloride)
E12 ethylbenzene
E13 naphthalene
E14 methyl tertiary butyl ether (MTBE)
E15 tetrachloroethene (PCE)
E16 toluene
E17 1,1,1-trichloroethane
E18 1,1,2-trichloroethane
E19 trichloroethene (TCE)
E20 trichloromethane (chloroform)
E21 vinyl chloride
E22 xylene

Chemical Mixture (if app.) =

C27 Gasoline
C28 Kerosene
C29 Diesel

E27 Fuel Oil
E28 Waste Oil

If compound is not listed then data must be entered into the site-specific field.

SITE SPECIFIC INFORMATION			Site-Specific	Value Used
Mole fraction	dimensionless	MF		0.0000
Temperature	K	T		293
Water concentration (chemical)	ug/l	C_w		0
Soil concentration (chemical)	mg/kg	C_t		0
Soil concentration (TPH/TRPH)	mg/kg	C_t		0
Soil gas concentration (measured)	mg/m3 (ug/l)	$C_{sg}(m)$	2.09	2.09
Depth of contamination or Soil Gas	m	X	1.52	1.52

Data Input

Version: November 1999

Revised 12/20/2000

CHEMICAL PROPERTIES			Site Specific	Value Used
Henry's Law Constant	dimensionless	H		0.23
Vapor pressure	atm	VP		0.13
Molecular weight (chemical)	mg/mole	MW		78,110
Molecular weight (mixture)	mg/mole	MW(m)		#N/A
Universal gas constant	atm-m3/mole-K	R	XXXXXXXXXX	8.20E-05
Diffusion coefficient in air	cm2/sec	D_a		0.088
Organic carbon partitioning coef.	cm3/gm	K_{oc}		62
SOIL PROPERTIES				
Total porosity	dimensionless	θ		0.3
Air-filled porosity	dimensionless	θ_a		0.2
Water-filled porosity	dimensionless	θ_w	XXXXXXXXXX	0.1
Bulk density (dry)	gm/cc	r_b		1.8
Weight fraction of organic carbon	dimensionless	foc		0.01
BUILDING SPECIFICATIONS				
Floor area of building	m2	A		1
% of floor area that flux occurs	dimensionless			100%
Interior Height of building	m	R_h		2.44
Exchange rate of air	exchanges/hr	E		0.83
Attenuation factor(Crack factor)	dimensionless	S_b	0.1	0.1
OUTDOOR AIR COMPONENT				
Downwind contamination length	m	L		0
Wind speed	m/hr	u		16000
Height of building openings	m	h		2
EXPOSURE SCENARIO Default values are for Industrial Uses				
Body weight	kg	BW		70
Inhalation rate	m3/day	IR		20
Exposure duration	yrs	ED		25
Hours per day	hr/day			12
Days per week	days/week			5
Weeks per year	weeks/yr			50
HEALTH RISK FACTORS				
Reference dose	mg/kg-day	RfD		0.0017
Slope factor (potency)	1/(mg/kg-day)	SF		0.1

Case Name: Davey Property - Typical Commercial Building

Chemical: benzene

Variable Descriptions **Units**

CALCULATION OF SOIL GAS CONCENTRATION

A. SOURCE - Free Product/Soil>100mg/kg.

Mole fraction	MF	=	0.00E+00	dimensionless
Molecular weight	MW	=	7.81E+04	mg/mole
Vapor pressure	VP	=	1.30E-01	atm
Universal gas constant	R	=	8.20E-05	atm-m3/mole-K
Temperature	T	=	2.93E+02	K
Calculated soil gas concentration	$C_{sg}(fp)$	=	**0.00E+00**	**mg/m3**

B. SOURCE - Groundwater

Water contamination level	C_w	=	0.00E+00	ug/l
Henry's Law Constant	H	=	2.30E-01	dimensionless
Calculated soil gas concentration	$C_{sg}(gw)$	=	**0.00E+00**	**mg/m3**

C. SOURCE - Soil < 100 mg/kg

Soil contamination level	C_t	=	0.00E+00	mg/kg
Henry's Law Constant	H	=	2.30E-01	dimensionless
Bulk density (dry)	ρ_b	=	1.80E+00	gm/cc
Air-filled porosity	θ_a	=	2.00E-01	dimensionless
Water-filled porosity	θ_w	=	1.00E-01	dimensionless
Soil/water distribution coef.	K_d	=	6.20E-01	cm3/gm
Calculated soil gas concentration	$C_{sg}(s)$	=	**0.00E+00**	**mg/m3**

D. SOURCE - Measured Soil Gas

Measured soil gas concentration	$C_{sg}(m)$	=	**2.09E+00**	**mg/m3 (ug/l)**

E. SOIL GAS CONCENTRATION USED IN RISK CALCULATIONS >>>> **2.09E+00 mg/m3**

DIFFUSIVE TRANSPORT UPWARD IN UNSATURATED ZONE

Total porosity	θ	=	3.00E-01	dimensionless
Air-filled porosity	θ_a	=	2.00E-01	dimensionless
Diffusion coefficient in air	D_a	=	8.80E-02	cm2/sec
Effective diffusion coefficient	D_e	=	**4.60E-03**	cm2/sec
Depth of contamination or Csg	X	=	1.52E+00	m
Calculated Flux	F_x	=	**2.28E-03**	**mg/m2-hour**

Case Name: Davey Property - Typical Commercial Building

CALCULATING VAPOR CONCENTRATION IN BUILDING

A. INDOOR AIR COMPONENT

Floor area of building	A	=	1.00E+00	m2
% of floor area that flux occurs			1.00E+00	dimensionless
Attenuation factor(Crack factor)	S_b	=	1.00E-01	dimensionless
Flux area within building	Af	=	**1.00E-01**	m2
Interior Height of building	R_h	=	2.44E+00	m
Volume of building	V	=	**2.44E+00**	m3
Exchange rate of air	E	=	8.30E-01	exchanges/hr
Ventilation rate	Q	=	**2.03E+00**	m3/hr
Indoor air component	C_i	=	**1.12E-04**	**mg/m3**

B. OUTDOOR AIR COMPONENT

Downwind contamination length	L	=	0.00E+00	m
Wind speed	u	=	1.60E+04	m/hr
Height of building openings (or height of breathing zone)	h	=	2.00E+00	m
Outdoor air component	C_o	=	**0.00E+00**	**mg/m3**

C. TOTAL INDOOR AIR CONCENTRATION

	C_t	=	**1.12E-04**	**mg/m3**

EXPOSURE SCENARIO

Body weight	BW	=	7.00E+01	kg
Inhalation rate	IR	=	2.00E+01	m3/day
Exposure duration	ED	=	2.50E+01	yrs
Hours per day	conversion		1.20E+01	hr/day
Exposure time	ET	=	**5.00E-01**	hr/24 hours
Days per week	conversion		5.00E+00	days/week
Weeks per year	conversion		5.00E+01	weeks/yr
Exposure frequency	EF	=	**2.50E+02**	days/yr
Averaging Time (carc. risk)	AT	=	2.56E+04	days
Averaging Time (non-carc. risk)	AT	=	**9.13E+03**	days
Chemical Intake (carc. risk)	IT_c	=	**3.93E-06**	**mg/kg-day**
Chemical Intake (non-carc. risk)	IT_{nc}	=	**1.10E-05**	**mg/kg-day**

NON-CARCINOGENIC RISK (Chronic Risk)

Chemical Intake (non-carc. risk)	IT_{nc}	=	1.10E-05	mg/kg-day
Reference dose	RfD	=	1.70E-03	mg/kg-day
Hazard Index	**HI**	=	**6.47E-03**	

CARCINOGENIC RISK

Chemical Intake (carc. risk)	IT_c	=	3.93E-06	mg/kg-day
Slope factor (potency)	SF	=	1.00E-01	1/(mg/kg-day)
Cancer Risk	**Risk**	=	**3.93E-07**	

APPENDIX C
DRILLING PERMIT COVER SHEET

PERMIT # W100212
A.P.N. # 489-390-13
EST # H03126-001

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: SUSAN DAVEY / WURZELL ESTATE PROPERTY

SITE ADDRESS: 1279-1281 E. MAIN STREET, EL CAJON, CA 92021

PERMIT FOR: **3 BORINGS**

PERMIT APPROVAL DATE: DECEMBER 10, 2001

PERMIT EXPIRES ON: APRIL 9, 2002

PERMIT CONDITIONS:

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material.**

2. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

3. All wash water must be contained and disposed of properly.

4. All water and soil that is placed in drums must be labeled and stored as specified in the SAM Manual in: Section 5, Page 7, (5.)

5. Within 60 days of completing work, submit a well/boring construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

APPROVED BY: M Crystal DATE: 12/10/2001
MARISUE CRYSTAL

NOTIFIED: 12/10/01 MDC

APPENDIX D

METHODS AND PROCEDURES

APPENDIX D -- METHODS AND PROCEDURES

D.1 DRILLING AND SOIL SAMPLING PROCEDURES

Subsurface soil samples were collected by mechanical drilling methods using a truck-mounted drilling rig capable of drilling by continuous-flight hollow-stem auger (HSA) method. HSA methods are used when large-diameter or deep borings are required to investigate the subsurface and/or to install groundwater monitoring wells. Soil samples are collected as explained below.

In HSA drilling method, the augers and bits are decontaminated before and between borings by steam-cleaning to prevent cross-contamination by the drilling equipment. According to current SAM guidelines, equipment wash water must be contained on-site until laboratory results are available. Soil cuttings are contained in 55-gallon drums and labeled with respect to contents, origin, and contact person information.

During HSA drilling, soil samples are generally collected at five-foot intervals and at lithologic changes by driving a cylindrical sampler 18 inches into undisturbed soil beneath the base of the augers. When the sampler has reached its maximum penetration, it is withdrawn from the borehole and disassembled. Soil samples are retained and packaged, and the sampler is decontaminated by first scrubbing with a low-phosphate detergent solution, then rinsing with tap water, followed by deionized water.

In this soil sampling method, a portion of each sample is packed in a glass jar or a brass tube with Teflon™-lined lid or end caps. In most cases, the brass or stainless steel tubes are inserted within the sampler and packed with soil as the sampler is driven into the soils. Samples are labeled with respect to location, depth, and date, and then signed and sealed by the sampler. Samples are then entered onto a chain-of-custody form and preserved on ice or refrigerated until delivery to the analytical laboratory.

Field screening for the presence of volatile organic compounds is accomplished with a Foxboro Model 128 organic vapor analyzer (OVA) or photoionization detector (PID). To screen for organic vapors, a soil portion is placed in a one-quart sealable plastic bag, desegregated, and exposed to direct sunlight, which allows soil vapors to collect in the air space of the sealed bag. After a short period of time (five to ten minutes), the bag is pierced with the probe and the reading is recorded. The OVA is calibrated to methane or the PID is calibrated to isobutylene at the beginning of the day. The reading is an indication of the concentration of the volatile organic compounds in the soil sample relative to similar samples analyzed under the same conditions. OVA and PID readings for each bagged sample are noted on the boring and monitoring well logs.

All soil borings, mechanical or manual, are either permitted with the County of San Diego Department of Health Services for drilling deeper than 20 feet, for conditions where groundwater will be encountered, or to construct groundwater/vadose zone monitoring wells, or they are abandoned in accordance with California Department of Water Resources Bulletins 74-81 and 74-90.

D.2 DECONTAMINATION PROCEDURES

Drilling equipment was either steam cleaned or washing with a high-pressure spray. Equipment which was used for sampling and which was in direct contact with soil or groundwater underwent a stringent decontamination process. The procedures are as follows:

- Brush off loose dirt with a bristle brush or cloth in the decontamination area so no visible residuals remain.
- Using scrub brushes, wash equipment in a solution consisting of non-phosphate detergent and tap water.
- Rinse equipment in tap water.
- As the final step, rinse equipment with distilled water and allow to air dry.

D.3 GROUNDWATER MONITORING WELL CONSTRUCTION AND DEVELOPMENT PROCEDURES

Groundwater monitoring well construction is completed through the annular space of the eight- or ten-inch-diameter continuous-fight hollow-stem augers. Well construction details include extending a two-inch diameter polyvinyl chloride (PVC) casing from bottom of the borehole to the surface. The casing is factory perforated with 0.02 inch wide slots from the bottom of the borehole to approximately five feet above the water table. The remainder of the casing to the surface is unperforated. A filter pack of #3 commercially graded sand extends from the bottom of the borehole to approximately three feet above the perforated casing. To construct the well and prevent the borehole from collapsing, the augers are withdrawn from the subsurface as the sand pack and bentonite seal are placed within the annular space of the augers. When the sand pack has been placed, the well is then surged for a minimum of five minutes to settle the sand pack. Additional sand is then added if necessary to complete the construction according to specifications. The annular space is then sealed with three feet of hydrated bentonite clay. The remainder of the well is filled with cement grout. Above the grout, a locking, water-tight traffic-rated well cover is set in concrete to protect and secure the wellhead.

Following construction, the monitoring wells are developed by surging and bailing. Development continues until sand-free water is produced. Water quality parameters such as pH, conductivity and temperature are measured during development to insure that formational water is entering the well. Three to five borehole volumes of water are typically removed from the wells during development.

D.4 GROUNDWATER MONITORING WELL SAMPLING PROCEDURES

The following procedures for well sampling were developed after the SAM's publication entitled. Site Assessment and Mitigation (SA/M) Manual", dated January 1996, and updated for 2000 and 2002.

A. Using a decontaminated instrument (i.e., an interface probe), measure the depth to groundwater in reference to the measuring point at the top of the casing. Measure the total depth of the well to determine the height and volume of water in the well casing and borehole and record the measurements on the SECOR Monitoring Well Gauging Log form.

B. Decontaminate PVC and/or Teflon™ bailers by scrubbing with a long handled brush in a low-phosphate detergent solution, followed by a tap water rinse and then a deionized water rinse.

C. Utilize dedicated extraction tubing (lift pumps) or decontaminated pumping equipment (submersible pumps), as appropriate, to prepare pumping equipment for well purging.

D. Conduct field measurements for temperature, pH, and conductivity after approximately one borehole volume has been purged, or if the water level in the well is so low as to prevent further purging (i.e., the well is dry).

1) If the well has not been purged dry, continue to bail and/or pump an additional one-half borehole volume and conduct field measurements again.

a) If the first and second series of measurements vary by less than ten percent, the well has been adequately purged. Allow the well to recover to 80 percent of its static condition and begin the sampling procedure.

b) If the measurements vary by ten percent or greater, repeat Step D1 above.

2) If the well has been purged dry, measure the water level and allow the well to recharge to 80 percent of its static condition, or for two hours, whichever occurs first. Calculate the percent recovery.

a) If the well recovers less than 80 percent within two hours, it is a slow recharging well. Begin the sampling procedure.

b) If the well recovers to 80 percent or more within two hours, it is a fast recharging well. Repeat Step D1 above.

E. After adequate recharge of monitoring wells (approximately 80 percent recovery from maximum drawdown or after two hours if less than 80 percent is observed), use the decontaminated bailer to collect the groundwater sample.

F. Transfer the groundwater sample into the appropriate sample container(s) for the analyte to be tested, and label each sample using completed sample labels.

G. Discard or dedicate the bailer cord or pump tubing and repeat bailer/pumping equipment decontamination procedures in preparation of sampling the next well.

H. Complete Well Purging/Sampling Log forms for each well sampled and the chain-of-custody record.

I. When requested by client, collect field and trip blank samples of deionized water to check decontamination procedures. Additional and/or alternate field QA/QC samples can be collected and analyzed upon request.

J. Enter the sample onto the chain-of-custody form and preserve on ice in cooler until delivery to the analytical laboratory. Package samples for shipping; check each sample for proper labeling. Include the samples and custody paperwork in the cooler shipped to the laboratory.

APPENDIX E

BOREHOLE LOGS AND LEGEND

SECOR

BOREHOLE LOG

Number: SB-4

Client: Mr. Richard Reid

Job No: 08OT.04926.00

Sheet: 1 of 1

Location: Susan Davey Property
1279/ 1281 East Main Street
El Cajon, CA

Drilling Company/Driller: Tri-County Drilling, Inc.

SECOR Rep: Brian Demme

Approved by: CR Block

Date Started:	Date Finished:	Drill Rig/Sampling Method:	Borehole Dia.:	Casing Dia.:	Surface Elevation:
3/5/02	3/5/02	CME 75/ Hollow Stem Auger/ Continuous Core Barrel	8"	NA	NA

SAMPLE LOG			BOREHOLE LOG					
Sample Number	OVA/PID (ppm)	Lab Results TPH(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Backfill Detail
				0			Covered by: Asphalt (4") Base (4")	
				1	SM		Silty SAND, moderate brown (5YR 3/4), fine grained, moist, dense, slight hydrocarbon (HC) odor.	
				2				
				3				
				4				
SB-4/5'	10	<0.5		5				
				6				
				7				
				8				
				9			Becomes grayish brown (5YR 3/2). Strong HC odor.	
SB-4/10'	1,000	80		10				
				1			Becomes moderate brown (5YR 3/4). Very dense.	
SB-4/12'	1,000	1,400		2				
				3			TOTAL DEPTH DRILLED = 12' BGS	
				4			Borehole backfilled bentonite chips and capped with concrete.	
				15				
				6				
				7				
				8				
				9				
				20				
				1				
				2				
				3				
				4				
				25				
				6				
				7				
				8				
				9				
				30				

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SECOR

BOREHOLE LOG

Number:	SB-5
Client:	Mr. Richard Reid
Job No:	08OT.04926.00
Sheet:	1 of 1
Location:	Susan Davey Property 1279/ 1281 East Main Street El Cajon, CA
Drilling Company/Driller:	Tri-County Drilling, Inc.
SECOR Rep:	Brian Demme
Approved by:	CK Pollock
Date Started:	3/5/02
Date Finished:	3/5/02
Drill Rig/Sampling Method:	CME 75/ Hollow Stem Auger/ Continuous Core Barrel
Borehole Dia.:	8"
Casing Dia:.	NA
Surface Elevation:	NA

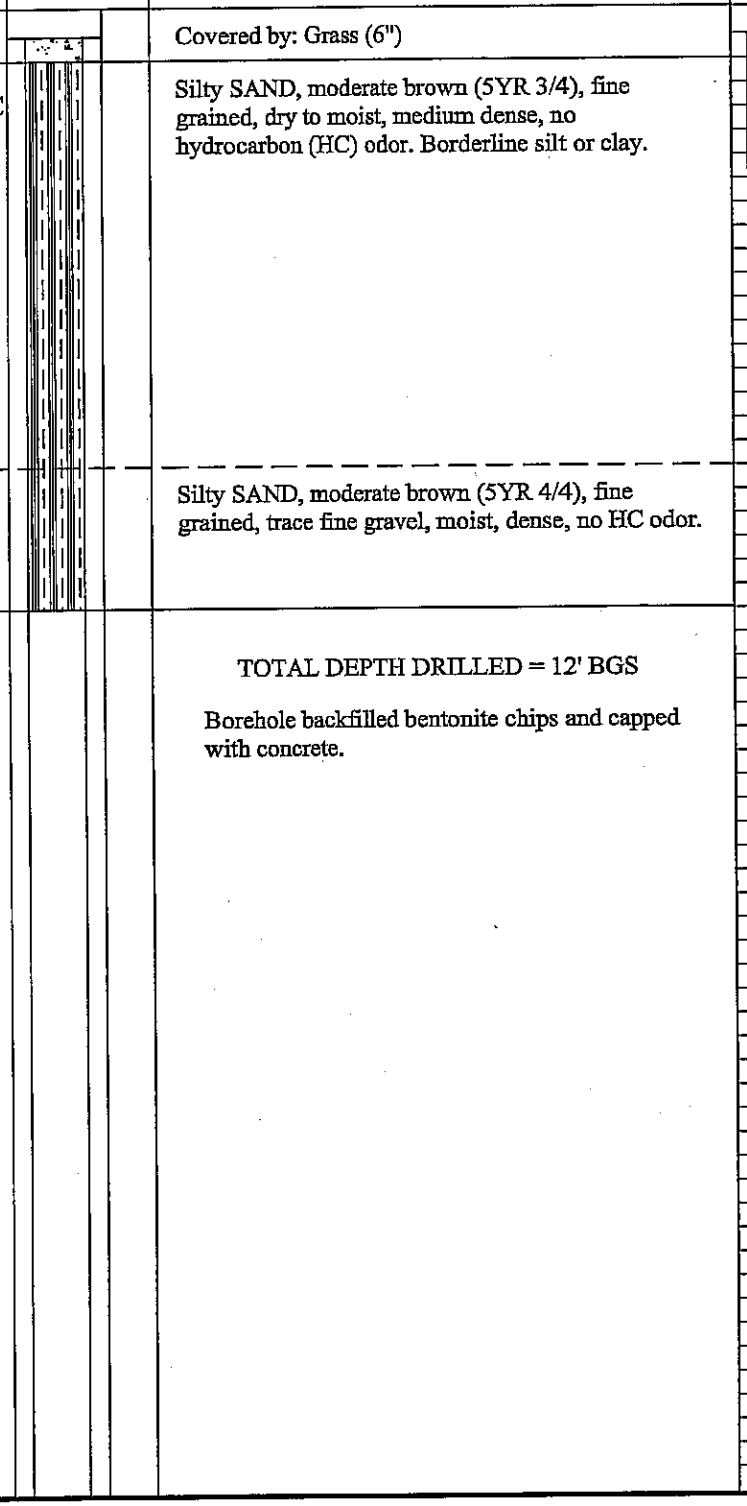
SAMPLE LOG			BOREHOLE LOG					
Sample Number	OVA/PID (ppm)	Lab Results TPH(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Backfill Detail
				0			Covered by: Asphalt (4") Base (4")	
				1	SM		Silty SAND, moderate brown (5YR 3/4), fine grained, trace coarse sand, weathered concrete, brick, moist, no hydrocarbon (HC) odor.	
				2				
				3				
				4				
SB-5/5'	0.0	<0.5		5				
				6				
				7				
				8				
				9			Becomes strong HC odor.	
SB-5/10'	1,000	960		10				
				1				
SB-5/12'	1,000	1,800		2				
				3			TOTAL DEPTH DRILLED = 12' BGS Borehole backfilled bentonite chips and capped with concrete.	
				4				
				15				
				6				
				7				
				8				
				9				
				20				
				1				
				2				
				3				
				4				
				25				
				6				
				7				
				8				
				9				
				30				

SECOR

BOREHOLE LOG

Number: SB-6			
Client: Mr. Richard Reid	Job No: 08OT.04926.00	Sheet: 1 of 1	
Location: Susan Davey Property, 1279/ 1281 East Main Street, El Cajon, CA	Drilling Company/Driller: Tri-County Drilling, Inc.		
SECOR Rep: Brian Demme	Approved by: CR Bollode		
Date Started: 3/5/02	Date Finished: 3/5/02	Drill Rig/Sampling Method: CME 75/ Hollow Stem Auger/ Continuous Core Barrel	
Borehole Dia.: 8"	Casing Dia.: NA	Surface Elevation: NA	

SAMPLE LOG			BOREHOLE LOG					
Sample Number	OVA/PID (ppm)	Lab Results TPH(ppm)	Density Blows/ft	Depth in Feet	USCS Symbol	Graphic Log	Geologic Description (Soil Type, Color, grain, minor soil component, moisture, density, odor, etc.)	Backfill Detail
				0			Covered by: Grass (6")	
				1	SM/SC		Silty SAND, moderate brown (5YR 3/4), fine grained, dry to moist, medium dense, no hydrocarbon (HC) odor. Borderline silt or clay.	
				2				
				3				
				4				
SB-6/5'	0.0	<0.5		5				
				6				
				7				
				8				
				9				
SB-6/10'	0.0	<0.5		10	SM		Silty SAND, moderate brown (5YR 4/4), fine grained, trace fine gravel, moist, dense, no HC odor.	
				1				
SB-6/12'	0.0	<0.5		2				
				3			TOTAL DEPTH DRILLED = 12' BGS	
				4			Borehole backfilled bentonite chips and capped with concrete.	
				15				
				6				
				7				
				8				
				9				
				20				
				1				
				2				
				3				
				4				
				25				
				6				
				7				
				8				
				9				
				30				



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DEFINITION OF TERMS

PRIMARY DIVISIONS			GRAPHIC SYMBOL	GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS More Than Half Of Material Is Larger Than No. 200 Sieve Size	GRAVELS More Than Half Of Coarse Fraction Is Larger Than No. 4 Sieve	Clean Gravels (Less Than 5% Fines)		GW	Well graded gravels, gravel-sand mixtures, little or no fines.
				GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		Gravel With Fines		GM	Clayey gravels, gravel-sand-clay mixtures, non-plastic fines.
				GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS More Than Half Of Coarse Fraction Is Smaller Than No. 4 Sieve	Clean Sands (Less Than 5% Fines)		SW	Well graded sands or gravelly sands, little or no fines.
				SP	Poorly graded sands or gravelly sands, little or no fines.
		Sands With Fines		SM	Silty sands, sand-silt mixtures, plastic fines.
				SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS More Than Half Of Material Is Smaller Than No. 200 Sieve Size	SILTS AND CLAYS Liquid Limit Is Less Than 50%			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
				OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS Liquid Limit Is Greater Than 50%			MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
				CH	Inorganic clays of high plasticity, fat clays.
				OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS				Pt	Peat and other highly organic soils.
				Dg	Decomposed granite.

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BOREHOLE/WELL LOG LEGEND

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GRAIN SIZES

	U.S. Stantard Series Sieve				Clear Square Sieve Openings			
	200	40	10	4	3/4"	3"	12"	
SILT and CLAYS	SAND			GRAVEL		COBBLES	BOULDERS	
	Fine	Medium	Coarse	Fine	Coarse			

RELATIVE DENSITY

Sand and Gravels	Blows/Foot†
Very Loose	0 - 4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Over 50

CONSISTENCY

Silt and Clays	Strength ‡	Blows/Foot†
Very Loose	0 - 1/4	0 - 2
Soft	1/4 - 1/2	2 - 4
Firm	1/2 - 1	2 - 4
Stiff	1 - 2	8 - 16
Very Stiff	2 - 4	16 - 32
Hard	Over 4	Over 32

† Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split Spoon (ASTM D-1586).

‡ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (AST D-1586), pocket penetrometer, torvane, or visual observation.

Graphic Log Symbols

- FP Free Product
- Ground Water (Static)
- Ground Water (First Encountered)

Well Design Symbol

< > Centralizer

Abbreviations Used

ags	Above Ground Surface
msl	Mean Sea Level
A/C	Asphalt/Concrete
Bent	Bentonite
bgs	Below Ground Surface
dia	Diameter
'	Feet
FP	Free Product
GW	Groundwater
HC	Hydrocarbon
"	Inches
med	Medium
mod	Moderate
NR	Not Recorded
ppm	Parts Per Million

Abbreviations Used

- Asphalt
- Concrete
- Concrete Slurry
- Bentonite
- Bentonite Grout
- Sand
- Screened Interval

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BOREHOLE/WELL LOG LEGEND

APPENDIX F

MONITORING WELL GAUGING LOG
WELL PURGING/SAMPLING LOGS

SECOR

MONITORING WELL GAUGING LOG

Site Name & Facility No: **Susan Davey Property**

Date: 2/19/02

Project Number: 08OT.~~048926~~.00 / 0010
04926

Field Representative(s): M. Siefert & M. Oliphant

Checked by:

Well No.	Previous QTR DTW	Gauging Time	Depth to Floating Product	Depth to Water (ft)	Floating Product Thickness	Total Casing Depth (ft)	Casing Elevation[1]	Groundwater Elevation[1]	Corrected Groundwater Elevation[1*]	Comments
MW-1	9.50	0930	—	9.80	—	20.00	N/A	N/A		
MW-2	10.55	0931	—	10.92	—	20.10	N/A	N/A		
MW-3	8.60	0939	—	8.70	—	17.60	N/A	N/A		Heavy Roots
MW-4	9.49	0935	—	9.88	—	20.25	N/A	N/A		
MW-5	10.37	0947	—	10.81	—	19.00	N/A	N/A		
MW-6	8.30	0950	—	8.66	—	18.50	N/A	N/A		
MW-7	10.25	0943	—	10.70	—	20.00	N/A	N/A		

Notes:
1 = feet above mean sea level unless noted otherwise
* = elevation adjusted by adding (.75 x product thickness) to measured water elevation
\- = not measured due to the present of liquid-phase hydrocarbons

Sheen = dicontinous, non-measurable thickness of LPH
Trace = continous, non-measurable thickness of LPH

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 1
Project Name:	Susan Davey Property
Date:	2/19/02
Project Number:	08OT.04926.00 / 0010
Sample Time:	1140
SECOR Rep:	M. Siefert
Checked by:	M. Ohl
Sample No:	MW- 1

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck X Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer CP-1

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12 Vault

Casing Diameter (in): 2 (4) 6 8 10 12

Depth to Water (DTW_1) (ft): 9.80

Total Well Depth (DTB) (ft): 20.00

Water Column: 10.20

Floating Product:

Thickness (in):

Borehole Volume (gal): 15.30

1.5 Borehole Volumes (gal): 22.95

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1100	Started Purging					
1109	14.39	15	6.64	19.4	1370	No Odor, Cloudy, Brown
1119	15.51	23	6.69	19.3	1389	" " "
1140	10.94	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 15.51

Pump Rate (GPM) = 1.21

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1140

Depth to Water at time of sampling (DTW_3): 10.94

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(9.80) - (10.94)}{(9.80) - (15.51)} = \frac{-1.14}{-5.71}$$

$$= 80\ \%$$

80% Recharge = 10.94

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 2
Project Name:	Susan Davey Property
Date:	2/19/02
Project Number:	08OT.04926.00 / 0010
Sample Time:	1452
SECOR Rep:	M. Siefert
Checked by:	[signature]
Sample No:	MW- 2

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck X Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer CP-1

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12 Vault

Casing Diameter (in): 2 (4) 6 8 10 12

Depth to Water (DTW_1) (ft): 10.92

Total Well Depth (DTB) (ft): 20.10

Water Column: 9.18

Floating Product:

Thickness (in):

Borehole Volume (gal): 13.77

1.5 Borehole Volumes (gal): 20.66

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1205	Started Purging					
1212	DRY	14	6.93	20.2	1260	Slight Odor, Cloudy, Brown
1252	DRY	21	6.98	22.0	1298	" " "
1452	13.75	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 20.10

Pump Rate (GPM) = 0.45

(●) Fast Recharging Well

X Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1452

Depth to Water at time of sampling (DTW_3): 13.75

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(10.92)-(13.75)}{(10.92)-(20.10)} = \frac{-2.83}{-9.18}$$

$$= 69\%$$

80% Recharge = 12.76

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 3
Project Name:	Susan Davey Property
Date:	2/19/02
Project Number:	08OT.04926.00 / 0010
Sample Time:	1128
SECOR Rep:	M. Siebert
Checked by:	M. Oft
Sample No:	MW- 3

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck X Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer CP-1

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12 Vault

Casing Diameter (in): 2 (4) 6 8 10 12

Depth to Water (DTW_1) (ft): 8.70

Total Well Depth (DTB) (ft): 17.60

Water Column: 8.90

Floating Product:

Thickness (in):

Borehole Volume (gal): 13.35

1.5 Borehole Volumes (gal): 20.03

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1007	Started Purging					
1019	DRY	13	6.62	27.0	1206	No Odor, Cloudy, Brown
1042	DRY	20	6.95	25.2	1329	" " "
1128	9.63	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 17.60

Pump Rate (GPM) = 0.57

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1128

Depth to Water at time of sampling (DTW_3): 9.63

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(8.70)-(9.63)}{(8.70)-(17.60)} = \frac{-0.93}{-8.90}$$

$$= 90\ \%$$

80% Recharge = 10.48

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Project Name:	Susan Davey Property	Well No:	MW- 4
Project Number:	08OT.04926.00 / 0010	Date:	2/19/02
SECOR Rep: M. Siefert	Checked by: M. O[illegible]	Sample Time:	1338
		Sample No:	MW- 4

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck X Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer CP-1

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): 8 (10) 12 Vault

Casing Diameter (in): 2 (4) 6 8 10 12

Depth to Water (DTW_1) (ft): 9.88

Total Well Depth (DTB) (ft): 20.25

Water Column: 10.37

Floating Product:

Thickness (in):

Borehole Volume (gal): 15.56

1.5 Borehole Volumes (gal): 23.33

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1230	Started Purging					
1240	13.13	16	6.80	22.3	1192	No Odor, Cloudy, Brown Black
1246	12.27	23	6.81	22.2	1253	" " "
1338	9.88	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 13.13

Pump Rate (GPM) = 1.44

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 13.38

Depth to Water at time of sampling (DTW_3): 9.88

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(9.88) - (9.88)}{(9.88) - (13.13)} = \frac{-0.00}{-3.25}$$

$$= 100\ \%$$

80% Recharge = 10.53

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 5
Project Name:	Susan Davey Property
Date:	2/19/02
Project Number:	08OT.04926.00 / 0010
Sample Time:	1345
SECOR Rep:	M. Siebert
Checked by:	M.O'H
Sample No:	MW- 5

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck X Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer CP-1

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): (8) 10 12 Vault

Casing Diameter (in): (2) 4 6 8 10 12

Depth to Water (DTW_1) (ft): 10.81

Total Well Depth (DTB) (ft): 19.00

Water Column: 8.19

Floating Product:

Thickness (in):

Borehole Volume (gal): 6.63

1.5 Borehole Volumes (gal): 9.95

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1310	Started Purging					
1318	15.05	7	6.74	23.0	1201	No Odor, Cloudy, Brown
1325	14.91	10	6.73	23.2	1261	" " "
1345	10.82	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 15.05

Pump Rate (GPM) = 0.67

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1345

Depth to Water at time of sampling (DTW_3): 10.82

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(10.81) - (10.82)}{(10.81) - (15.05)} = \frac{-0.01}{-4.23} = 100\%$$

80% Recharge = 11.66

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No: MW- 6

Project Name: Susan Davey Property

Date: 2/19/02

Project Number: 08OT.04926.00 / 0010

Sample Time: 1426

SECOR Rep: M. Siefert

Checked by: M. Offt

Sample No: MW- 6

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck X Bailer ___ Submersible Pump ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer CPI

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): (8) 10 12 Vault

Casing Diameter (in): (2) 4 6 8 10 12

Depth to Water (DTW_1) (ft): 8.66

Total Well Depth (DTB) (ft): 18.50

Water Column: 9.84

Floating Product:

Thickness (in):

Borehole Volume (gal): 7.97

1.5 Borehole Volumes (gal): 11.96

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1400	Started Purging					
1406	9.99	8	6.88	20.0	1436	No Odor, cloudy, Brown
1412	10.31	12	6.83	21.9	1367	" " "
1426	8.66	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 10.31

Pump Rate (GPM) = 1.00

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1426

Depth to Water at time of sampling (DTW_3): 8.66

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(8.66)-(8.66)}{(8.66)-(10.31)} = \frac{-0.00}{-1.65}$$

$$= 100\ \%$$

80% Recharge = 8.99

SECOR

INTERNATIONAL INCORPORATED

WELL PURGING / SAMPLING LOG

Well No:	MW- 7
Project Name:	Susan Davey Property
Date:	2/19/02
Project Number:	08OT.04926.00 / 0010
Sample Time:	1104
SECOR Rep:	M. SicSert / M. Oliphant
Checked by:	M. Oliphant
Sample No:	MW- 7

PURGING & SAMPLING EQUIPMENT / METHOD

Water Level Meter Type & ID: Solinist # 5

Purging Equipment / Method: ___ Vac Truck ___ Submersible Pump X Bailer ___ Other

pH Temp/Conductivity Meter Type / ID: Cole Parmer EP-1

Sampling Method: ___ Teflon Bailer X Disposable Bailer ___ Other:

Decontamination Method: ___ Steam / High Pressure Wash X 3 Stage (Alconox, Tap & DI rinse) ___ Other:

WELL SPECIFICATIONS & MEASUREMENTS

Borehole Diameter (in): (8) 10 12 Vault

Casing Diameter (in): (2) 4 6 8 10 12

Depth to Water (DTW_1) (ft): 10.70

Total Well Depth (DTB) (ft): 20.00

Water Column: 9.30

Floating Product:

Thickness (in):

Borehole Volume (gal): 7.53

1.5 Borehole Volumes (gal): 11.30

PURGING INFORMATION

Time	DTW (ft)	Water Volume Purged (gal)	pH	Temp (°C)	Elect. Cond. (μ mhos)	Water Description (odor, turbidity, color)
1000	Started Purging					
1022	DRY	8	6.73	25.2	1397	BROWN, NO ODOR, Brown
1035	DRY	11	6.95	24.3	1382	" " " "
1104	12.56	SAMPLE	—	—	—	—

Maximum Drawdown (DTW_2) (ft) = 20.00

Pump Rate (GPM) = 0.31

X Fast Recharging Well

___ Slow Recharging Well

SAMPLING INFORMATION

Time Sampled: 1104

Depth to Water at time of sampling (DTW_3): 12.56

Container Types & Volumes	Filtered (Y/N)	Sample Preservatives	Analytical Parameters
2 or (3) x 40ml VOAs		(HCL & ICE) or NONE	TPHg, BTEX, MTBE, (8015, 8260)
			DIPE, TAME, ETBE, TBA (8260b)

BOREHOLE VOLUME CALCULATIONS

The calculation of one borehole volume is based on the formula in the SAM Manual.

Casing Diameter (in)	Borehole Diameter (in)	Calculated Borehole Volume (gal)
2	8	.81 ($DTB-DTW_1$)
2	10	1.14 ($DTB-DTW_1$)
4	10	1.50 ($DTB-DTW_1$)
4	12	1.95 ($DTB-DTW_1$)

Notes:

RECOVERY CALCULATIONS

$$\% \text{ of Recovery} = 1 - \frac{(DTW_1) - (DTW_3)}{(DTW_1) - (DTW_2)} \times 100$$

$$\% \text{ of Recovery} = 1 - \frac{(10.70) - (12.56)}{(10.70) - (20.00)} = \frac{-1.86}{-9.30}$$

$$= 80\ \%$$

80% Recharge = 12.56

APPENDIX G

WASTE DISPOSAL DOCUMENTATION

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. . . . . .

Manifest Document No. 20640

2. Page 1 of 1

3. Generator's Name and Mailing Address
Susan Davey Property
1279/1281 E. Main St., El Cajon, CA 92020

4. Generator's Phone (619-296-6195 Contact: Brian Demmis

5. Transporter 1 Company Name
EFR Environmental Services, Inc.

6. US EPA ID Number
CAR000011205

A. Transporter's Phone 619-956-2770

7. Transporter 2 Company Name

8. US EPA ID Number . . . . . .

B. Transporter's Phone

9. Designated Facility Name and Site Address
Dome Rock Industries, Inc.
3125 W. Dome Rock Road
Quartzsite, AZ 85359

10. US EPA ID Number
AZR000035915

C. Facility's Phone
928-927-7688

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. Non-Hazardous Waste Liquid	002	Dm	00110	G
b. Non-Hazardous Waste Solid	002	Dm	01000	P
c.				
d.				

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By

D. Additional Descriptions for Materials Listed Above
11a. Acceptance# 6195PW071 (Purge Water)
11b. Acceptance# 6195SC015 (Soil Cuttings)

E. Handling Codes for Wastes Listed Above
11a. 01
11b. 01

15. Special Handling Instructions and Additional Information

ALWAYS WEAR APPROPRIATE P.P.E. AND USE SAFE HANDLING METHODS
Please mail C/O Secor International, Inc.-2655 Camino Del Rio No., Ste. 302
San Diego, CA 92108-1633

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Octavio Quintero (Agent) Signature: Octavio Quintero Month 03 Day 20 Year 02

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Octavio Quintero Signature: Octavio Quintero Month 03 Day 20 Year 02

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: JERRY R. JARRETT Signature: Jerry R. Jarrett Month 03 Day 23 Year 02

GENERATOR

TRANSPORTER

FACILITY

Printed by J. L. KELLER & ASSOCIATES, INC.
Lenexa, WI 54967-0368

ORIGINAL - RETURN TO GENERATOR

12-BLC-M6

APPENDIX H

SUBSURFACE SOIL AND GROUNDWATER LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

HP LABS

RECEIVED
FEB 19 2002
By

2/14/02

Secor International
2655 Camino Del Rio North
San Diego, CA

Project Name: Susan Davy Property - San Diego
Project No.: 080T.04926

Attention: Mr. Peter Rubens

The following sample(s) were received and analyzed:

Date Received	Quantity	Matrix	Date Received	Quantity	Matrix
2/8/02	7	soil			

The samples were analyzed by one or more of the EPA methodologies or equivalent methods listed below.

TPH -- CA DHS "Total Petroleum Hydrocarbons"
VOCs -- EPA Method 8260

The results are included with a summary of the quality control procedures. Please note that the symbol "nd" indicates a value below the reporting limit for the particular compound in the sample.

Please feel free to call us to discuss any part of this report or to schedule future projects.

Sincerely,

Tamara Davis
Lab Director

Mobile One Laboratories is certified by the California Department of Health Services (certificate #s: 1194, 1561, 1921, 2088, 2278).

HP Labs Project # SE021102-31

148 S. Vinewood Street • Escondido, CA 92029 • Phone (760) 735-3208 • Fax (760) 735-2469
432 N. Cedros Avenue • Solana Beach, CA 92075 • Phone (858) 793-0401 • Fax (858) 793-0404
2373 208th Street Suite F-1 • Torrance, CA 90501 • Phone (310) 782-2929 • Fax (310) 782-2798

Report Summary

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: mg/kg

Method =	TPH
Analyte =	Gasoline C_6-C_{12}
Detection Limit -	10
SAMPLE I.D.	
Date Analyzed: 02/12/02	
blank	nd
SS-1	nd
SS-2	nd
SS-3	nd
SS-4	nd
SS-5	nd
SS-6	nd
SS-7	nd

Footnotes: See Footnote Summary page.
Analyses performed by: A. Kim
SE021102-31

Report Summary

EPA Method 8260B (5035 Prep.)

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: ug/kg

Sample Name:		SS-1	SS-2	SS-3	SS-4	SS-5	SS-6
Analysis Date		12 Feb 2002	12 Feb 2002	12 Feb 2002	12 Feb 2002	13 Feb 2002	13 Feb 2002
Analysis Time		7:50 pm	8:11 pm	8:32 pm	8:54 pm	12:26 pm	12:50 pm
Dilution Factor:	1	1	1	1	1	1	1
Purge Volume(cc):							
Compound	E.Q.L	Amount Found	Amount Found	Amount Found	Amount Found	Amount Found	Amount Found
Methyl-t-butylether (MTBE	10	nd	nd	nd	nd	nd	nd
Benzene	10	nd	nd	nd	nd	nd	nd
Toluene	10	nd	nd	nd	nd	nd	nd
Ethylbenzene	10	nd	nd	nd	nd	nd	nd
m,p-Xylene	10	nd	nd	nd	nd	nd	nd
o-Xylene	10	nd	nd	nd	nd	nd	nd

Surrogates	Spiked	QC Limits(% Rec.)	Percent Recovery					
DBFM	50 ng	65-135	104	102	106	104	99	103
1,2-DCA-d4	50 ng	52-149	128	127	133	130	115	122
Toluene - d8	50 ng	65-135	110	110	110	108	110	111
1,4-BFB	50 ng	65-135	105	105	108	108	104	106

Analyses performed by: A. Kim

SE021102-31

EPA Method 8260B (5035 Prep.)

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: ug/kg

Sample Name:	SS-7		blank	blank
Analysis Date	13 Feb 2002		12 Feb 2002	13 Feb 2002
Analysis Time	6:14 pm		10:37 am	11:56 am
Dilution Factor:	1	1	1	1
Purge Volume(cc):				
Compound	E.Q.L	Amount Found	Amount Found	Amount Found
Methyl-t-butylether (MTBE	10	nd	nd	nd
Benzene	10	nd	nd	nd
Toluene	10	nd	nd	nd
Ethylbenzene	10	nd	nd	nd
m,p-Xylene	10	nd	nd	nd
o-Xylene	10	nd	nd	nd

Surrogates	Spiked	QC Limits(% Rec.)		Percent Recovery	
DBFM	50 ng	65-135	96	102	100
1,2-DCA-d4	50 ng	52-149	112	118	117
Toluene - d8	50 ng	65-135	109	110	111
1,4-BFB	50 ng	65-135	102	106	105

Analyses performed by: A. Kim

SE021102-31

QC Summary

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil

Method 8260	1,1-DCE	Benzene	TCE	Toluene	Cl-Benz
Recovery % QC Limits	(65-135)	(65-135)	(65-135)	(64-135)	(65-135)
RPD - % QC Limits	<30	<30	<30	<30	<30
Date Analyzed: 2/12/02					
Spike Level (ug/kg)	50.0	50.0	50.0	50.0	50.0
Sample Amount	0.0	0.0	0.0	2.2	0.0
MS Amount Found	51.2	53.0	52.3	55.4	44.4
MSD Amount Found	53.4	55.4	55.1	56.5	47.7
MS Recovery	102.4	106.0	104.5	106.4	88.8
MSD Recovery	106.8	110.8	110.2	108.6	95.4
RPD - %	4.2	4.4	5.3	2.0	7.2
Date Analyzed: 2/13/02					
Spike Level (ug/kg)	50.0	50.0	50.0	50.0	50.0
Sample Amount	0.0	0.3	0.0	3.8	0.0
MS Amount Found	51.5	52.5	52.0	56.3	45.7
MSD Amount Found	55.3	57.8	58.1	60.9	50.9
MS Recovery	103.0	104.4	104.0	105.0	91.3
MSD Recovery	110.6	114.9	116.2	114.2	101.8
RPD - %	7.0	9.6	11.0	8.4	10.9

Calibration verification was within acceptable limits.

SE021102-31

Calibration Verification

EPA Method 8260B

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: ug/kg

Sample Name: **ccv**
Analysis Date 12 Feb 2002
Analysis Time 9:47 am
Dilution Factor: 1

Compound		Amount Found	Percent Diff	CCC (-20 to +20%) Pass	EPA 8260 (-20 to +20%) Pass
Dichlorodifluoromethane		49	-3		yes
Chloromethane		39	-21		no
Vinyl Chloride	CCC	46	-9	yes	yes
Bromomethane		54	8		yes
Chloroethane		44	-12		yes
Trichlorofluoromethane		57	13		yes
1,1-Dichloroethene	CCC	51	2	yes	yes
Methylene Chloride		49	-3		yes
Methyl-t-butylether		47	-6		yes
trans-1,2-Dichloroethene		51	2		yes
1,1-Dichloroethane		45	-11		yes
2,2-Dichloropropane		57	15		yes
cis-1,2-Dichloroethene		49	-2		yes
Chloroform	CCC	56	12	yes	yes
Bromochloromethane		42	-16		yes
1,1,1-Trichloroethane		55	11		yes
1,1-Dichloropropene		53	6		yes
Carbon Tetrachloride		50	0		yes
1,2-Dichloroethane		53	5		yes
Benzene		50	1		yes
Trichloroethene		50	1		yes
1,2-Dichloropropane	CCC	40	-20	no	no
Bromodichloromethane		52	3		yes
Dibromomethane		44	-12		yes
cis-1,3-Dichloropropene		48	-5		yes
Toluene	CCC	52	4	yes	yes
trans-1,3-Dichloropropene		47	-5		yes
1,1,2-Trichloroethane		44	-12		yes
1,2-Dibromoethane		40	-19		yes
1,3-Dichloropropane		41	-17		yes

Calibration Verification

EPA Method 8260B

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: ug/kg

Sample Name: ccv

Compound		Amount Found	Percent Diff		EPA 8260 (-20 to +20%) Pass
Tetrachloroethene		40	-20		no
Dibromochloromethane		36	-27		no
Chlorobenzene		43	-15		yes
Ethylbenzene	CCC	44	-12	yes	yes
1,1,1,2-Tetrachloroethane		42	-16		yes
m,p-Xylene		87	-13		yes
o-Xylene		43	-14		yes
Styrene		42	-16		yes
Bromoform		41	-19		yes
Isopropylbenzene		50	0		yes
1,1,2,2-Tetrachloroethane		41	-18		yes
1,2,3-Trichloropropane		46	-9		yes
n-propylbenzene		54	9		yes
Bromobenzene		48	-4		yes
1,3,5-Trimethylbenzene		52	3		yes
2-Chlorotoluene		55	10		yes
4-Chlorotoluene		55	9		yes
tert-Butylbenzene		48	-4		yes
1,2,4-Trimethylbenzene		50	0		yes
sec-Butylbenzene		48	-3		yes
p-Isopropyltoluene		48	-5		yes
1,3-Dichlorobenzene		45	-9		yes
1,4-Dichlorobenzene		45	-10		yes
n-Butylbenzene		53	6		yes
1,2-Dichlorobenzene		43	-14		yes
1,2-Dibromo-3-chloropropane		37	-26		no
1,2,4-Trichlorobenzene		45	-9		yes
Hexachlorobutadiene		49	-1		yes
Naphthalene		36	-27		no
1,2,3-Trichlorobenzene		43	-14		yes

Surrogates	Spiked	QC Limits(% Rec.)	
DBFM	50 ng	80-120	93
1,2-DCA-d4	50 ng	65-135	110
Toluene - d8	50 ng	80-120	104
1,4-BFB	50 ng	65-135	97

SUMMATION

All compounds	PASS	the average % Diff. Criteria
54 compounds	PASS	the 20% criteria

CALIBRATION VERIFIED

Calibration Verification

EPA Method 8260B

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: ug/kg

Sample Name: ccv
Analysis Date 13 Feb 2002
Analysis Time 8:52 am
Dilution Factor: 1

Compound		Amount Found	Percent Diff	CCC (-20 to +20%) Pass	EPA 8260 (-20 to +20%) Pass
Dichlorodifluoromethane		48	-3		yes
Chloromethane		39	-22		no
Vinyl Chloride	CCC	44	-13	yes	yes
Bromomethane		54	7		yes
Chloroethane		46	-8		yes
Trichlorofluoromethane		58	15		yes
1,1-Dichloroethene	CCC	53	6	yes	yes
Methylene Chloride		50	1		yes
Methyl-t-butylether		64	28		no
trans-1,2-Dichloroethene		54	8		yes
1,1-Dichloroethane		47	-6		yes
2,2-Dichloropropane		58	16		yes
cis-1,2-Dichloroethene		51	1		yes
Chloroform	CCC	57	15	yes	yes
Bromochloromethane		42	-16		yes
1,1,1-Trichloroethane		58	15		yes
1,1-Dichloropropene		56	12		yes
Carbon Tetrachloride		53	6		yes
1,2-Dichloroethane		53	5		yes
Benzene		53	7		yes
Trichloroethene		53	7		yes
1,2-Dichloropropane	CCC	42	-16	yes	yes
Bromodichloromethane		53	5		yes
Dibromomethane		45	-11		yes
cis-1,3-Dichloropropene		49	-1		yes
Toluene	CCC	60	20	no	no
trans-1,3-Dichloropropene		49	-3		yes
1,1,2-Trichloroethane		44	-12		yes
1,2-Dibromoethane		40	-21		no
1,3-Dichloropropane		41	-18		yes

SE021102-31

Calibration verification

EPA Method 8260B

Client: Secor International
Project: Susan Davy Property - San Diego

Matrix: soil
Units: ug/kg

Sample Name:		ccv			EPA 8260 (-20 to +20%)
Compound		Amount Found	Percent Diff		Pass
Tetrachloroethene		42	-16		yes
Dibromochloromethane		36	-29		no
Chlorobenzene		43	-15		yes
Ethylbenzene	CCC	46	-7	yes	yes
1,1,1,2-Tetrachloroethane		42	-15		yes
m,p-Xylene		94	-6		yes
o-Xylene		45	-10		yes
Styrene		43	-14		yes
Bromoform		41	-18		yes
Isopropylbenzene		54	9		yes
1,1,2,2-Tetrachloroethane		42	-17		yes
1,2,3-Trichloropropane		45	-10		yes
n-propylbenzene		60	21		no
Bromobenzene		51	2		yes
1,3,5-Trimethylbenzene		56	12		yes
2-Chlorotoluene		59	18		yes
4-Chlorotoluene		58	16		yes
tert-Butylbenzene		52	4		yes
1,2,4-Trimethylbenzene		59	17		yes
sec-Butylbenzene		52	5		yes
p-Isopropyltoluene		52	5		yes
1,3-Dichlorobenzene		48	-4		yes
1,4-Dichlorobenzene		47	-6		yes
n-Butylbenzene		59	18		yes
1,2-Dichlorobenzene		43	-15		yes
1,2-Dibromo-3-chloropropane		40	-20		yes
1,2,4-Trichlorobenzene		49	-2		yes
Hexachlorobutadiene		55	11		yes
Naphthalene		40	-20		yes
1,2,3-Trichlorobenzene		45	-10		yes

Surrogates	Spiked	QC Limits(% Rec.)	
DBFM	50 ng	80-120	92
1,2-DCA-d4	50 ng	65-135	107
Toluene - d8	50 ng	80-120	105
1,4-BFB	50 ng	65-135	98

SUMMATION

All compounds	PASS	the average % Diff. Criteria
54 compounds	PASS	the 20% criteria

CALIBRATION VERIFIED

Footnote Summary

Footnote	Definition
E.Q.L.	Estimated Quantitation Limit
nd	Not detected above the E.Q.L. or detection limit.
J	The concentration reported is between the Method Detection Limit and the E.Q.L.
D	Concentration reported from a secondary dilution; E.Q.L.s adjusted accordingly.
B	Analyte found in the associated blank.
E	Analyte amount exceeds calibration range. Amount quantitated by extrapolation.
***	MS/MSD, LCS/LCSD recovery is outside QC range; no corrective action taken.
M	Surrogate recovery outside QC range due to matrix interference.
S	Because of necessary sample dilution, value was outside QC limits.
&	Gasoline range organics not identified as gasoline.
#	Diesel range organics not identified as diesel.
**	This compound has been screened by EPA method 8020. Any positive results should be confirmed by a second analysis.

teg TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

CHAIN-OF-CUSTODY RECORD

P.O. #:

CLIENT: ~~SUS~~ SECOR INTERNATIONAL
ADDRESS: 2655 CAMINO DEL RIO NORTH
PHONE: 619 296 6195 FAX: 619 296-6199
CLIENT PROJECT #: 080T.04926 PROJECT MANAGER: Peter Rubens

DATE: 2/7/02 PAGE 1 OF 1 OUTSIDE LAB #
TEG PROJECT #: SE020702-L2
LOCATION: SAN DIEGO
COLLECTOR: BRIAN M DEMME DATE OF COLLECTION: 2/7/02

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)*	TPH 8015 (diesel)	TPH 8015 (g & d)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	METALS	BTEX	MTBE 8260	~~[illegible]~~ BMD	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
SS-1	3'	1045	SOIL	4oz Glass						X											X	X	X		1	
SS-2	3'	1047	SOIL	4oz Glass						X											X	X			2	
SS-3	3'	1048	SOIL	4oz Glass						X											X	X			3	
SS-4	3'	1051	SOIL	4oz Glass						X											X	X		SIDEWALL	4	
SS-5	3'	1054	SOIL	4oz Glass						X											X	X		SIDEWALL	5	
SS-6	3'	1108	SOIL	4oz Glass						X											X	X			6	
SS-7	3'	1115	SOIL	4oz Glass						X											X	X			7	

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
Brian M Demme	2/8/02	Louis A. Adams	2/8/02 1:40pm
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	7
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Std TAT

ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-1
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-4/5'
Analyzed:	03/12/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Xylenes	0.005	ND
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		99
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-1.xls
DZ/sks/pv/jh

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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-2
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-4/10'
Analyzed:	03/12/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.1	ND
Toluene	0.1	ND
Ethylbenzene	0.1	0.4
Xylenes	0.1	1.2
Methyl-t-Butyl Ether (MTBE)	0.1	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	10.	80.
BTX as a Percent of Fuel		2

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
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REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-3
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-4/12'
Analyzed:	03/12/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.5	0.9
Toluene	0.5	21.
Ethylbenzene	0.5	20.
Xylenes	0.5	190.
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		102
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	1400.
BTX as a Percent of Fuel		15

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-3.xls
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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-4
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-5/5'
Analyzed:	03/12/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Xylenes	0.005	ND
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		96
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-4.xls
DZ/sks/pv/jh

ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-5
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-5/10'
Analyzed:	03/12/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.5	1.5
Toluene	0.5	18.
Ethylbenzene	0.5	11.
Xylenes	0.5	69.
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	960.
BTX as a Percent of Fuel		9

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-5.xls
DZ/sks/pv/jh

ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-6
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-5/12'
Analyzed:	03/13/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.5	3.9
Toluene	0.5	44.
Ethylbenzene	0.5	22.
Xylenes	0.5	150.
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		107
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	1800.
BTX as a Percent of Fuel		11

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-6.xls
DZ/sks/pv/ccc/jh

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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-7
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-6/5'
Analyzed:	03/13/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Xylenes	0.005	0.015
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		99
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-7.xls
DZ/sks/pv/ccc/jh

ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-8
Collected:	03/05/02
Received:	03/06/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-6/10'
Analyzed:	03/13/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	0.015
Toluene	0.005	0.040
Ethylbenzene	0.005	0.007
Xylenes	0.005	0.028
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		102
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70313
MSD #7
26840-8.xls
DZ/sks/pv/jh

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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Peter Rubens SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108

Lab Number:	26840-9
Collected:	3/5/02
Received:	3/6/02
Matrix:	Soil

Project:	Susan Davey Property El Cajon, Ca
Project Number:	08OT.04926.0007
Collected by:	Brian M. Demme

Sample Description:	SB-6/12'
Analyzed:	3/13/02
Method:	See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Xylenes	0.005	ND
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		99
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: MTBE not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
26840-9.xls
DZ/sks/pv/ccc/jh

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
BLANK RESULTS

Client: ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401	Lab Number: BLK VS70312 Collected: Received: Matrix: Soil
Project: Project Number: Collected by:	Sample Description: Instrument Blank Analyzed: 03/12/02 Method: See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Xylenes	0.005	ND
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		99
TOTAL PETROLEUM HYDROCARBONS		
Gasoline	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
VS70312c.xls
DZ/sks/pv

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
BLANK RESULTS

Client: ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401	Lab Number: BLK VS70313 Collected: Received: Matrix: Soil
Project: Project Number: Collected by:	Sample Description: Instrument Blank Analyzed: 03/13/02 Method: See Below

CONSTITUENT	PQL* mg/kg	RESULT** mg/kg
Benzene	0.005	ND
Toluene	0.005	ND
Ethylbenzene	0.005	ND
Xylenes	0.005	ND
Methyl-t-Butyl Ether (MTBE)	0.005	ND
Percent Surrogate Recovery		96
TOTAL PETROLEUM HYDROCARBONS		
Gasoline	0.5	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70313
MSD #7
VS70313b.xls
DZ/sks/ccc

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QS VS70312
Collected:
Received:
Matrix: Soil

Project:
Project Number:
Collected by:

Sample Description: Quality Assurance Spike
Analyzed: 03/12/02
Method: See Below

CONSTITUENT	Amount Spiked mg/kg	Amount Recovered mg/kg	Percent Recovery
Benzene	0.012	0.011	92
Toluene	0.162	0.157	97
Ethylbenzene	0.048	0.041	85
Xylenes	0.251	0.221	88
Methyl t-Butyl Ether (MTBE)	0.145	0.152	105
Percent Surrogate Recovery			102
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	2.50	2.71	108
BTX as a Percent of Fuel	17	14	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
VS70312q.xls
DZ/sks/jh

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ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE DUPLICATE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QSD VS70312
Collected:
Received:
Matrix: Soil

Project:

Project Number:
Collected by:

Sample Description: Quality Assurance Spike Duplicate
Analyzed: 03/12/02
Method: See Below

CONSTITUENT	Amount Spiked mg/kg	Amount Recovered mg/kg	Percent Recovery	Relative Percent Difference*
Benzene	0.012	0.011	92	0
Toluene	0.162	0.159	98	1
Ethylbenzene	0.048	0.042	88	2
Xylenes	0.251	0.223	89	1
Methyl t-Butyl Ether (MTBE)	0.145	0.156	108	3
Percent Surrogate Recovery			102	
TOTAL PETROLEUM HYDROCARBONS				
Gasoline	2.50	2.63	105	3
BTX as a Percent of Fuel	17	15		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*Relative Percent Difference of the spike and spike duplicate

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VS70312
MSD #7
VS70312q.xls
DZ/sks/jh

Chain-of Custody Number:

SECOR Chain-of Custody Record

Field Office: SECOR INTERNATIONAL INC
Address: 2655 CAMINO DEL RIO NORTH
SAN DIEGO, CA

☐ Additional documents are attached, and are a part of this Record.

Job Name: SUSAN DAVEY PROPERTY
Location: 1279/1281 EAST MAIN ST
EL CAJON - CA

Project # 080T04926 Task # 0007
Project Manager Peter Rubens
Laboratory Zymax
Turnaround Time Standard

Sampler's Name Brian M Demme
Sampler's Signature Brian M Demme

Analysis Request

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	TPHg, BTEX, 8015/8020 *		Comments/ Instructions	Number of Containers
SB-4/5'	3/5	0830	Soil													X		26840-1	1
SB-4/10'		0900														X		Strong HC odor -2	1
SB-4/12'		0915														X		Strong HC odor -3	1
SB-5/5'		1024														X		-4	1
SB-5/10'		1040														X		Strong HC odor -5	1
SB-5/12'		1046														X		Strong HC odor -6	1
SB-6/5'		1207														X		-7	1
SB-6/10'		1209														X		-8	1
SB-6/12'		1221														X		-9	1

Special Instructions/Comments:
* BTEXg+MTBE by 8260 per B Demme 3/6/02

Relinquished by: SAMPLER
Sign Brian M Demme
Print Brian M Demme
Company SECOR
Time 13:35 Date 3/06/02

Received by: LAB
Sign [illegible]
Print JIM WHITE
Company ZYMAX
Time 13:35 Date 3/6/02

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print
Company
Time Date

Sample Receipt
Total no. of containers: 9
Chain of custody seals:
Rec'd in good condition/cold:
Conforms to record:

Client: SECOR INT
Client Contact: Brian Demme
Client Phone: 619 296 6195

SECOR CUSTREC Rev. 2/99

Date: 3 / 06 / 02 Page 1 of 1

ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-1
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-1
Analyzed:	02/24/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	39.
Toluene	0.5	0.6
Ethylbenzene	0.5	69.
Xylenes	0.5	0.9
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	10.
Diisopropyl Ether (DIPE)	0.5	46.
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	78.
Percent Surrogate Recovery		101
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	700.
BTX as a Percent of Fuel		6

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA70223
MSD #7
26673-1.xls
DZ/jgt/pv/cc

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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-2
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-2
Analyzed:	02/26/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	20.	640.
Toluene	20.	83.
Ethylbenzene	20.	270.
Xylenes	20.	830.
t-Amyl Methyl Ether (TAME)	20.	ND
t-Butyl Alcohol (TBA)	200.	ND
Diisopropyl Ether (DIPE)	20.	680.
Ethyl-t-Butyl Ether (ETBE)	20.	ND
Methyl-t-Butyl Ether (MTBE)	20.	ND
Percent Surrogate Recovery		108
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	2000.	6300.
BTX as a Percent of Fuel		25

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110226
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26673-2.xls
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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-3
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-3
Analyzed:	02/26/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		105
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110226
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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-4
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-4
Analyzed:	02/26/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	59.
Toluene	0.5	11.
Ethylbenzene	0.5	19.
Xylenes	0.5	54.
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	0.9
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	0.7
Percent Surrogate Recovery		102
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	480.
BTX as a Percent of Fuel		26

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110226
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REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-5
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-5
Analyzed:	02/26/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		104
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

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REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-6
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-6
Analyzed:	02/26/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		104
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

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ZymaX envirotechnology

REPORT OF ANALYTICAL RESULTS

Client:	Brian Demme SECOR International Inc. 2655 Camino Del Rio N., Ste. 302 San Diego, CA 92108-1633

Lab Number:	26673-7
Collected:	02/19/02
Received:	02/20/02
Matrix:	Aqueous

Project:	Sosan Davey Property
Project Number:	080T.04926.00.0010
Collected by:	Marcus Siefert

Sample Description:	MW-7
Analyzed:	02/26/02
Method:	See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		105
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.
Note: Analytical range is C4-C12.
Note: TPH quantitated against gasoline.
Note: Oxygenates not included in TPH result.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

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ZymaX envirotechnology

QUALITY ASSURANCE REPORT
BLANK RESULTS

Client: ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401	**Lab Number:** BLK VA70223 **Collected:** **Received:** **Matrix:** Aqueous
Project: **Project Number:** **Collected by:**	**Sample Description:** Instrument Blank **Analyzed:** 02/23/02 **Method:** See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		95
TOTAL PETROLEUM HYDROCARBONS		
Gasoline	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA70223
MSD #7
VA70223b.xls
DZ/jgt/pv/cc

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QS VA70223
Collected:
Received:
Matrix: Aqueous

Project:

Project Number:
Collected by:

Sample Description: Quality Assurance Spike
Analyzed: 02/23/02
Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery
Benzene	2.2	2.1	95
Toluene	26.5	25.7	97
Ethylbenzene	7.1	6.7	94
Xylenes	37.1	35.0	94
Methyl t-Butyl Ether (MTBE)	24.5	22.7	93
Percent Surrogate Recovery			101
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	500.	517.	103
BTX as a Percent of Fuel	13	12	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA70223
MSD #7
VA70223q.xls
DZ/jgt/pv/cc

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE DUPLICATE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QSD VA70223
Collected:
Received:
Matrix: Aqueous

Project:

Project Number:
Collected by:

Sample Description: Quality Assurance Spike Duplicate
Analyzed: 02/23/02
Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery	Relative Percent Difference*
Benzene	2.2	2.1	95	0
Toluene	26.5	25.9	98	1
Ethylbenzene	7.1	7.3	103	9
Xylenes	37.1	37.5	101	7
Methyl t-Butyl Ether (MTBE)	24.5	19.8	81	14
Percent Surrogate Recovery			100	
TOTAL PETROLEUM HYDROCARBONS				
Gasoline	500.	474.	95	9
BTX as a Percent of Fuel	13	14		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*Relative Percent Difference of the spike and spike duplicate

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA70223
MSD #7
VA70223q.xls
DZ/jgt/pv/cc

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
BLANK RESULTS

Client: ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401	Lab Number: BLK VA110225 Collected: Received: Matrix: Aqueous
Project: Project Number: Collected by:	Sample Description: Instrument Blank Analyzed: 02/25/02 Method: See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		105
TOTAL PETROLEUM HYDROCARBONS		
Gasoline	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110225
MSD #11
A110225b.xls
DZ/jgt/pv/lz

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QS VA110225
Collected:
Received:
Matrix: Aqueous

Project:

Project Number:
Collected by:

Sample Description: Quality Assurance Spike
Analyzed: 02/25/02
Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery
Benzene	3.0	2.6	87
Toluene	33.8	34.2	101
Ethylbenzene	9.0	8.9	99
Xylenes	46.7	48.7	104
Methyl t-Butyl Ether (MTBE)	34.7	40.0	115
Percent Surrogate Recovery			105
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	500.	545.	109
BTX as a Percent of Fuel	17	16	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110225
MSD #11
A110225q.xls
DZ/jgt/pv/lz

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE DUPLICATE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QSD VA110225
Collected:
Received:
Matrix: Aqueous

Project:
Project Number:
Collected by:

Sample Description: Quality Assurance Spike Duplicate
Analyzed: 2/25/02
Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery	Relative Percent Difference*
Benzene	3.0	2.8	93	7
Toluene	33.8	35.6	105	4
Ethylbenzene	9.0	9.4	104	5
Xylenes	46.7	50.6	108	4
Methyl t-Butyl Ether (MTBE)	34.7	40.6	117	1
Percent Surrogate Recovery			106	
TOTAL PETROLEUM HYDROCARBONS				
Gasoline	500.	570.	114	4
BTX as a Percent of Fuel	17	16		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*Relative Percent Difference of the spike and spike duplicate

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110225
MSD #11
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DZ/jgt/pv/lz

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
BLANK RESULTS

Client: ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401	Lab Number: BLK VA110226 Collected: Received: Matrix: Aqueous
Project: Project Number: Collected by:	Sample Description: Instrument Blank Analyzed: 02/26/02 Method: See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		105
TOTAL PETROLEUM HYDROCARBONS		
Gasoline	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*PQL - Practical Quantitation Limit
**Results listed as ND would have been reported if present at or above the listed PQL.

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110226
MSD #11
A110226b.xls
DZ/jgt/pv/lz

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QS VA110226
Collected:
Received:
Matrix: Aqueous

Project:

Project Number:
Collected by:

Sample Description: Quality Assurance Spike
Analyzed: 02/26/02
Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery
Benzene	3.0	2.6	87
Toluene	33.8	30.9	91
Ethylbenzene	9.0	8.6	96
Xylenes	46.7	45.3	97
Methyl t-Butyl Ether (MTBE)	34.7	36.5	105
Percent Surrogate Recovery			99
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	500.	515.	103
BTX as a Percent of Fuel	17	15	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

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MSD #11
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DZ/jgt/pv/lz

ZymaX envirotechnology

QUALITY ASSURANCE REPORT
SPIKE DUPLICATE RESULTS

Client:
ZymaX envirotechnology, inc.
71 Zaca Lane, Suite 110
San Luis Obispo, CA 93401

Lab Number: QSD VA110226
Collected:
Received:
Matrix: Aqueous

Project:

Project Number:
Collected by:

Sample Description: Quality Assurance Spike Duplicate
Analyzed: 02/26/02
Method: See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery	Relative Percent Difference*
Benzene	3.0	2.6	87	0
Toluene	33.8	33.3	99	7
Ethylbenzene	9.0	9.1	101	6
Xylenes	46.7	48.3	103	6
Methyl t-Butyl Ether (MTBE)	34.7	37.8	109	3
Percent Surrogate Recovery			100	
TOTAL PETROLEUM HYDROCARBONS				
Gasoline	500.	545.	109	6
BTX as a Percent of Fuel	17	15		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717
*Relative Percent Difference of the spike and spike duplicate

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,
ZymaX envirotechnology, inc.

Dwain Zsadanyi
Project Manager

VA110226
MSD #11
A110226q.xls
DZ/jgt/pv/lz

Chain-of Custody Number:

SECOR Chain-of Custody Record

Field Office: San Diego
Address: 2655 Camino Del Rio N #302
San Diego, CA 92108

☐ Additional documents are attached, and are a part of this Record.
Job Name: Sosan Davey Property
Location: 1279 & 1281 E. Main St.
El Cajon, CA

Project # 080T.04926.00 Task # 0010
Project Manager Brian Demme
Laboratory ZYMAX
Turnaround Time Normal

Sampler's Name Marcus Siefert
Sampler's Signature [signature]

Analysis Request

Sample ID	Date	Time	Matrix	HCID	TPHg/BTEX/WTPH-G 8015 (modified)/8020	TPHd/WTPH-D 8015 (modified)	TPH 418.1/WTPH 418.1	Aromatic Volatiles 602/8020	Volatile Organics 624/8240 (GC/MS)	Halogenated Volatiles 601/8010	Semi-volatile Organics 625/8270 (GC/MS)	Pesticides/PCBs 608/8080	Total Lead 7421	Priority Pollutant Metals (13)	TCLP Metals	TPHg, BTEX, MTBE #8260	DIPE, TAME, ETBE, TBA, #8260	Comments/ Instructions	Lab #	Number of Containers
MW-1	2/19/02	1140	H_2O													X	X		260073-1	5
MW-2	↓	1452	↓													↓	↓		-2	↓
MW-3	↓	1128	↓													↓	↓		-3	↓
MW-4	↓	1338	↓													↓	↓		-4	↓
MW-5	↓	1345	↓													↓	↓		-5	↓
MW-6	↓	1426	↓													↓	↓		-6	↓
MW-7	↓	1104	↓													↓	↓		-7	↓

Special Instructions/Comments:
Please Fax Results

Relinquished by: Sampler
Sign [signature]
Print Marcus Siefert
Company SECOR
Time 2:35 PM Date 2/20/02

Received by: [signature]
Sign [signature]
Print JIM WHITE
Company ZYMAX
Time 2:35 PM Date 2/20/02

Relinquished by:
Sign
Print
Company
Time Date

Received by:
Sign
Print
Company
Time Date

Sample Receipt
Total no. of containers: 21
Chain of custody seals:
Rec'd in good condition/cold:
Conforms to record:

Client:
Client Contact:
Client Phone:

SECOR CUSTREC Rev. 2/99

Date: 2/19/02 Page 1 of 1

APPENDIX I

REMEDIATION ALTERNATIVES COST ESTIMATE SPREADSHEETS

Cost Estimate for Alternative 1 - Limited Soil Excavation
Susan Davey Property

rofessional Fees:	
ssociate	(2 hrs @ $100.00/hr = $200.00)
Project	(8 hrs @ $90.00/hr = $720.00)
Staff	(12 hrs @ $78.00/hr = $936.00)
echnician	(25 hrs @ $55.00/hr @ 1 Technician = $1,375.00)
otal Professional Fees	**$3,231.00**
SECOR Fees:	
lileage	(60 Miles @ $0.50/Mile = $30.00)
quipment and Supplies	(2 each @ $300.00/EA = $600.00)
Total SECOR Fees	**$630.00**
ubcontractor Fees	
xcavation Contractor (removal/backfill)	(2,975 tons @ $25.00/ton = $74,375.00)(notes #1and 2)
Excavation Transportation and Disposal	(2,975 tons @ $50.00/ton = $148,750.00)(notes #1and 2)
xcavation Soil Sample Analysis	(7 Samples @ $155.00/sample = $1,085.00)
Vaste Profiling Sample Analysis (Stockpile)	(15 Samples @ $155.00/sample = $2,325.00)
.5% Mark-Up	**$33,980.25**
Total Subcontractor Fees	**$260,515.25**
eporting Fees:	
One remedial excavation report	$2,500.00 lump sum
Total Reporting Fees	**$2,500.00**
otal Cost	**$266,876.25**

NOTES:

) Perform limited excavation of on-site soil with TPH concentrations of 500 mg/kg and greater. Followed by unmonitored RNA.
) Estimation based on 1,750 cubic yards, and approimate soil density of 1.70 tons per cubic yard. Therefore, there is approximately 2,975 tons of soil in need of removal and disposal.

Cost Estimate for Well Destruction Activities - Wells MW-1 through MW-7
Susan Davey Property

Professional Fees:	
Associate	(6 hrs @ $100.00/hr = $600.00)
Project	(10 hrs @ $90.00/hr = $900.00)
Staff	(15 hrs @ $78.00/hr = $1,170.00)
Technician	(30 hrs @ $55.00/hr @ 1 Technician = $1,650.00)
Assistant	(10 hrs @ $66.00/hr = $660.00)
Total Professional Fees	**$4,980.00**
SECOR Fees:	
Mileage	(60 Miles @ $0.50/Mile = $30.00)
Equipment and Supplies	(3 each @ $400.00/EA = $1,200.00)
Total SECOR Fees	**$1,230.00**
Subcontractor Fees	
Well Destruction (drilling)	(140 LF @ $35.00/LF = $4,900.00)
Waste Drums	(15 Drums @ $35.00/drum = $525.00)
Waste Drum Disposal	(15 Drums @ $100.00/drum = $1,500.00)
Disposal of Misc. Well Debris	$500.00 lump sum
Asphalt Patch	(7 patches @ $100.00/patch = $1,700.00)
Waste Profiling Sample Analysis	(7 Samples @ $155.00/sample = $1,085.00)
Traffic Control Plan/Equipment	$1,500.00 lump sum
15% Mark-Up	**$1,606.50**
Total Subcontractor Fees	**$12,316.50**
Reporting Fees:	
Well Destruction Report	$750.00 lump sum
Total Reporting Fees	**$750.00**
Sub Total Cost	**$19,276.50**

NOTES:

1) Perform well destruction activities for 7 wells at approximately 20 linear feet per well (e.g., 140 LF total). Work is scheduled to take 3 days.