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ETIC ENGINEERING

DUAL PHASE EXTRACTION PILOT TEST REPORT AND INTERIM REMEDIAL ACTION PLAN

STROUGH FAMILY TRUST OF 1983
FORMER VAL STROUGH CHEVROLET
327 34th STREET
OAKLAND, CALIFORNIA

Prepared For:

Mr. Don Strough
Strough Family Trust of 1983
PO Box 489
Orinda, California 94563

Prepared By:

ETIC Engineering, Inc.
1333 Broadway, Suite 1015
Oakland, California 94612

June 25, 2004

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Senior Engineer

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SITE CONTACTS

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1 INTRODUCTION

On behalf of Strough Family Trust of 1983 (Strough), ETIC Engineering, Inc. (ETIC) has prepared this *Dual Phase Extraction (DPE) Pilot Test Report and Interim Remedial Action Plan* (DPE Report and IRAP) for the former Val Strough Chevrolet site, located at 327 34th Street in Oakland, California (see Figure 1). Based on previous work at the site, elevated hydrocarbon concentrations in soil and groundwater and separate-phase hydrocarbons in wells have been reported in a localized area near the former gasoline and used oil underground storage tanks and associated fuel dispenser, herein refered to as the source area. Groundwater monitoring indicates that removal of the underground storage tanks (the primary sources) and natural attenuation have resulted in a generally stable hydrocarbon plume in groundwater, with limited migration away from the source area.

In a 15 July 2003 letter, the Alameda County Health Care Services Agency (ACHCSA) requested a proposal for reduction of hydrocarbons in the source area, among other items. The other items were previously addressed, while this document addresses the request related to source area reduction. Our February 2004 *Supplemental Site Investigation Report and Dual-Phase Extraction Pilot Test Workplan*[1], in part, described procedures for pilot testing high vacuum DPE as a technology for source area reduction. In our 22 April 2004 letter[2], we summarized the preliminary findings of the DPE pilot test, which was conducted in late March 2004.

The objective of site remediation is to cost-effectively reduce hydrocarbon concentrations so that the site can receive regulatory closure. Based on the removal of the primary sources and generally stable hydrocarbon plume, this objective is considered achievable through short-term, interim active remediation with post-remediation monitoring to confirm natural attenuation.

This DPE Report and IRAP presents the results of a high vacuum DPE pilot test and describes the anticipated interim remedial action activities using DPE for source area reduction. These interim remedial activities focus on reducing source area concentrations to the point where natural attenuation can further reduce site concentrations in a reasonable timeframe. Based on the limited source area, the effective hydrocarbon mass removal rate, and radius of vacuum influence indicated by the DPE pilot test, full-scale remediation system installation is not warranted. Alternately, it is anticipated that temporary, intermittent DPE operation will remove sufficient hydrocarbon mass to meet the above objective within 3-6 months.

To minimize impacts to site business activities and limit total project-related costs, interim remediation system installation activities will be coordinated with the site renovation activities planned for the summer of 2004. In the event that site renovation activities are delayed or cancelled, the active remediation scope of work described in this IRAP will be reevaluated. Notwithstanding this, timely approval of this DPE Report and IRAP is requested. The following presents the site background, DPE pilot test, planned activities (interim remedial actions and groundwater monitoring), and schedule.

[1] ETIC. 2004. Supplemental Site Investigations Report and Dual-Phase Extraction Pilot Test Workplan, Val Strough Chevrolet, 327 34th Street, Oakland, California. February.
[2] ETIC. 2004. Preliminary High Vacuum Dual Phase Extraction Pilot Test Summary, Former Val Strough Chevrolet, 327 34th Street, Oakland, California. April 22.

2 SITE BACKGROUND

2.1 Site Description

Site Location and Land Use: The former Val Strough Chevrolet is an automobile dealership and service center located on the southwest corner of the intersection of Broadway (Auto Row) and 34th Street (see Figure 1). The property is located south of Interstate 580. Land use in the area is primarily commercial.

The site is located at an elevation of approximately 61 feet above mean sea level (Environmental Data Resources, Inc. [EDR], 2003)[3], and topography slopes slightly toward the south. The site is located approximately 2 miles east of the San Francisco Bay. The nearest surface water body is Lake Merritt, which is located approximately 1 mile south of the site (see Figure 1).

Site Features: The site consists of a multi-story building with adjacent parking lot (see Figure 2). The former underground storage tanks (USTs) and fuel dispenser were located near the northwestern portion of the site. Seven monitoring wells and several soil borings are located at the site. Well construction details for the site wells are presented in Table 1.

Underground Utilities: A box culvert for a former tributary of Glen Echo Creek that drains to Lake Merritt is located beneath the parking lot near Broadway (see Figure 2). The box culvert consists of a reinforced concrete box measuring 5 feet by 6 feet. The depth of the top of the culvert is approximately 17 feet below ground surface (bgs). During the winter of 1983, a section of the culvert caved-in and was replaced with a 5-foot-diameter pipe. A storm drain flows to the east along the northern border of 34th Street, approximately 40 feet north of the site, and is diverted into the box culvert.

A sanitary sewer lateral from the site connects to a sanitary sewer line running beneath 34th Street approximately 40 feet north of the site. This sanitary sewer line connects to a main line which runs along Broadway.

The natural gas service is located on the east side of the property. The water service appears to enter the site from the north.

Water Supply Well Search: The EDR Report (2003) indicated that there are no federal US Geological Survey wells and no public water supply wells located within a 1-mile radius of the site. No water supply wells were identified by the Alameda County Department of Public Works within a ½-mile radius of the site.

[3] Environmental Data Resources. 2003. EDR Radius Map with GeoCheck, Strough Family Trust, 327 34th Street, Oakland, California. September 10.

2.2 Summary of Previous Investigation and Monitoring Activities

As presented in previous site reports, the USTs were removed and multiple investigations, including installation of seven monitoring wells, were conducted. In addition, a routine groundwater monitoring program has been in-place since 1993. The following summarizes the findings of these activities.

Site Hydrogeology: The hydrogeology of the site is derived from data collected during previous investigations. In general, the site is underlain by silt and clay to depths ranging from 15 to 20 feet bgs. Silty sand and fine-grained sand mixed with thin clay intervals are encountered from approximately 20 feet bgs to the total explored depth of 35 feet bgs. Figures 3 and 4 are schematic cross-sections showing the generalized geology beneath the site.

In March 2004, groundwater was measured in site wells at an average depth of 18 feet bgs. Figure 5 shows a modified rose diagram with cumulative generalized flow directions and hydraulic gradients for shallow groundwater beneath the site. As shown in the modified rose diagram, the prevailing groundwater flow direction has been toward the southwest, with an average hydraulic gradient of approximately 0.03 to 0.02 foot/foot. The modified rose diagram was prepared using groundwater monitoring data from July 1993 through March 2004. Figure 5 also shows the groundwater elevation contours based on the depth to water measurements collected in March 2004. It should be noted that groundwater do not appear to be significantly influenced by underground utilities, including the box culvert.

Primary Sources: Two USTs (one gasoline and one used oil) were located beneath the sidewalk along 34th Street on the north side of the property. A fuel dispenser was located inside the building (see Figure 2). These primary sources of hydrocarbons were removed from the site in 1993.

Constituents of Potential Concern: Based on the material stored in the USTs and the results of previous subsurface investigations at the site, the constituents of potential concern (COPCs) at the site include total petroleum hydrocarbons (TPH) as gasoline (TPH-g); benzene, toluene, ethylbenzene, and total xylenes (BTEX); and methyl tertiary butyl ether (MTBE). TPH as diesel (TPH-d) and TPH as motor oil (TPH-mo) are not routinely reported in groundwater samples and are considered secondary COPCs for the site.

Separate Phase Hydrocarbon Distribution: Separate phase hydrocarbons (SPHs) have been intermittently observed in wells MW2 and MW3, which are located near the former USTs and fuel dispenser and within the source area. SPH appears to act as a secondary source of hydrocarbons in groundwater beneath the site.

Hydrocarbon Distribution in Soil: Based on soil analytical data, elevated concentrations of TPH-g, BTEX, and MTBE are limited to the vadose and capillary fringe soils adjacent to the former UST fuel dispenser, near monitoring well MW2 (see Table 2 and Figures 3 and 4). More than 1,000 milligrams per kilogram (mg/kg) TPH-g appears to extend to soils around well MW3, which is consistent with the distribution of SPH described above.

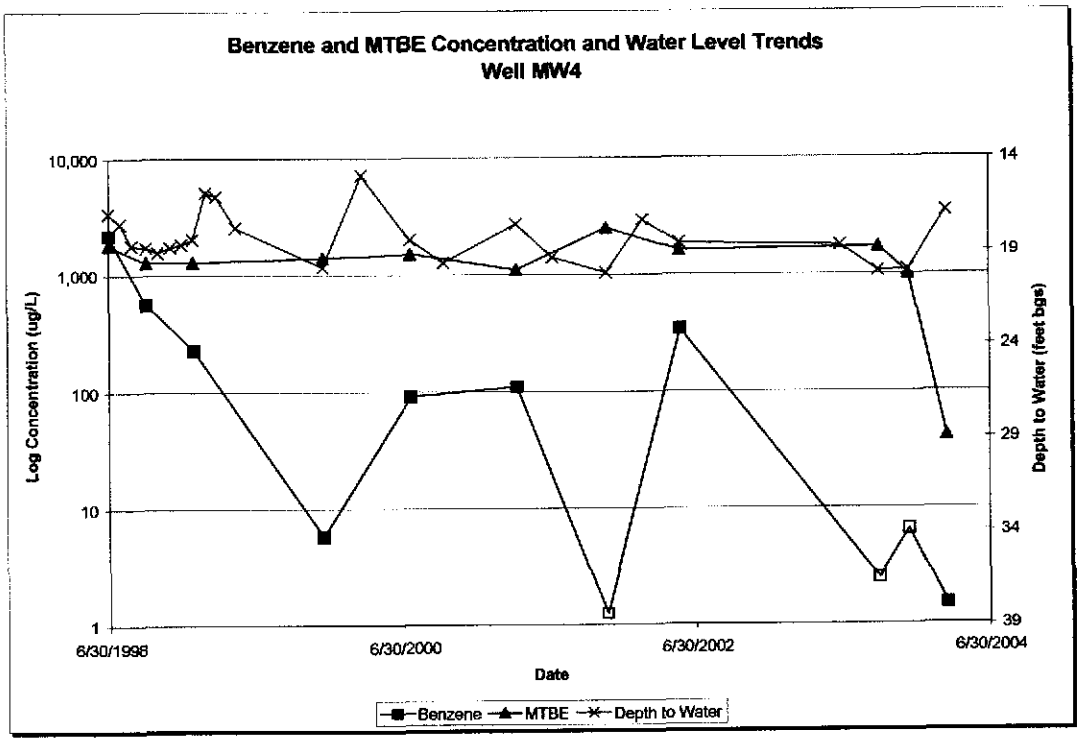
In general, the highest detected concentrations of TPH-g and BTEX were encountered in the coarse-grained soils of the capillary fringe (approximately 20 feet bgs). Elevated TPH-g and BTEX concentrations are locally present in saturated soils (e.g. boring SB1 at 25 feet bgs). No TPH-g, BTEX and MTBE were reported in soil samples collected below 25 feet bgs (see Appendix A).

Hydrocarbon Distribution in Groundwater: The hydrocarbon mass in groundwater within the source area is defined by wells MW2, MW3 and MW4. The SPH is observed only in monitoring wells MW2 and MW3. Nearby monitoring wells MW1 (approximately 50 feet east of MW2 and 50 feet northeast of MW3) and MW4 (approximately 50 feet southeast of MW3) have not reported measurable SPH (see Table 3). Due to the continued presence of SPH over the past two years, groundwater has not been sampled in source area wells MW2 and MW3 during recent quarterly monitoring activities. The most recent samples from these wells (approximately two years ago) contained TPH-g concentrations on the order of 90,000 to 150,000 µg/L.

The extent of dissolved hydrocarbons in groundwater is defined by downgradient and crossgradient monitoring wells MW5, MW6 and MW7, and recent grab groundwater samples from borings HP1 and HP3 (see Figure 6). The highest concentrations of dissolved constituents are typically reported in well MW4 (TPH-g concentration limited to 54 µg/L during March 2004 monitoring event-see Table 3), but remain at relatively low and stable levels away from the source area. The groundwater data collected from wells MW5, MW6, and MW7 show little variation in the concentrations of TPH-g, BTEX, and MTBE over the last two years of groundwater monitoring (see Table 2). The groundwater analytical data collected from boring HP1 (downgradient of MW6) yielded concentrations that were consistent with those observed in well MW6. The groundwater analytical data collected from boring HP3 indicate that hydrocarbons have not migrated laterally to that location (See Figure 6). These data suggest that hydrocarbons in groundwater are largely limited to the property boundaries, that the plume is stable and the plume has limited potential for offsite migration.

Natural Attenuation: Natural attenuation is the reduction in concentration, mass, toxicity or mobility of COPCs via dispersion, sorption, dilution, volatilization, and perhaps most significantly, biodegradation. Decreasing concentration trends are a primary indicator of on-going natural attenuation. Secondary indicators of hydrocarbon biodegradation include depletion of dissolved oxygen (DO), nitrate and sulfate, reduced oxidation/reduction potential, and enriched ferrous iron, relative to background. These bioparameters also indicate aerobic or anaerobic conditions of the water-bearing zone.

As shown below on the graph for well MW4, groundwater analytical data indicate variable but a generally declining benzene concentration trend, and a stable to recently declining MTBE concentration trend. Absent remediation activities, the observed trend is due to natural attention.



Further supporting the occurrence of natural attenuation are bioparameters for wells MW1, MW2, MW3, MW4 and MW6 located in and near the source area. Specifically, these data indicate depleted levels of DO, sulfate, and nitrate concentrations along with enriched ferrous iron concentrations, representing the presence of anaerobic conditions (see Table 3). Alternately, bioparameters for wells MW5 and MW7 indicate the presence of aerobic conditions. The pattern of bioparameters indicate that while anaerobic conditions prevail near the source area where higher hydrocarbon concentrations exist, aerobic conditions exist in the perimeter wells located near or beyond the extent of the dissolved phase hydrocarbon plume. Hence, interim active remediation is considered key to timely reduction of hydrocarbons in the source area, while natural attenuation is considered the appropriate mechanism for maintaining low hydrocarbon levels and plume stability downgradient of the source area.

3 DUAL-PHASE EXTRACTION (DPE) PILOT TEST

3.1 DPE Pilot Test Procedures

A DPE pilot test was conducted to evaluate the reduction of hydrocarbon mass in the source area and to evaluate the applicability and effectiveness of DPE for source area remediation at the site. DPE is the process of applying high vacuum (up to 29 inches of mercury [in. Hg]) to an extraction "stinger" installed through an airtight wellseal to simultaneously extract soil vapor and groundwater from a well. The influence of DPE spreads through the subsurface as a combination of groundwater drawdown and changes in absolute pressure. Groundwater drawdown and absolute pressure are interrelated; for example, an increase in vacuum causes water levels to rise and groundwater drawdown tends to decrease the absolute pressure in a observation well with submerged well screens. This relationship is affected by a number of aspects of well construction and the subsurface, including permeability of the soil to vapor and water, lithology, and groundwater level.

DPE Pilot Test: On 30 and 31 March 2004, ETIC performed a 15-hour DPE pilot test. Wells MW2 and MW3 were used as extraction wells while surrounding wells MW1, MW4 and MW5 were used as observation wells. Wells MW2 and MW3 were tested individually and in combination. The pilot test was conducted on well MW2 for 2 hours 50 minutes, well MW3 for 2 hours 15 minutes, and both wells (MW2 and MW3) for 9 hours 50 minutes. It should be noted that no measurable SPH was observed in wells MW2 and MW3 immediately prior to, during, or immediately after the DPE pilot test.

During the individual well step tests, the stinger was placed at an initial depth of approximately 19 feet below the top of casing (feet BTOC) for extraction well MW2 and at 22 feet BTOC for extraction well MW3. After the initial placement, the stinger was gradually lowered in each extraction well as part of a step test. The purpose of the step tests was to estimate the applied vacuum and stinger depth that would produce maximum flow and maximum vapor concentrations, and also to determine the required minimum vacuum to extract groundwater from the well at a given depth of stinger.

During the combined test, the stingers were initially placed at 25 feet BTOC in extraction well MW2 and at 21 feet BTOC in extraction well MW3. The stingers were not lowered during the combined pilot test as the system was not able to extract groundwater from greater depths.

DPE Equipment: A mobile DPE unit provided the vacuum source and vapor treatment. The DPE unit consisted of an oil-sealed liquid ring vacuum pump capable of generating vacuum up to 29 inches of mercury column (in. Hg) and a maximum vapor flow rate of 300 actual cubic feet per minute (acfm). Extracted fluids passed through a 150-gallon knockout vessel, which separated vapor and liquid streams.

Monitoring Activities: Prior to pilot testing, modified well seals were installed on the extraction wells to allow for wellhead vacuum measurements. Well caps were installed on observation wells to allow simultaneous measurement of water levels and wellhead vacuum. Applied vacuum and vapor flowrates were measured at the DPE unit. In addition, a photoionization detector (PID) was used to monitor total volatile organics in the vaporstream. Distances between the extraction wells and the observation wells were also measured. Field data for the DPE test are summarized in Table 4 and presented in Appendix A.

Vapor and Water Treatment and Discharge: The extracted vapor stream was treated using a thermal oxidizer and was discharged to the atmosphere in accordance with Bay Area Air Quality Management District (BAAQMD) guidelines. The extracted liquid stream was passed through two 200-pound liquid phase granular activated carbon vessels connected in series and pumped into a storage tank. The treated groundwater was discharged to an onsite sanitary sewer under a special discharge permit issued by the East Bay Municipal Utility District (EBMUD).

Vapor and Water Analyses: During the combined well DPE pilot test, three extracted vapor samples were collected in Tedlar bags using a vacuum pump and analyzed for TPH-g, BTEX and MTBE (see Table 5). Groundwater samples collected from well MW2, MW3 and the knockout tank at the end of the DPE pilot test were analyzed for TPH-g, TPH-d, TPH-mo, BTEX and MTBE. In addition, samples of treated water collected from the storage tank were also analyzed to comply with the EBMUD discharge permit. Laboratory analytical reports are included in Appendix B.

3.2 DPE Pilot Test Results and Analysis

Applied Vacuum: During the DPE pilot test, the applied vacuum at the system ranged from 17.5 to 20 in. Hg while the vacuum observed at the respective wellheads ranged from 1 to 6 in. Hg (see Table 4). The vacuum losses from the system to the wellheads are most likely due to the vacuum required to pull water to the surface, move the extracted groundwater through the hose, and piping friction losses.

Groundwater Extraction Rates: The total volume of groundwater extracted during the DPE pilot test was 6,658 gallons. The average groundwater extraction rates were estimated by observing the volume of groundwater extracted during each step and combined well test. The estimated average groundwater extraction rates were 3.8 gallons per minute (gpm) for well MW2 individual step test, 6.5 gpm for well MW3 individual step test, and 8.7 gpm for the combined well test.

Vapor Flowrates: The vapor flowrates during the DPE pilot test were measured at the outlet of the vacuum pump. Using this method, the average well flowrates ranged from 137 standard cubic feet per minute (scfm) to 147 scfm.

Water Level Drawdown: As summarized below on Table A, the maximum drawdown observed in monitoring wells was more than 1 foot at distances of more than 50 feet from the extraction well during the combined DPE pilot test (see Table 4 and Appendix A).

Table A: Maximum Drawdown Values

Monitoring Well	Maximum Drawdown (feet)	Distance to Nearest Extraction Well (feet)	Nearest Extraction Well
MW1	1.54	52	MW3
MW3	0.76	27	MW2
MW4	1.22	54	MW3

Extracted Vapor Concentrations: During the individual well tests, PID readings for the influent vaporstream were up to 2,540 parts per million by volume (ppmv) in well MW2 and 1,590 ppmv in well MW3. During the combined well test, total volatile organics in the vaporstream were greater than 4,000 ppmv, the upper measuring range of the PID.

As summarized below on Table B, TPH-g concentrations in extracted vapors during the combined well test averaged 6,800 µg/L. Laboratory analytical results for the vapor samples are summarized on Table 5 and presented in Appendix B.

Table B: Soil-Vapor Analytical Results

Sample ID	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
Comb wells-1	7,200	110	360	43	220	14
Comb wells-2	6,400	98	340	45	240	12
Effluent	<50	<1.0	<1.0	<1.0	<1.0	<0.50

Hydrocarbon Concentrations in Groundwater: No measurable SPH was observed prior to, during or following the DPE pilot test. As summarized below on Table C, pre-test (due to SPH presence, samples from wells MW2 and MW3 were last analyzed in May 2002) and post-test analyses indicate that hydrocarbon concentrations decreased by approximately one order-of-magnitude.

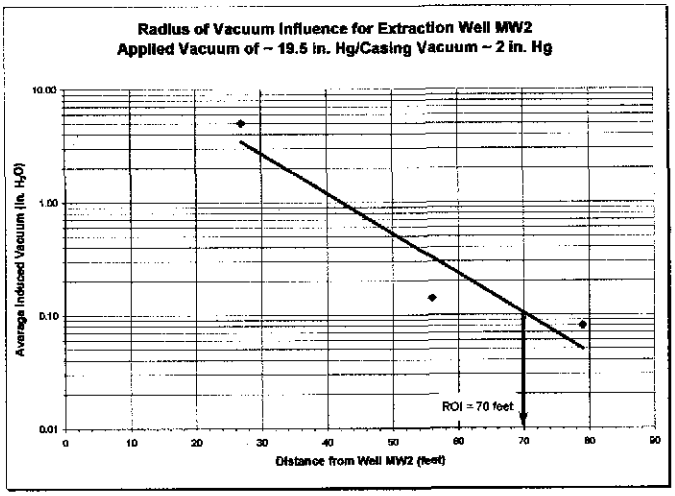
Table C: Groundwater Analytical Results

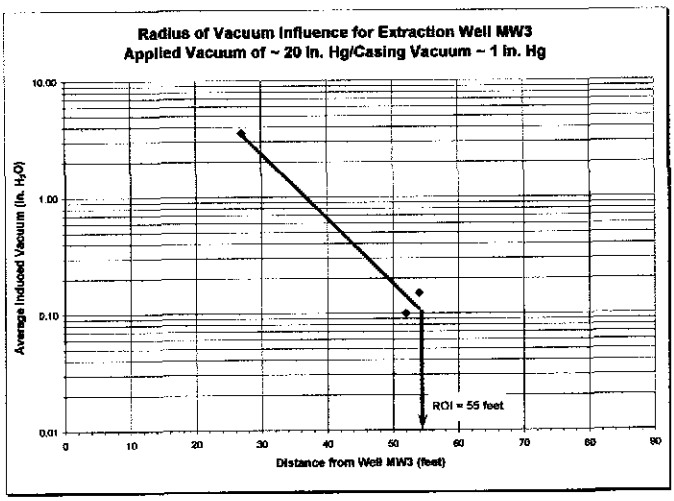
Sample ID	Date	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)
Pre-test MW2	5/21/02	150,000	8,600	25,000	3,500	26,000	4,800
Post-test MW2	3/31/04	49,000	1,700	9,300	1,700	16,000	630
Pre-test MW3	5/21/02	91,000	6,500	17,000	2,200	12,700	2,200
Post-test MW3	3/31/04	10,000	880	2,100	470	2,800	150

Hydrocarbon Mass Removal: Approximately 37 pounds and 1.6 pounds of hydrocarbons were estimated to be removed in the vapor and dissolved phases, respectively, during the combined well DPE pilot test (see Table 7) over a period of less than 10 hours. The hydrocarbon mass removal estimate in vapor and liquid phase was calculated based on the flowrates during DPE and the hydrocarbon vapor concentrations as reported by the laboratory.

Radii of Vacuum Influence: For each extraction well, a radius of vacuum influence was estimated from the average induced vacuum measurements at the observation wells during the individual well pilot tests. Semi-log plots of average induced vacuum versus distance of the observation well from the extraction well were prepared and a line to best-fit to the data was drawn (see graph below). Using this best-fit line, the radius of vacuum influence for each vapor extraction well was then estimated to be the distance corresponding to an average induced vacuum of 0.10 inches of water column (in. H_2O). Based on this method, the radius of vacuum influence was approximately 70 feet for well MW2 and 55 feet for well MW3.

These estimated radii of vacuum influence for wells MW2 and MW3 cover the source area as defined by the 1,000 mg/kg TPH-g in soil (see Figure 7).





Based on the above analysis of the high vacuum DPE pilot test, this methodology is considered appropriate as an interim remedial actions to effectively and efficiently reduce subsurface hydrocarbon levels so that the residual levels present following interim remediation may further decline due to natural attenuation. It is worth noting that this methodology will further induce an increase in DO levels within the source area, thereby increasing the potential for on-going natural attenuation under aerobic conditions following the interim remedial action.

4 PLANNED ACTIVITIES

4.1 DPE Interim Remedial Action

As mentioned previously, the extent of elevated hydrocarbon concentrations and SPH at the site is limited to the source area, with little migration of hydrocarbons away from the source area within the property boundaries. The DPE pilot test results indicate successful hydrocarbon removal and vacuum influence across the source area, as defined by the extent of 1,000 mg/kg TPH-g in soil.

Based on these conditions, it is anticipated that 3-6 months of intermittent high vacuum DPE operation will remove sufficient hydrocarbon mass from the source area to warrant cessation of interim active remediation. No full-scale remediation system installation is planned.

Preliminary Interim Remediation System Design: Based on the preliminary design, the interim remediation system will consist of a mobile DPE unit (e.g. liquid ring pump, knock-out tank and thermal/catalytic oxidizer) similar to that used during the pilot test. A treatment compound will be installed adjacent to the site building in the parking lot in the western portion of the site (see Figure 7). The DPE unit will be connected to wells MW2 and MW3 via aboveground piping outside the building and underground piping inside the building. A 499-gallon propane tank will supply supplemental fuel for the thermal oxidizer. Extracted water will be treated using two liquid phase granular activated carbon vessels connected in series (see Figure 8). Discharge piping will connect the carbon vessels to the sanitary sewer.

Permitting: A building permit for the installation of the temporary DPE remediation system and propane tank will be acquired from the City of Oakland. Extracted groundwater will be treated using granular activated carbon, and discharged to the sanitary sewer under a discharge permit issued by the EBMUD. Extracted soil vapors will be treated by a thermal/catalytic oxidizer, under a BAAQMD various locations permit to operate.

Site Health and Safety Plan: The comprehensive site health and safety plan will be updated for the construction and interim remediation activities. The site health and safety plan will be kept onsite during field activities and signed by each site worker.

Interim Remediation System Installation: Following building permit acquisition, shallow trenches will be excavated inside the building and the extraction and discharge piping will be installed. To facilitate piping connections and well access, larger vault boxes will be installed on wells MW2 and MW3. Modified wellseals and dedicated DPE stingers will be installed in these wells. Aboveground piping to the treatment compound will be attached to the building.

Two carbon vessels will be connected in series for water treatment. Sample taps will be installed prior to and after each vessel to allow monitoring for carbon breakthrough. A water flowmeter is planned for after the second carbon vessel to measure the volume of water discharged to the sanitary sewer.

A temporary electrical service pedestal will be installed near the treatment compound. Electrical conduit will connect to the mobile DPE unit control panel. The propane tank will be connected to the thermal oxidizer to provide supplemental fuel. The treatment compound will be enclosed in chain-link fencing to limit access to the remediation equipment.

Actual system design and construction will depend on permit conditions. If warranted, the system will be modified to optimize operational efficiency.

Interim Remediation System Monitoring: During system operation, various parameters will be monitored to evaluate and help optimize system operation and comply with water discharge and air discharge permit conditions. During weekly site visits, it is anticipated that the monitored operational parameters will include applied vacuum and flowrates at the system, applied vacuum and stinger depths at the extraction wells, and induced vacuum and water levels at selected observation wells.

Extracted water entering and exiting the carbon vessels will be analyzed to comply with EBMUD permit conditions. In addition, extracted vapors entering and exiting the thermal oxidizer will be monitored using a PID. Vapor samples will be collected to confirm PID readings and comply will BAAQMD guidelines. The parameter-specific analyses and monitoring interval will depend on final system design and permit conditions.

Interim Remediation System Operation: It is anticipated that the system will be intermittently operated. Continued operation will depend on the apparent effectiveness as indicated by monitoring results. For example, the system may operate until carbon breakthrough is reached, then the extraction wells may be allowed to equilibrate for several weeks prior to sampling. If elevated hydrocarbon concentrations are present, the carbon will be replaced and the system will be restarted. If residual hydrocarbons are reported in the well samples or asymptotic levels are reached in vapor, DPE will cease. As previously indicated, it is anticipated that natural attenuation will reduce the residual hydrocarbon concentrations in groundwater following interim remedial activities.

4.2 Additional Investigation

Boring HP2, where attempts to collect a water sample were not successful, was located inside the building near the southern property line (see Figure 7). In ETIC's February 2004 document, resampling at this location was recommended. However, access to this location will be largely limited following site renovations. Moreover, based on the unsuccessful sampling attempt (absence of water in the boring), the proposed interim DPE activities, and the limited extent of hydrocarbons beneath and away from the source area, this sampling may not be warranted. The need to resample groundwater at this location will be revisited following the interim remedial action activities.

4.3 Groundwater Monitoring

Quarterly monitoring of site wells will continue during the interim remedial action activities. Pre-purge DO will be measured from the site wells. As mentioned in the *Supplemental Site Investigation Workplan*[4], the groundwater monitoring frequency for the site wells will be reviewed during the third quarter 2004.

4.4 Reporting

Quarterly reports will be prepared to present the groundwater monitoring results and briefly summarize interim remedial actions. In addition, reports will be submitted to applicable agencies to comply with discharge permit requirements.

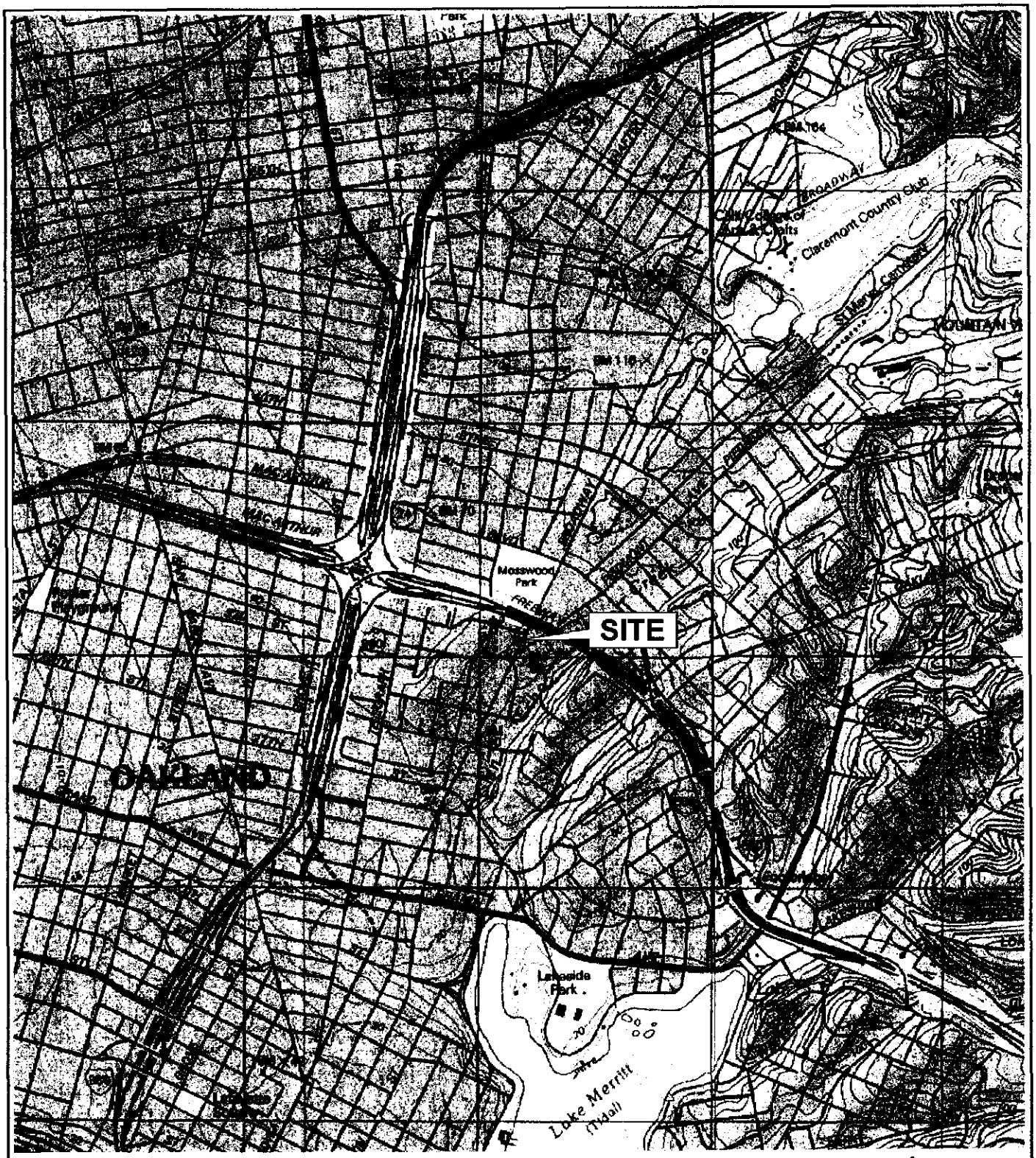
[4] ETIC. 2003. Supplemental Site Investigation Workplan, Val Strough Chevrolet, 327 34th Street, Oakland, California. September 17.

5 SCHEDULE

As mentioned previously, site renovation activities are anticipated to take place during the summer of 2004. To minimize impacts to future business activities (and reduce total project-related costs), ETIC plans to coordinate interim remediation system installation activities with these site renovation activities. In the unlikely event that site renovation activities are delayed or cancelled, the scope of work presented herein will be reevaluated to ensure cost-effectiveness.

Notwithstanding this, City of Oakland building permit and EBMUD discharge permit applications are in preparation. A various locations permit to operate has been acquired from BAAQMD for ETIC's mobile DPE unit. Timely approval of this DPE Report and IRAP is requested to facilitate reimbursement of project costs from the UST Fund.

Figures



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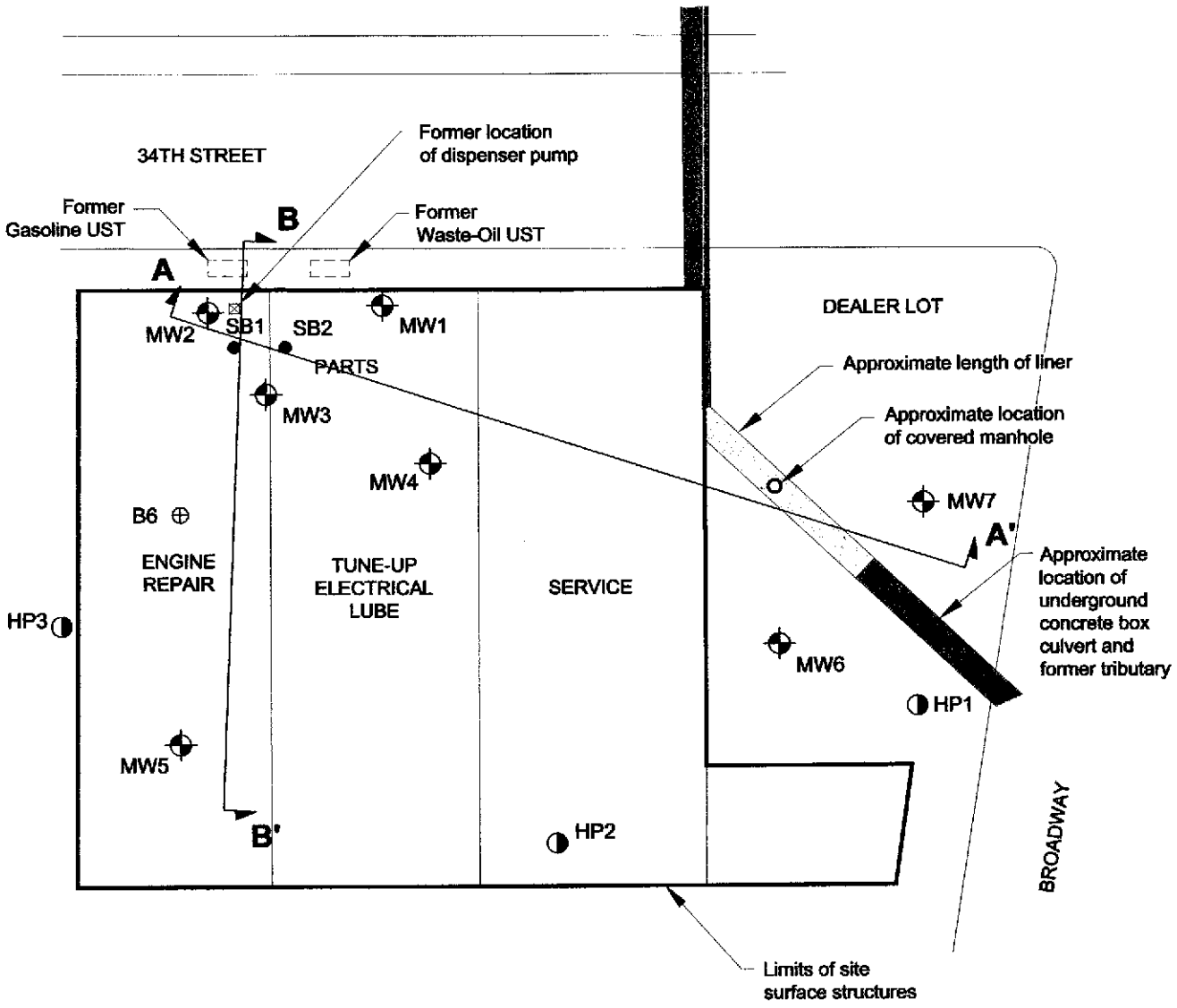
SITE VICINITY MAP
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE: 1

FILENAME: SITEPLAN0604.DWG 06/15/04



LEGEND:

- Groundwater monitoring well
- Boring location
- Soil boring
- Hydropunch
- Culvert liner
- Underground concrete box culvert
- Line of geologic cross section

N

0 25 50

Scale (feet)

FILENAME: SITEPLAN0604.DWG 06/2/04

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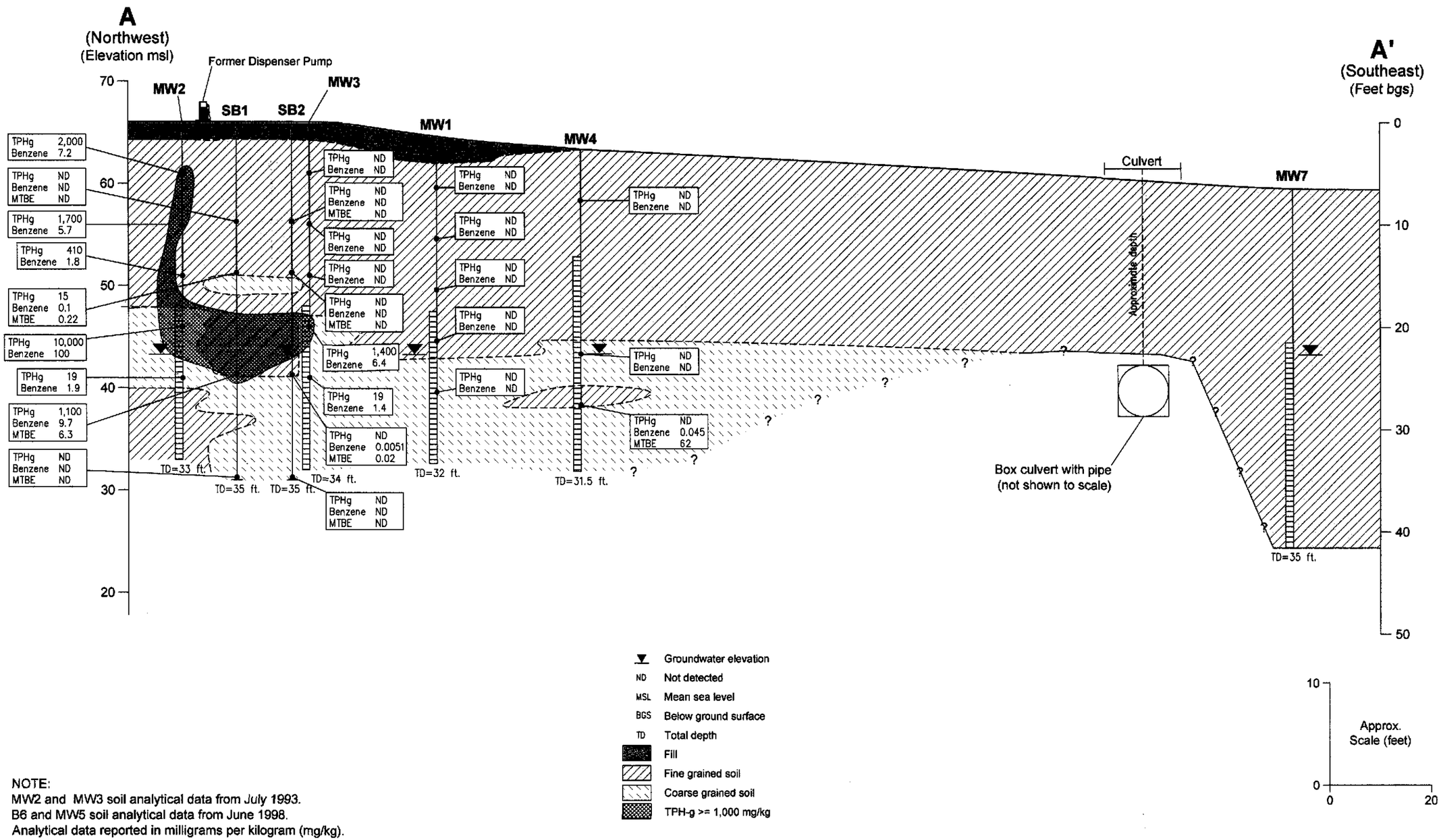
SITE PLAN
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE: **2**



NOTE:
MW2 and MW3 soil analytical data from July 1993.
B6 and MW5 soil analytical data from June 1998.
Analytical data reported in milligrams per kilogram (mg/kg).

FILENAME: GROSS-SECTIONS0604.DWG 06/21/04

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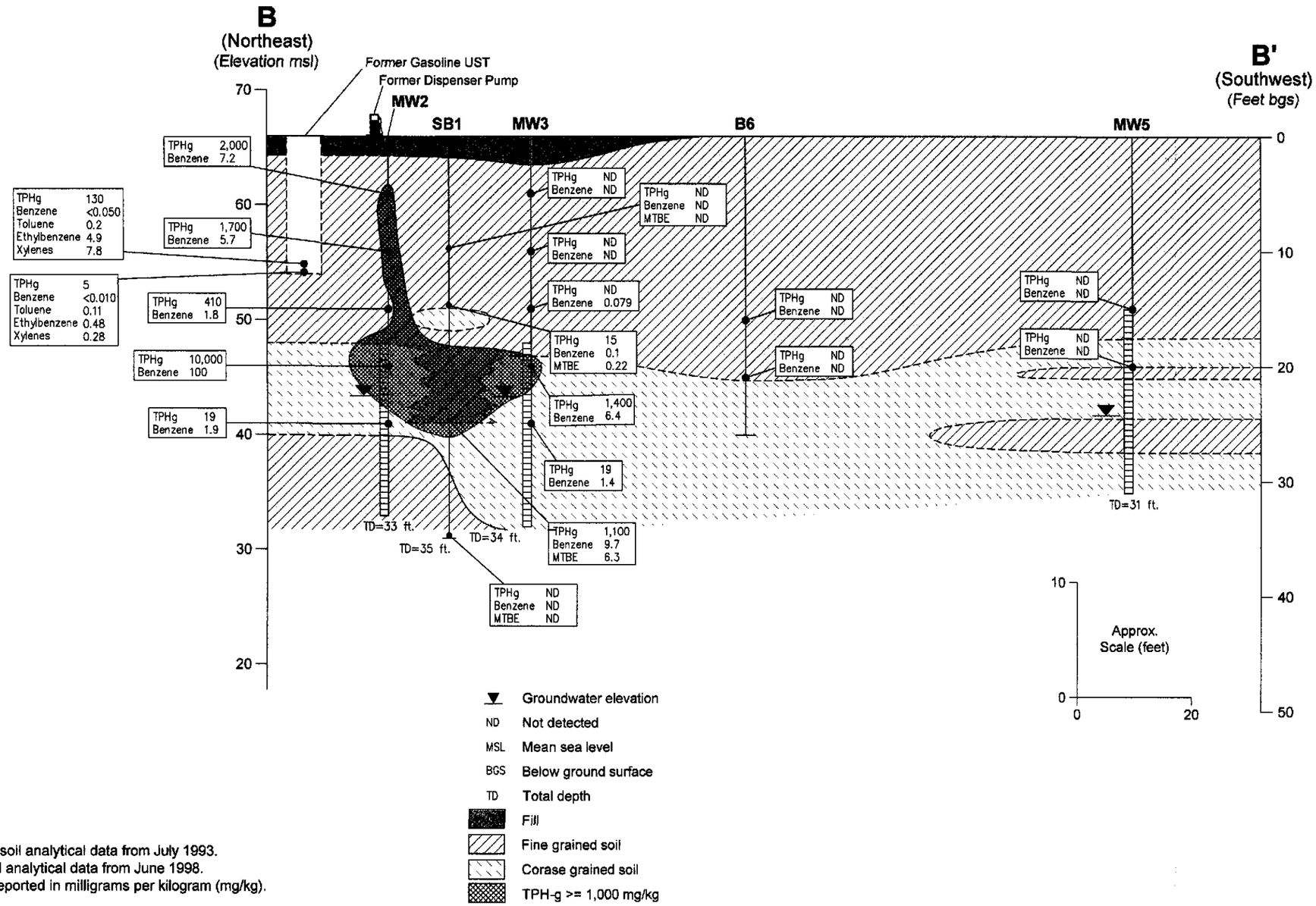
SCHEMATIC GEOLOGIC CROSS-SECTION A-A'
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE: 3



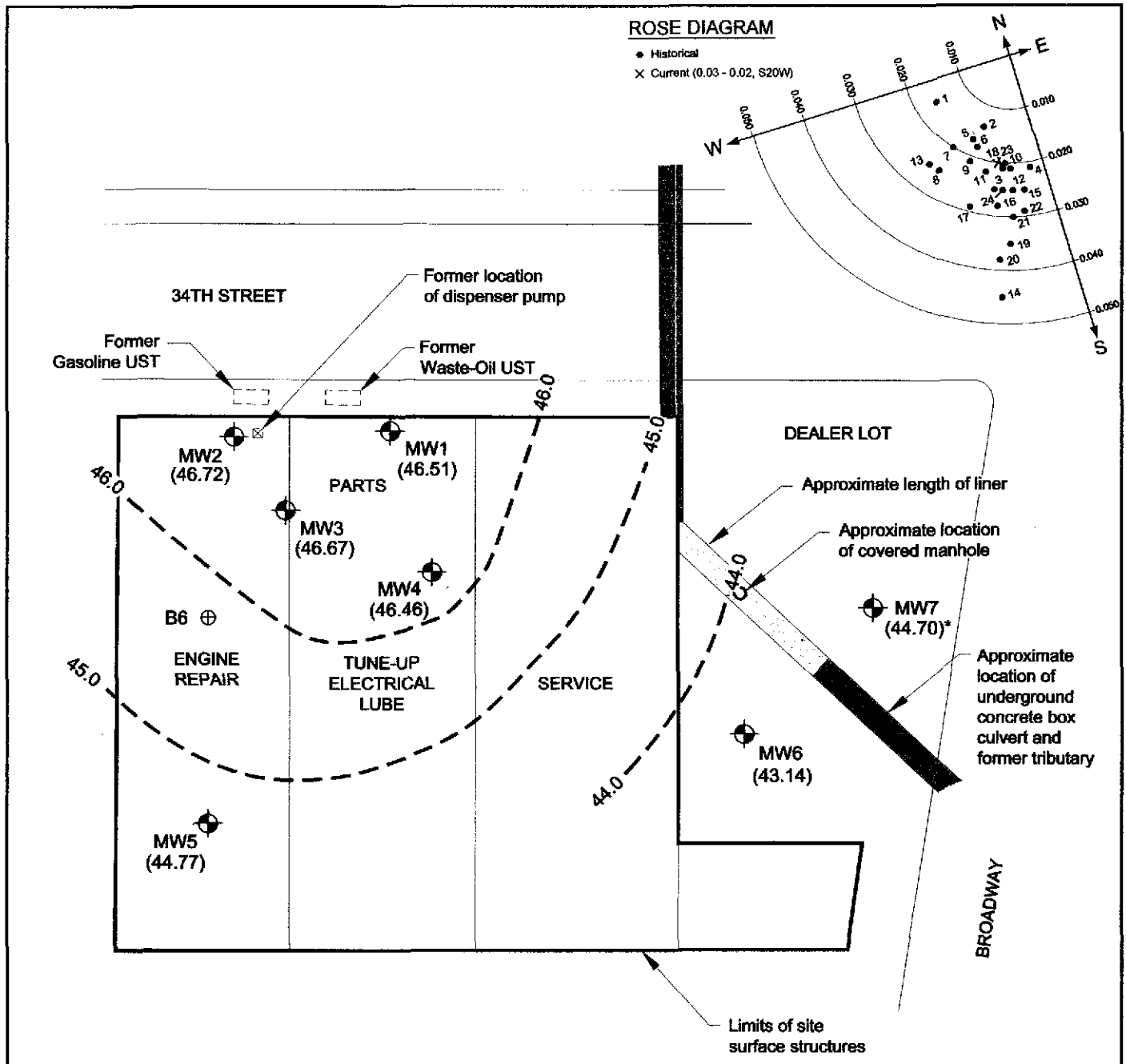
NOTE:
MW2 and MW3 soil analytical data from July 1993.
B6 and MW5 soil analytical data from June 1998.
Analytical data reported in milligrams per kilogram (mg/kg).

FILENAME: CROSS-SECTIONS0604.DWG 06/21/04

ETIC ENGINEERING

SCHEMATIC GEOLOGIC CROSS-SECTION B-B'
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE:
4



LEGEND:

- Groundwater monitoring well
- ⊕ Boring location
- Culvert liner
- Underground concrete box culvert
- 43.0 Groundwater elevation contour in feet above mean sea level
- * Well not used to calculate gradient

N

0 25 50

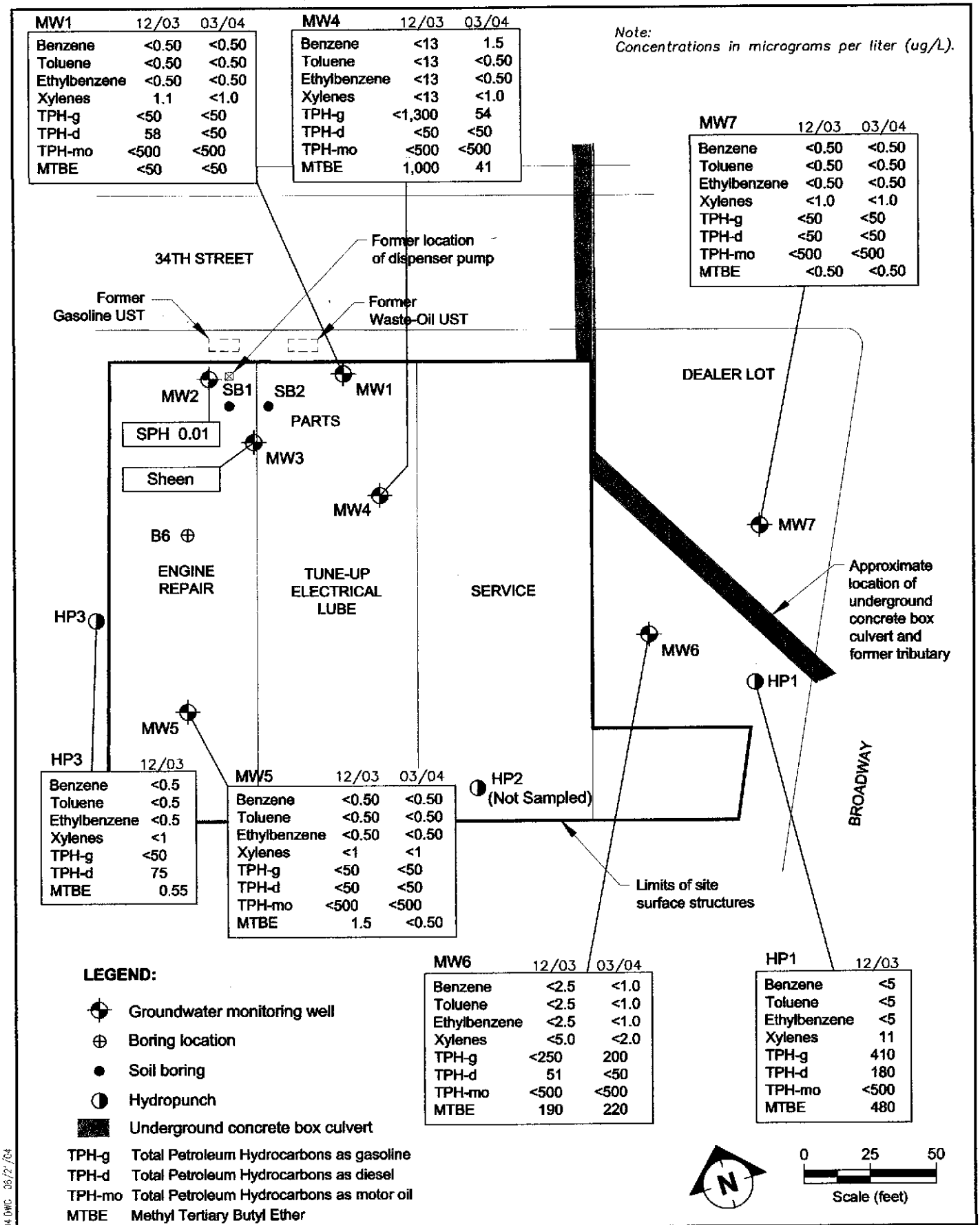
Scale (feet)

ETIC ENGINEERING

MARCH 2004 GROUNDWATER CONTOUR MAP AND ROSE DIAGRAM
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE: **5**

FILENAME: SITEPLAN0604.DWG 06/18/04

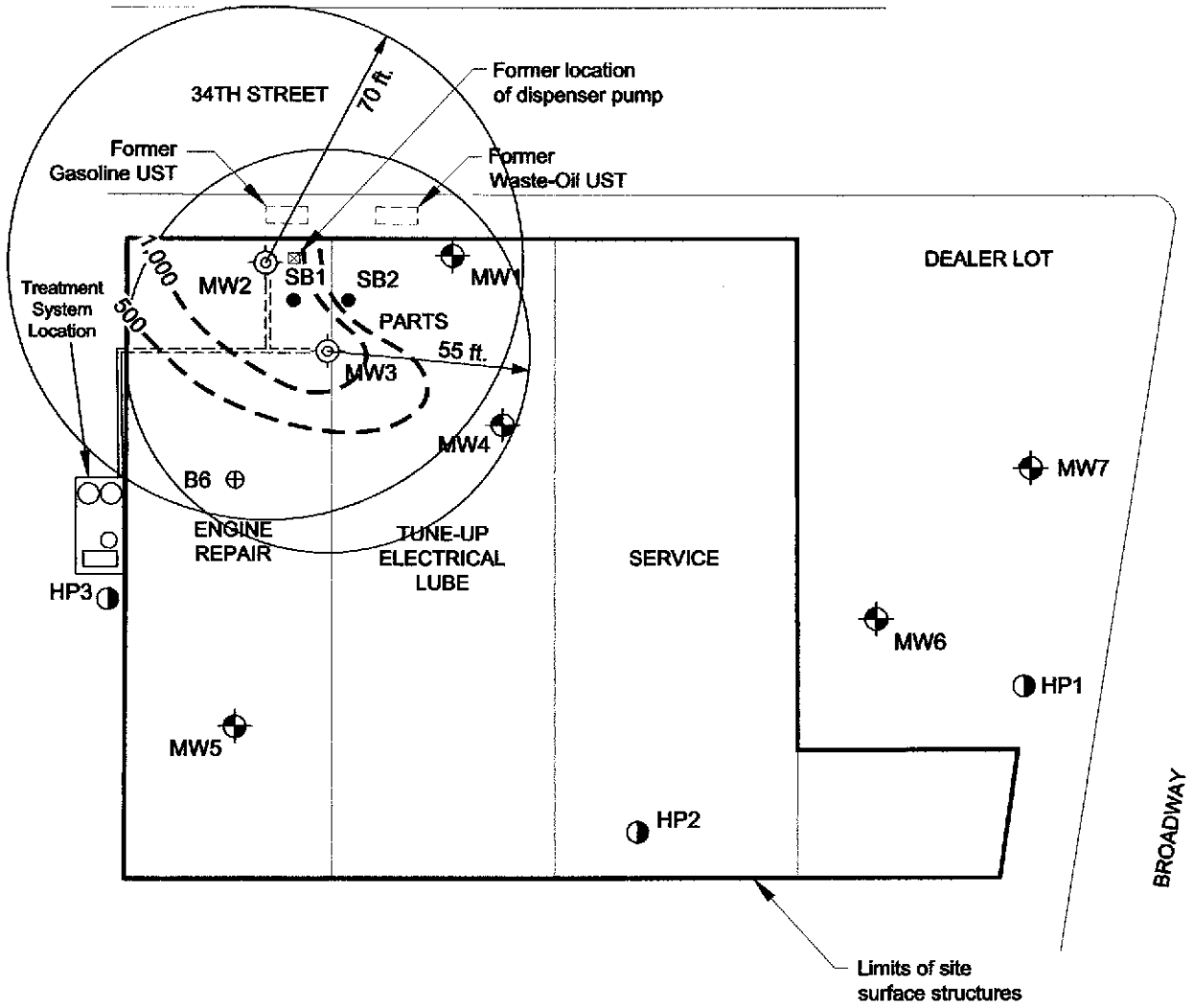


ETIC ENGINEERING

RECENT GROUNDWATER ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE: 6

FILENAME: SITEPLAN0604.DWG 06/21/04



LEGEND:

- Proposed dual phase extraction well
- Groundwater monitoring well
- Boring location
- Soil boring
- Hydropunch
- 500 — TPH-g concentration in soil (mg/kg)
- Underground piping
- Aboveground piping

N

0 25 50

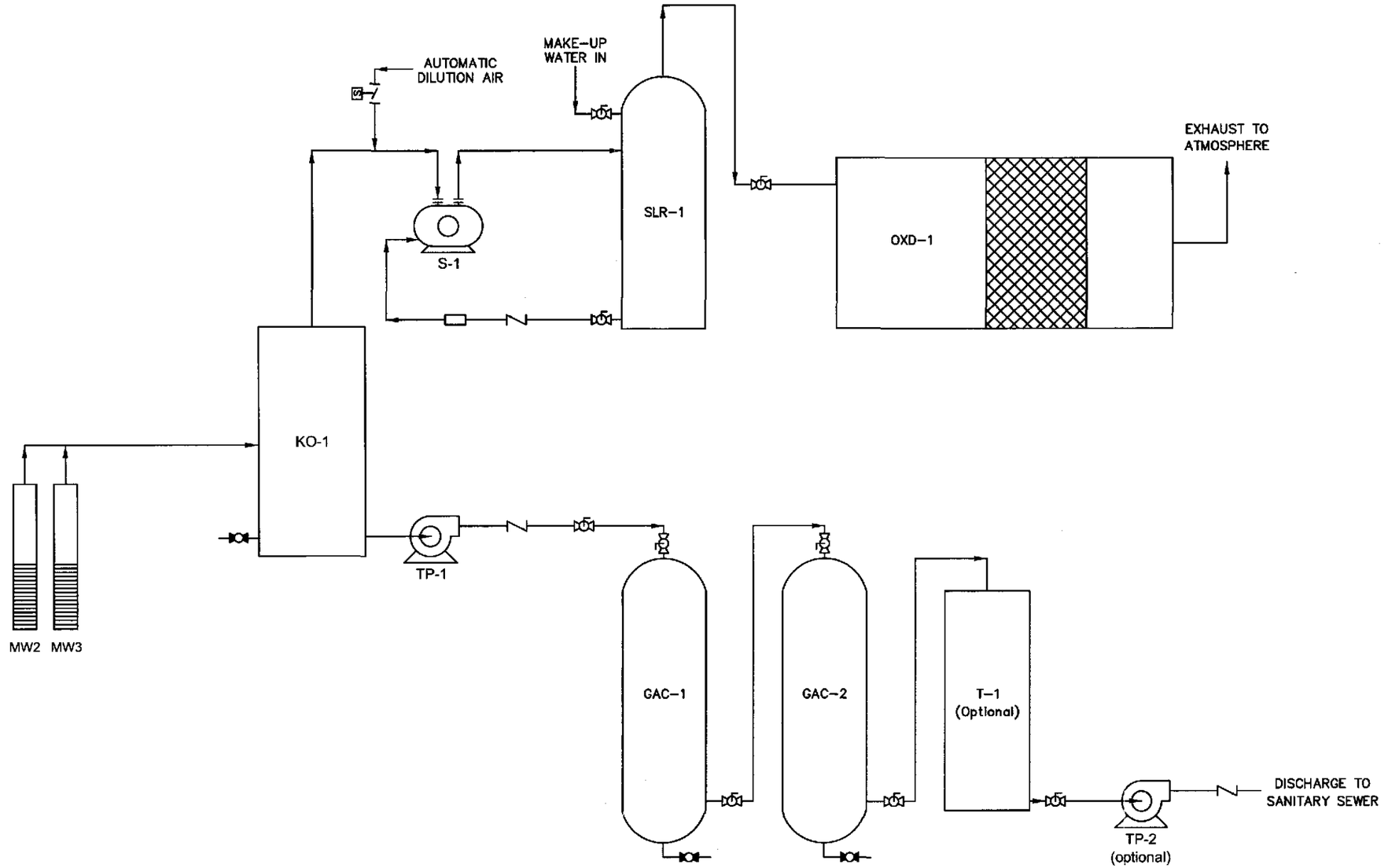
Scale (feet)

ETIC ENGINEERING

RADIUS OF VACUUM INFLUENCE AND
ANTICIPATED INTERIM REMEDIATION SYSTEM LAYOUT
FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

FIGURE: **7**

FILENAME: STEP-AN0504.DWG 06/21/04



S-1	WATER-SEALED LIQUID RING PUMP
KO-1	KNOCK-OUT VESSEL
SLR-1	SEAL LIQUID RESERVOIR
TP-1	KNOCK-OUT TRANSFER PUMP
TP-2	TREATED WATER DISCHARGE TRANSFER PUMP (OPTIONAL)
GAC-1, GAC-2	LIQUID PHASE GRANULAR ACTIVATED CARBON VESSELS
T-1	TREATED WATER HOLDING TANK (OPTIONAL)
OXD-1	THERMAL/CATALYTIC OXIDIZER

PROCESS FLOW DIAGRAM

STROUGH FAMILY TRUST
327 34TH STREET
OAKLAND, CALIFORNIA

ETIC ENGINEERING

DESIGN:	SUBBARAO NAGULAPATY	DRAWING: PFD-01	FIGURE 8
DRAWN:	MICHAEL WOTTRICH		
DATE:	03/17/2004	FILENAME: PROCESS FLOW.DWG	
PROJECT NUMBER:	TMSST		

Tables

TABLE 1 WELL CONSTRUCTION DETAILS

FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well ID	Well Installation Date	Top-of-Casing Elevation (feet)	Casing Material	Total Depth of Borehole (ft bgs)	Casing Diameter (inches)	Screened Interval (ft bgs)	Slot Size (inches)	Filter Pack Interval (ft bgs)	Filter Pack Material
MW1	07/19/93	64.69	PVC	32	2	17-32	0.020	15-32	Gravel Pack
MW2	07/20/93	65.95	PVC	33	2	18-33	0.020	16-33	Gravel Pack
MW3	07/20/93	65.99	PVC	34	2	18-34	0.020	16-34	Gravel Pack
MW4	06/26/98	63.35	PVC	31	2	15-31	0.020	13-31.5	Lonestar #3 Sand
MW5	06/26/98	65.59	PVC	31	2	15-31	0.020	13-31.5	Lonestar #3 Sand
MW6	07/17/00	59.60	PVC	31.5	2	10-30	0.020	8-30	Lonestar #3 Sand
MW7	07/17/00	59.47	PVC	36.5	2	15-35	0.020	13-35	Lonestar #3 Sand

a Elevations based on a survey conducted August 2002 and referenced benchmark with known elevation (NGVD 29) of 60.40 feet above mean sea level.
PVC Polyvinyl chloride.
ft bgs Feet below ground surface.

TABLE 2 HISTORIC SOIL ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Depth (feet)	Concentrations in mg/kg														
			Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	TBA	MTBE	DIPE	ETBE	TAME	1,2-DCA	EDB	Oil & Grease
MW1	7/19/1993	4.5-6	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--	<0.050
MW1	7/19/1993	9.5-11	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--	<0.050
MW1	7/19/1993	14.5-16	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--	<0.050
MW1	7/19/1993	19.5-21	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--	<0.050
MW1	7/19/1993	24.5-26	<0.005	<0.005	<0.005	<0.005	<1	<10	--	--	--	--	--	--	--	--	<0.050
MW2	7/19/1993	4.5-6	**7.2**	**71**	**31**	**260**	**2,000**	--	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	9.5-11	**5.7**	**54**	**24**	**210**	**1,700**	--	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	14.5-16	**1.8**	**14**	**5.1**	**51**	**410**	--	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	19.5-21	**100**	**780**	**260**	**1,700**	**10,000**	--	--	--	--	--	--	--	--	--	--
MW2	7/19/1993	24.5-26	**1.9**	**5.2**	**0.56**	**3.4**	**19**	--	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	4.5-6	ND	0.009	<0.005	**0.014**	<1	--	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	9.5-11	<0.005	<0.005	<0.005	0.009	<1	--	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	14.5-16	**0.079**	**0.009**	**0.01**	**0.023**	<1	--	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	19.5-21	**6.4**	**46**	**14**	**150**	**1,400**	--	--	--	--	--	--	--	--	--	--
MW3	7/20/1993	24.5-26	**1.4**	**2.6**	**0.38**	**2**	**19**	--	--	--	--	--	--	--	--	--	--
MW4	6/26/1998	5-5.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--	--
MW4	6/26/1998	20-20.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--	--
MW4	6/26/1998	25-25.5	**0.045**	**0.015**	**0.012**	**0.03**	<1	--	--	--	**62**	--	--	--	--	--	--
MW5	6/26/1998	14.5-15	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--	--
MW5	6/26/1998	20-20.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--	--
B-6	6/26/1998	15.5-16	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--	--
B-6	6/26/1998	21-21.5	<0.005	<0.005	<0.005	<0.005	<1	--	--	--	<0.020	--	--	--	--	--	--
Tank Removal Sampling Data																	
TA001	3/4/1993	11	<0.010	**0.11**	**0.48**	**0.28**	**5.0**	--	--	--	--	--	--	--	--	--	--
TA002	3/4/1993	11	<0.080	**0.2**	**4.9**	**7.8**	**130**	--	--	--	--	--	--	--	--	--	--
TA003	3/5/1993	9	<0.005	<0.005	**0.014**	**0.018**	<1	**96**	--	--	--	--	--	--	--	--	<0.050
TA004	3/5/1993	9	<0.005	<0.005	<0.005	<0.005	<1	**7.0**	--	--	--	--	--	--	--	--	<0.050

Concentrations reported in milligrams per kilograms

TPH-g	Total Petroleum Hydrocarbons as gasoline.	TBA	t-butyl alcohol
TPH-d	Total Petroleum Hydrocarbons as diesel.	DIPE	di-isopropyl ether
TPH-mo	Total Petroleum Hydrocarbons as motor oil.	ETBE	ethyl t-butyl ether
MTBE	Methyl tertiary butyl ether.	TAME	t-amyl methyl ether
--	Not analyzed.	1,2-DCA	1,2-dicholorehtnane
		EDB	ethylene dibromide

TABLE 3 CUMULATIVE GROUNDWATER ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	LPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)								
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW1	07/27/93	100.00	a	20.79	79.21	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	--	--	--	--	--	--	--	--	--	--	--
MW1	10/02/97	100.00	a	21.22	78.78	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<2.0	--	--	--	--	--	--	--	--	--
MW1	06/30/98	100.00	a	18.21	81.79	0.00	<0.50	<0.50	2.1	0.6	84	--	--	2.1	204	5	6.16	0.15	0.046	55	<0.10	<0.10	2
MW1	07/29/98	100.00	a	18.74	81.26	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	08/26/98	100.00	a	19.28	80.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/01/98	100.00	a	19.93	80.07	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	192	3.6	6.49	--	--	--	--	--	--
MW1	10/30/98	100.00	a	20.22	79.78	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/30/98	100.00	a	19.99	80.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/28/98	100.00	a	19.81	80.19	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	01/25/99	100.00	a	19.62	80.38	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	389	3.4	6.72	--	--	--	--	--	--
MW1	02/26/99	100.00	a	17.18	82.82	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/24/99	100.00	a	17.28	82.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/12/99	100.00	a	17.91	82.09	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/15/99	100.00	a	21.01	78.99	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--	3.31	6.52	--	--	--	--	--	--
MW1	03/20/00	100.00	a	16.25	83.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	07/20/00	100.00	a	19.63	80.37	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	3.4	120	7.37	6.66	0.13	<0.01	54	<0.10	3.4	<0.2
MW1	10/11/00	100.00	a	20.80	79.20	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	04/10-11/01	100.00	a	18.81	81.19	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	1.2	117	NR	NR	<0.10	0.045	57	<0.10	6.6	0.15
MW1	07/10/01	100.00	a	20.51	79.49	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/20/01	64.69	b	21.36	43.33	0.00	<0.50	1.3	<0.50	0.81	<50	<50	<300	<2.0	--[c]	0.65	6.47	0.32	1.8	63	<0.10	--	<0.20
MW1	02/19/02	64.69	b	18.95	45.74	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/21/02	64.69	b	19.82	44.87	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	120	0.96	6.25	<0.10	0.5	58	<0.10	5.5	<0.20
MW1	06/27/03	64.69	b	19.93	44.76	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/03	64.69	b	21.24	43.45	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	--	--	--	--	--	--	--
MW1	12/12/03	64.69	b	21.27	43.42	0.00	<0.50	<0.50	<0.50	1.1	<50	58	<500	<0.50	--	--	--	--	--	--	--	--	--
MW1	**03/15/04**	**64.69**	**b**	**18.18**	**46.51**	**0.00**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<50**	**<50**	**<500**	**<0.50**	--	**0.14**	--	--	--	--	--	--	--
MW2	07/27/93	101.27	a	22.10	79.17	0.00	10,000	27,000	2,900	20,000	120,000	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/02/97	101.27	a	22.91	78.36	0.43	*	*	*	*	*	--	--	*	--	--	--	--	--	--	--	--	--
MW2	06/30/98	101.27	a	19.69	81.58	0.45	7,300	18,000	2,500	15,600	72,000	--	--	5,500	185	2.2	5.98	--	--	--	--	--	--
MW2	07/29/98	101.27	a	20.11	81.16	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	08/26/98	101.27	a	20.54	80.73	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/01/98	101.27	a	21.52	79.75	0.42	6,400	17,000	2,600	17,000	84,000	--	--	2,000	--	2.7	6.47	--	--	--	--	--	--
MW2	10/30/98	101.27	a	21.54	79.73	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	11/30/98	101.27	a	21.21	80.06	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/28/98	101.27	a	21.10	80.17	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	01/25/99	101.27	a	20.80	80.47	0.01	9,000	26,000	3,800	27,500	130,000	--	--	5,800	386	0.3	6.69	--	--	--	--	--	--
MW2	02/26/99	101.27	a	18.00	83.27	sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	03/24/99	101.27	a	18.27	83.00	trace	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/12/99	101.27	a	19.08	82.19	trace	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/15-16/99	101.27	a	22.42	78.85	0.025	*	*	*	*	*	*	*	*	--	*	*	--	--	--	--	--	--
MW2	03/20/00	101.27	a	17.09	84.18	0.026	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	07/20/00	101.27	a	20.86	80.41	0.017	*	*	*	*	*	*	*	*	*	0.88	6.37	*	*	*	*	*	*
MW2	10/11/00	101.27	a	22.10	79.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	04/10-11/01	101.27	a	19.98	81.29	0.00	8,000	22,000	2,600	23,500	150,000	1,500	<600	3,600	168	NR	NR	3.1	2.5	16	0.14	0.19	<0.20
MW2	07/10/01	101.27	a	21.85	79.42	0.00	5,900	15,000	2,300	12,100	83,000	5,700	<1,500	2,800	--	--	--	--	--	--	--	--	--
MW2	11/20/01	65.95	b	22.75	43.20	0.00	--	--	--	--	--	--	--	--	120	NR	6.15	1.8	2	16	<0.10	--	<0.20

TABLE 3 CUMULATIVE GROUNDWATER ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	LPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)								
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW4	07/20/00	98.65	a	18.38	80.27	0.00	91	4.6	19	12.9	210	<50	<300	1,500	126	3.88	6.67	9.5	5.3	11	<0.10	0.04	<0.20
MW4	10/11/00	98.65	a	19.61	79.04	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	04/10-11/01	98.65	a	17.55	81.10	0.00	110	<5.0	<5.0	<5.0	350	<50	<300	1,100	107	NR	NR	0.8	6.3	10	<0.10	<0.05	<0.20
MW4	07/10/01	98.65	a	19.34	79.31	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/20/01	63.35	b	20.16	43.19	0.00	<2.5	4	<2.5	3.7	96	<50	<300	2,500	130	0.83	6.51	1.6	10	11	<0.10	--	<0.20
MW4	02/19/02	63.35	b	17.34	46.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/21/02	63.35	b	18.57	44.78	0.00	340	5.7	70	<1.0	940	83	<300	1,600	150	1.65	6.32	3.1	8.4	9	<0.10	0.06	<0.20
MW4	06/27/03	63.35	b	18.72	44.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	09/29/03	63.35	b	20.11	43.24	0.00	<5.0	<5.0	<5.0	<10	1,100	<50[d]	<500	1,700	--	--	--	--	--	--	--	--	--
MW4	12/12/03	63.35	b	20.06	43.29	0.00	<13	<13	<13	<25	<1,300	<50	<500	1,000	--	--	--	--	--	--	--	--	--
MW4	**03/15/04**	**63.35**	**b**	**16.89**	**46.46**	**0.00**	**1.5**	**<0.50**	**<0.50**	**<1.0**	**54[d]**	**<50**	**<500**	**41**	--	**0.16**	--	--	--	--	--	--	--
MW5	06/30/98	100.9	a	20.60	80.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	23	220	4.3	6.1	--	--	--	--	--	--
MW5	07/29/98	100.9	a	21.52	79.38	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	08/26/98	100.9	a	22.21	78.69	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	10/01/98	100.9	a	22.95	77.95	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	256	4.8	6.71	--	--	--	--	--	--
MW5	10/30/98	100.9	a	23.23	77.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/30/98	100.9	a	23.12	77.78	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/28/98	100.9	a	23.18	77.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	01/25-26/99	100.9	a	22.61	78.29	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	305	9.7	7.04	--	--	--	--	--	--
MW5	02/26/99	100.9	a	19.78	81.12	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/24/99	100.9	a	20.25	80.65	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/12/99	100.9	a	21.06	79.84	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/15-16/99	100.9	a	24.19	76.71	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--	2.72	7.19	--	--	--	--	--	--
MW5	03/20/00	100.9	a	19.15	81.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	07/20/00	100.9	a	21.84	79.06	0.00	<0.50	0.98	<0.50	<0.50	<50	<50	<300	1.9	134	5.58	6.35	0.11	0.017	49	<0.10	3.9	<0.20
MW5	10/11/00	100.9	a	23.4	77.50	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	04/10-11/01	100.9	a	22.3	78.60	0.00	<0.50	2.6	<0.50	0.6	<50	<50	<300	1.5	183	66	NR	<0.10	0.042	45	<0.10	2.9	0.11
MW5	07/10/01	100.9	a	23.64	77.26	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/20/01	65.59	b	24.65	40.94	0.00	0.83	12	1.2	11	140	860	2,500	10	--[c]	66	6.01	0.2	2.5	42	<0.10	--	<0.20
MW5	02/19/02	65.59	b	22.37	43.22	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/21/02	65.59	b	23.10	42.49	0.00	<0.50	<0.50	<0.50	<0.50	<50	2,200	<300	<2.0	140	66	6.3	<0.1	0.22	44	<0.10	3	<0.20
MW5	06/27/03	65.59	b	23.07	42.52	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/29/03	65.59	b	24.38	41.21	0.00	<0.50	0.52	7.1	35	100	<50[d]	<500	1.4	--	--	--	--	--	--	--	--	--
MW5	12/12/03	65.59	b	23.90	41.69	0.00	<0.50	<0.50	<0.50	<1	<50	<50	<500	1.5	--	--	--	--	--	--	--	--	--
MW5	**03/15/04**	**65.59**	**b**	**20.82**	**44.77**	**0.00**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<50**	**<50**	**<500**	**<0.50**	--	**6.4**	--	--	--	--	--	--	--
MW6	07/20/00	96.60	a	18.30	78.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	160	122	2.72	6.66	120	1.9	53	6	0.05	<0.20
MW6	10/11/00	96.60	a	18.69	77.91	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	04/10-11/01	96.60	a	17.85	78.75	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	180	142	NR	NR	22	2.2	0.69	5.2	<0.05	<0.20
MW6	07/10/01	96.60	a	18.43	78.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	11/20/01	59.60	b	18.67	40.93	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	450	100	2.03	6.44	29	5.2	1.1	3.4	--	<0.20
MW6	02/19/02	59.60	b	17.40	42.20	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	05/21/02	59.60	b	17.68	41.92	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	170	100	0.76	6.6	11	3.4	1.4	8.9	0.65	<0.20
MW6	06/27/03	59.60	b	17.73	41.87	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/29/03	59.60	b	18.48	41.12	0.00	<1.0	<1.0	<1.0	<2.0	230[d]	<50	<500	340	--	--	--	--	--	--	--	--	--
MW6	12/12/03	59.60	b	17.89	41.71	0.00	<2.5	<2.5	<2.5	<5.0	<250	51	<500	190	--	--	--	--	--	--	--	--	--

TABLE 3 CUMULATIVE GROUNDWATER ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	LPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)								
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW6	**03/15/04**	**59.60**	**b**	**16.46**	**43.14**	**0.00**	**<1.0**	**<1.0**	**<1.0**	**<2.0**	**200**	**<50**	**<500**	**220**	--	**0.11**	--	--	--	--	--	--	--
MW7	07/20/00	96.75	a	15.93	80.82	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	32.2	7.15	7.43	<0.1	0.002	7.5	<0.10	2.6	0.13
MW7	10/11/00	96.75	a	16.90	79.85	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	04/10-11/01	96.75	a	15.80	80.95	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	77.6	NR	NR	0.18	0.048	49	<0.10	2.7	0.31
MW7	07/10/01	96.75	a	16.71	80.04	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	11/20/01	59.47	b	16.17	43.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	62	0.96	7.11	0.16	1.8	63	<0.10	--	<0.20
MW7	02/19/02	59.47	b	14.92	44.55	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	05/21/02	59.47	b	15.18	44.29	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	68	1.03	7.57	0.11	0.35	51	<0.10	2.8	0.11
MW7	06/27/03	59.47	b	16.28	43.19	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/29/03	59.47	b	16.88	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	0.62	--	--	--	--	--	--	--	--	--
MW7	12/12/03	59.47	b	14.95	44.52	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	--	--	--	--	--	--	--
MW7	**03/15/04**	**59.47**	**b**	**14.77**	**44.70**	**0.00**	**<0.50**	**<0.50**	**<0.50**	**<1.0**	**<50**	**<50**	**<500**	**<0.50**	--	**0.54**	--	--	--	--	--	--	--

LPH Liquid-phase hydrocarbons.
CO_2 Carbon dioxide.
DO Dissolved oxygen.
Fe(II) Ferrous iron.
Mn Manganese.
SO_4 Sulfate.
$N\text{-}NH_3$ Ammonia.
$N\text{-}NO_3$ Nitrate.
$o\text{-}PO_4$ Ortho-Phosphate.
GW Groundwater.
TPH-g Total Petroleum Hydrocarbons as gasoline.
TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-mo Total Petroleum Hydrocarbons as motor oil.
MTBE Methyl tertiary butyl ether.
NR Not reported.
µg/L Micrograms per liter.
mg/L Milligrams per liter.
* Free product; sample not analyzed.
-- Not analyzed or not sampled.
< Less than the laboratory reporting limits.
a Elevations are referenced to monitoring well MW1, with assumed datum of 100.00 feet.
b Elevations based on a survey conducted August 2002 and referenced benchmark with known elevation (NGVD 29) of 60.40 feet above mean sea level.
c Analysis not conducted due to broken sample containers.
d Hydrocarbon reported in the gasoline range does not match laboratory gasoline standard.
e Groundwater elevation in wells with LPH are corrected by multiplying the specific gravity of gasoline (0.69) by the LPH thickness and adding this value to the water elevation.

TABLE 3 CUMULATIVE GROUNDWATER ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	LPH Thickness (feet)	Concentration (µg/L)								Concentration (mg/L)								
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	CO_2 (lab)	DO (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW2	02/19/02	65.95	b	20.12	45.83	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/21/02	65.95	b	21.10	44.85	0.00	8,600	25,000	3,500	26,000	150,000	31,000	<3,000	4,800	160	0.88	5.99	3.9	1.7	13	<0.10	0.54	<0.20
MW2	06/27/03	65.95	b	21.48	44.47	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	09/29/03	65.95	b	23.04	42.91	0.48	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[c]	12/12/03	65.95	b	22.75	43.31	0.16	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW2[c]	**03/15/04**	**65.95**	**b**	**19.24**	**46.72**	**0.01**	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3	07/27/93	101.29	a	22.28	79.01	0.02	9,100	24,000	5,300	33,000	330,000	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/02/97	101.29	a	22.71	78.58	0.03	4,200	11,000	1,800	10,600	36,000	--	--	3,500	--	--	--	--	--	--	--	--	--
MW3	06/30/98	101.29	a	19.47	81.82	0.00	4,800	11,000	1,200	7,100	51,000	--	--	3,900	300	2	6.03	1.4	9.8	13	1.4	<0.10	2.4
MW3	07/29/98	101.29	a	20.01	81.28	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	08/26/98	101.29	a	20.62	80.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/01/98	101.29	a	21.33	79.96	0.00	3,900	8,500	1,200	6,000	38,000	--	--	2,300	240	2	6.65	--	--	--	--	--	--
MW3	10/30/98	101.29	a	21.62	79.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/30/98	101.29	a	21.31	79.98	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/28/98	101.29	a	21.15	80.14	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	01/25/99	101.29	a	20.79	80.50	0.00	4,000	10000	1200	6700	5,100	--	--	2900	238	1	7.01	--	--	--	--	--	--
MW3	02/26/99	101.29	a	18.02	83.27	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/24/99	101.29	a	18.37	82.92	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/12/99	101.29	a	19.22	82.07	0.0083	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/15-16/99	101.29	a	22.43	78.86	0.00	*	*	*	*	*	*	*	*	--	*	*	--	--	--	--	--	--
MW3	03/20/00	101.29	a	17.14	84.15	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	07/20/00	101.29	a	20.98	80.31	0.00	5,700	14,000	1,600	9,300	69,000	2,900	<300	3,300	128	2.05	6.73	3.9	6.6	20	<0.10	0.55	<0.20
MW3	10/11/00	101.29	a	22.24	79.05	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	04/10-11/01	101.29	a	20.70	80.59	0.00	7,200	<0.001	2,300	12,900	110,000	4,700	<1,500	4,300	137	NR	NR	1	6	8.2	<0.10	0.13	<0.20
MW3	07/10/01	101.29	a	21.97	79.32	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/20/01	65.99	b	22.80	43.19	0.00	6,300	16,000	2,400	14,900	100,000	5,900	<900	4,000	120	2.93	6.67	0.84	12	31	<0.10	--	<0.20
MW3	02/19/02	65.99	b	20.11	45.88	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/21/02	65.99	b	21.20	44.79	0.00	6,500	17,000	2,200	12,700	91,000	14,000	<3,000	2,200	130	1.01	6.62	4.2	9.6	25	<0.10	0.77	<0.20
MW3	06/27/03	65.99	b	21.32	44.67	sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	09/29/03	65.99	b	22.79	43.20	sheen	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3[c]	12/12/03	65.99	b	22.73	43.27	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW3[c]	**03/15/04**	**65.99**	**b**	**19.32**	**46.67**	**sheen**	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MW4	06/30/98	98.65	a	16.93	81.72	0.00	2,200	930	850	2,100	10,000	--	--	1,800	222	2.6	6.18	0.14	4.3	14	0.8	0.8	1.5
MW4	07/29/98	98.65	a	17.48	81.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	08/26/98	98.65	a	18.65	80.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	10/01/98	98.65	a	18.74	79.91	0.00	570	46	130	36	1,100	--	--	1,300	320	3.4	<0.001	--	--	--	--	--	--
MW4	10/30/98	98.65	a	19.02	79.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/30/98	98.65	a	18.74	79.91	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/28/98	98.65	a	18.60	80.05	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	01/25-26/99	98.65	a	18.32	80.33	0.00	230	<8.3	<8.3	<8.3	290	--	--	1,300	475	6.7	7	--	--	--	--	--	--
MW4	02/26/99	98.65	a	15.81	82.84	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	03/24/99	98.65	a	16.01	82.64	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/12/99	98.65	a	17.71	80.94	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/15-16/99	98.65	a	19.83	78.82	0.00	5.8	<0.50	<0.50	<0.50	<50	--	--	1,400	--	1.75	7.02	--	--	--	--	--	--
MW4	03/20/00	98.65	a	14.9	83.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 4: DUAL PHASE EXTRACTION TEST - FIELD DATA

FORMER VAL STROUGH CHEVROLET, 327 34TH STREET, OAKLANI

Date	Time	Extraction Well	Elaspe time (hr:min)	Totalizer reading (gallons)	Depth of Stinger (feet)	Vapor temp. (°F)	Vapor from vim (scfm)	S DATA MW5 Depth to water (feet)	MW5 Obs. Vacuum (in H_2O)	MW6 Depth to water (feet)	MW6 Obs. Vacuum (in H_2O)	MW7 Depth to water (feet)	MW7 Obs. Vacuum (in H_2O)
							XX	21.34	XXXXXX	16.75	XXXXXX	14.60	XXXXXX
							XX	21.27	XXXXXX	16.91	XXXXXX	14.93	XXXXXX
3/30/2004	10:25	MW2	0:00	104,095	19.0	--	146	--	--	--	--	--	--
3/30/2004	10:45	MW2	0:20		19.0		153	21.27	0.0	--	0.06	--	0.0
3/30/2004	11:00	MW2	0:15		19.0		154	21.37	0.0	--	0.0	--	0.0
3/30/2004	11:30	MW2	0:30	104,320	25.0		3	21.27	0.0	--	--	--	--
3/30/2004	12:00	MW2	0:30	104,405	30			--	--	--	--	--	--
3/30/2004	12:25	MW2	0:25	104,515	30.0	140	140	21.27	0	--	--	--	--
3/30/2004	13:05	MW2	0:40		30.0		142	21.27	0	--	--	--	--
3/30/2004	13:15	MW2	0:10	104,730	30.0		140	--	--	--	--	--	--
AVERAGE/TOTAL:			**2:50**	**635**			**146**						
3/30/2004	13:15	MW3	0:00	104,730	22.0	--	135	--	--	--	--	--	--
3/30/2004	13:40	MW3	0:25	104,884	22.0	--	138	21.26	0.0	--	0.0	--	0.0
3/30/2004	14:20	MW3	0:40	105,182	22.0	--	138	21.26	0.0	--	--	--	--
3/30/2004	15:00	MW3	0:40	--	22.5	--	138	21.26	0.0	--	--	--	--
3/30/2004	15:30	MW3	0:30	105,580	22.5	--	138	21.26	0.0	--	--	--	--
AVERAGE/TOTAL:			**2:15**	**850**			**137**						
3/30/2004	15:40	MW2 MW3	0:00	105,580	25.0 21.0	--	147	--	--	--	--	--	--
3/30/2004	16:30	MW2 MW3	0:50	106,080	25.0 21.0	--	146	21.25	0.0	--	--	--	--
3/30/2004	17:30	MW2 MW3	1:00	106,700	25.0 21.0	--	146	21.25	0.0	--	--	--	--
3/30/2004	18:30	MW2 MW3	1:00	107,505	25.0 21.0	--	146	21.25	0.0	--	--	--	--
3/30/2004	19:30	MW2 MW3	1:00	107,680	25.0 21.0	--	146	21.26	0.0	--	--	--	--
3/30/2004	20:30	MW2 MW3	1:00	108,130	25.0 21.0	--	146	21.26	0.0	--	--	--	--
3/30/2004	21:30	MW2 MW3	1:00	108,800	25.0 21.0	--	146	21.26	0.0	--	0.025	--	0.0
3/30/2004	22:30	MW2 MW3	1:00	109,280	25.0 21.0	--	147	21.27	0.0	--	0.015	--	0.0
3/30/2004	23:30	MW2 MW3	1:00	109,860	25.0 21.0	--	148	21.28	0.0	--	+0.01	--	0.0
3/31/2004	0:30	MW2 MW3	1:00	110,380	25.0 21.0	--	147	21.28	0.0	--	0.0	--	0.0
3/31/2004	1:30	MW2 MW3	1:00	110,680 110,753	25.0 21.0	--	147	21.28	0.0	--	0.0	--	0.0
AVERAGE/TOTAL:			**9:50**	**5,173**			**147**						

Notes: **NOTES:**

scfm - standard cubic feet per minute

ppmv - parts per million by volume

in. Hg - inches of mercury column

in. H_2O - inches of water column

Vapor concentrations noted on the field data table are measured using a portable photo ioniz

TABLE 5 DUAL PHASE EXTRACTION TEST - VAPOR ANALYTICAL RESULTS
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Sample Location	Date	Time	Matrix	Concentrations					
				TPH-g µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	MTBE µg/L
COMB WELLS-1	03/30/04	22:15	Air	7,200	110	360	43	220	14
COMB WELLS-2	03/31/04	0:25	Air	6,400	98	340	45	240	12
EFF	03/31/04	0:20	Air	< 50	< 1.0	< 1.0	< 1.0	< 1.0	< 0.50

µg/L - Micrograms per liter
µg/mL - Micrograms per milliliter
TPH-g - Total petroleum hydrocarbons as gasoline
MTBE- Methyl Tertiary Butyl Ether
EFF-Effluent
TPH-g, BTEX, and MTBE analyzed by EPA method 8260B, Methane and carbondioxide analyzed by EPA method 3810M
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes

TABLE 6: DUAL PHASE EXTRACTION TEST - GROUNDWATER ANALYTICAL RESULTS
FORMER VAL STROUGH CHEVROLET, 327 34TH STREET, OAKLAND, CALIFORNIA

Sample Location	Date	Time	Matrix	Concentrations							
				TPH-g µg/L	TPH-d µg/L	TPH-mo µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Total Xylenes µg/L	MTBE µg/L
MW2	03/31/04	5:40	Water	49,000	18,000	< 5,000	1,700	9,300	1,700	16,000	630
MW3	03/31/04	5:45	Water	10,000	1,900	< 500	880	2,100	470	2,800	150
DPE KO	03/31/04	0:30	Water	37,000	5,400	1,500	2,200	8,300	1,200	9,500	1,800
BAKER TANK	03/31/04	6:00	Water	< 50	< 50	< 500	< 0.50	0.59	1.7	7.6	< 0.50
BAKER TANK 2	04/14/04	11:00	Water	--	--	--	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50

µg/L - Micrograms per liter
TPH-g - Total petroleum hydrocarbons as gasoline
TPH-d - Total petroleum hydrocarbons as diesel
TPH-mo - Total petroleum hydrocarbons as motor oil
MTBE- Methyl Tertiary Butyl Ether
TPH-g, TPH-d, and TPH-mo analyzed by EPA method 8015M, BTEX and MTBE analyzed by EPA method 8021B
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes

TABLE 7: DUAL PHASE EXTRACTION TEST - EXTRACTED MASS CALCULATIONS
STROUGH FAMILY TRUST, 327 34TH STREET, OAKLAND, CALIFORNIA

GROUNDWATER:

Well ID	Total volume extracted (gallons)	Groundwater Concentrations (µg/L)			Pounds Extracted		
		TPH-g	Benzene	MTBE	TPH-g	Benzene	MTBE
MW2	635	49,000	1,700	630	0.26	0.009	0.00
MW3	850	10,000	880	150	0.07	0.006	0.00
COMB. WELLS (FROM DPE KO)	5,173	37,000	2,200	1800	1.60	0.095	0.08
TOTAL =	**6,658**				**1.93**	**0.11**	**0.08**

VAPOR:

	Duration		Average flowrate		Average Conc. In Vapor with PID	Vapor Concentrations from Lab (µg/L)			Pounds extracted			
	(hrs:min)	(mins.)	(scfm)		(ppmv)	TPH-g	Benzene	MTBE	Field	TPH-g	Benzene	MTBE
MW2	2:50	170	146		1,873	--	--	--	12	--	--	--
MW3	2:15	135	137		1,379	--	--	--	7	--	--	--
COMB. WELLS	9:50	590	147	>	4,000	6,800	104	13	91	37	0.6	0.07
TOTAL =	**14:55**	**895**							**110**	**37**	**0.6**	**0.07**

NOTES:
µg/L - Micrograms per liter
MTBE - Methyl tertiary butyl ether
PID - Photo ionization detector
ppmv - Parts per million by volume
scfm - Standard cubic feet per minute
TPH-g - Total Petroleum Hydrocarbons as Gasoline

Pounds Extracted - Field (Vapor) = Flowrate (scfm) x Duration (mins.) x PID Conc. (ppmv) x 4.2 (µg/L/ppmv) x 28.32 (L/ft^3) x 1E-06 (g/µg) x 0.002205 (lbs/g)
Pounds Extracted - TPHg/Benzene/MTBE (Vapor) = Flowrate (scfm) x Duration (mins.) x Lab Conc. (µg/L) x 28.32 (L/ft^3) x 1E-06 (g/µg) x 0.002205 (lbs/g)
Pounds Extracted (Groundwater) = Volume of water (gals) x Conc. (µg/L) x 3.785 (L/gal) x 1E-06 (g/µg) x 0.002205 (lbs/g)

Appendix A

DPE Pilot Test Documents

105.0

DATE	TIME	EXTRACTION WELL	ELAP TIME, hrs	TOTALIZER READING, gal.	DEPTH OF STINGER ft	VAPOR TEMP. °F	EXTRACTION WELLS DATA							
							MW4		MW5		MW6		MW7	
							TH R,	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O
03/30/04	10:25	MW2	0	104095	17									
					19	—		XXXXXX		XXXXXX		XXXXXX		XXXXXX
								XXXXXX		XXXXXX		XXXXXX		XXXXXX
									10:42		10:54			
	10:45	MW2	20min	—	19	—	3	0.06	23.41	0	—	0.06	—	0
	11:00			—	19	—	2	0.10	23.51	0	—	0	—	0
	11:30	MW2		104320	25	—		0.08						
	12:00	MW2		104605										
					26.5	—								
					30.0									
	12:25	MW2		104915	30.0	140	4	0.08	23.41	0	—	—	—	—
	13:05	MW2		—	30.0	—	1	0.08	23.41	0	—	—	—	—
	13:15	MW2		—	30.0	—								

DATE	TIME	EXTRACTION WELL	ELAP TIME, hrs	TOTALIZER READING, gal.	DEPTH OF STINGER ft	VAPOR TEMP. °F
03/30/04	1315	MW3	0	104730	17	
					22	—
	13:40	MW3		104884	22	—
	14:20	MW3		105182	22	—
	15:00	MW3		—	22.5	—
	15:30	MW3		105580	22.5	—

ON WELLS DATA													
MW4		MW5			MW6			MW7					
OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O					
XXXXXX		XXXXXX		XXXXXX		XXXXXX		XXXXXX					
XXXXXX		XXXXXX		XXXXXX		XXXXXX		XXXXXX					
0.16	23.40	0	—	0	—	0							
0.16	23.40	0	—	—	—	—							
0.14	23.40	0	—	—	—	—							
0.14	23.40	0	—	—	—	—							

DATE	TIME	EXTRACTION WELL	ELAP TIME, hrs	TOTALIZER READING, gal.	DEPTH OF STINGER ft	VAPOR TEMP. °F	OBSERVATION WELLS DATA							
							MW4		MW5		MW6		MW7	
							OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	DEPTH TO WATER, ft	OBS. VACUUM, in H_2O	
03/30/04	15:40	MW2+ MW3 CW	0	105580	25 21	–	XXXXXX XXXXXX		XXXXXX XXXXXX		XXXXXX XXXXXX		XXXXXX XXXXXX	
3/30	1630	MW2		106080	25		.26	23.39	0.00					
		MW3			21									
	1730	MW2		106700	25		.28	23.39	0.00					
		MW3			21									
	1830	MW2		107505	25		.28	23.39	0.00					
		MW3			21									
	1930	MW2		107680	25		.29	23.40	0.00					
		MW3			21									
	2030	MW2		108130	25		.28	23.40	0.00					
		MW3			21									
	2130	MW2		108900	25	14	.28	23.40	0.0		.025		0.0	
		MW3			21									
	2230	MW2		109280	25	14	.28	23.41	0.0		.015		0.0	
		MW3			21									
	2330	MW2		109860	25	14	.27	23.42	0.0		+.01		0.0	
		MW3			21									
3/31/04	0030	MW2		110380	25	14	.28	23.42	0.0		0.0		0.0	
		MW3			21									
	0130	MW2		110680	25	14	.28	23.42	0.0		0.0		0.0	
		MW3			21									
				110753	– END TOTA									

TABLE 4: DUAL PHASE EXTRACTION TEST - FIELD DATA
STROUGH FAMILY TRUST OF 1983, 327 34TH STREET, OAKLAND, CALIFORNIA

05:15 - 05:45

WELL ID	DEPTH TO GROUNDWATER		CORRECTION FOR DROP TUBE, FT
	Prior to DPE ft TOC CORRECTION NOT READ	End of DPE ft TOC NO CORRECTION	
MW1	18.69	19.66	-1.83
MW2	NO FP 19.65	NO FP 20.83	-
MW3	NO FP 19.74	NO FP 20.66	-1.46
MW4	17.33	18.13	-4.32
MW5	21.34	21.27	-2.14
MW6	16.75	16.91	-
MW7	14.60	14.93	-

DOUBLE CHECKED. W/2 DIFF. METERS

Note if values need to be corrected for wellhead assembly.

LABORATORY SAMPLES TO BE COLLECTED

COLLECTED ON		SAMPLE ID	MATRIX	SAMPLE CONTAINERS		ANALYTES
DATE	TIME			QTY.	TYPE	
		MW2	WATER	3	40 mL VOA w/ HCl	TPH-G, TPH-D, TPH-MO, BTEX, MTBE 8015M/8020
		MW3	WATER	3	40 mL VOA w/ HCl	"
		DPE KO	WATER	3	40 mL VOA w/ HCl	"
		BAKER TANK 1	WATER	3	40 mL VOA w/ HCl	"
		~~BAKER TANK 2~~	WATER	3	40 mL VOA w/ HCl	"
		COMB WELLS - 1 ~~START~~ 2	AIR	2	TEDLAR BAGS	TPH-G, BTEX, MTBE 8015M/8020
		COMB WELLS - ~~END~~	AIR	2	TEDLAR BAGS	"

TOTAL SAMPLING SUPPLIES REQUIRED:

TEDLAR BAGS =	4
40 mL VOAs w/ HCl =	15
Ambers =	10

WELL TO WELL DISTANCES - FIELD MEASUREMENTS

FROM	TO	DIST., FT
MW2	MW1	56*
	MW3	27
	MW4	79
	MW5	127
	MW6	189*
	MW7	215*

FROM	TO	DIST., FT
MW3	MW1	52*
	MW2	27
	MW4	54
	MW5	101
	MW6	186*
	MW7	199*

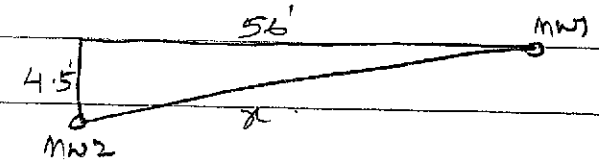
* DISTANCES CALCULATED FROM MAP & OTHER FIELD MEASUREMENTS.

WELL TO WELL DISTANCE CALCULATIONS.

MW2 to MW1

$x = \sqrt{56^2 + 4.5^2}$

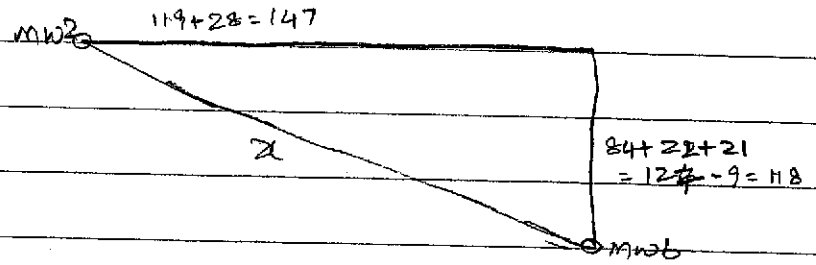
$= 56$ ft



MW2 to MW6

$x = \sqrt{147^2 + 118^2}$

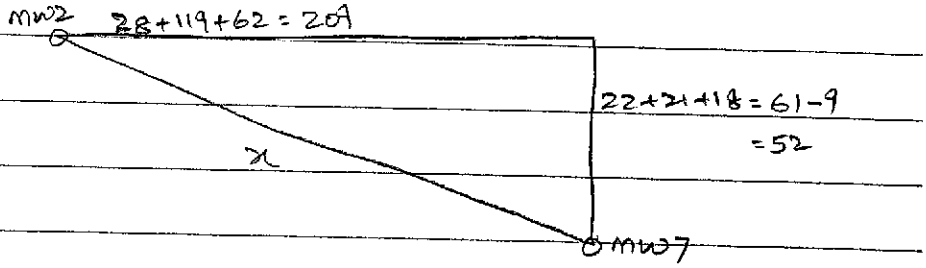
$= 189$ ft.



MW2 to MW7

$x = \sqrt{209^2 + 52^2}$

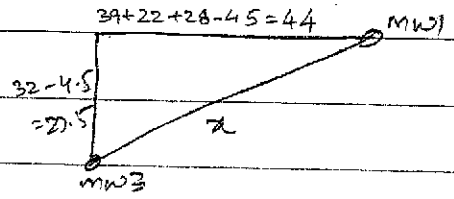
$= 215$ ft



MW3 to MW1

$x = \sqrt{44^2 + 27.5^2}$

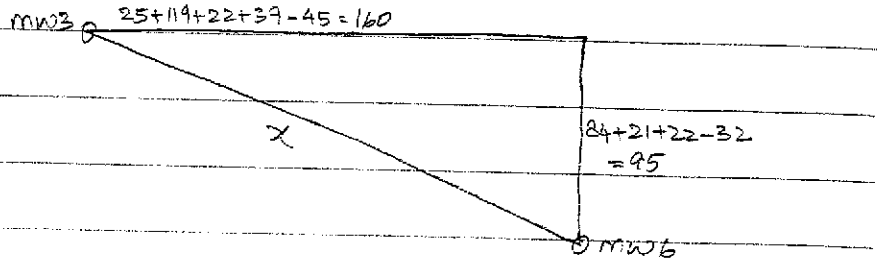
$= 52$ ft



MW3 to MW6

$x = \sqrt{160^2 + 95^2}$

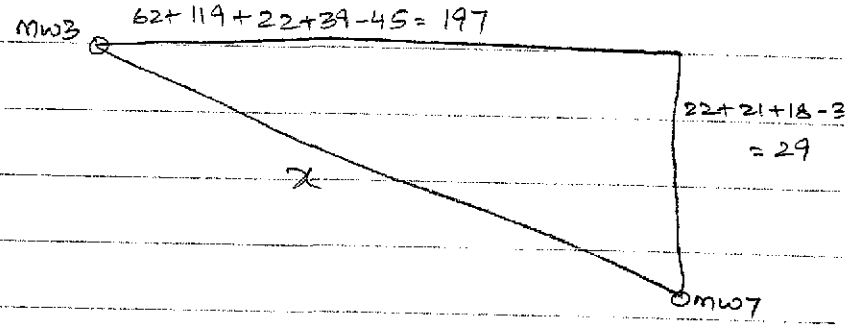
$= 186$



MW3 to MW7

$x = \sqrt{197^2 + 29^2}$

$= 199$



ETIC ENGINEERING

Appendix B

Laboratory Analytical Reports

SEVERN TRENT STL

Submission#: 2004-03-0978

ETIC Oakland

1333 Broadway, Suite 1015
Oakland, CA 94612

Attn.: Kathy Brandt

Project#: TMSFT.8AA
Project: Strough Family

April 07, 2004

RECEIVED
APR 15 2004
ETIC ENGINEERING

Kathy

Attached is our report for your samples received on 03/31/2004 15:08
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/15/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: dsharma@stl-inc.com

Sincerely,

Dimple Sharma
Project Manager

SEVERN TRENT STL

Submission #: 2004-03-0978

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW2	03/31/2004 05:40	Water	1
MW3	03/31/2004 05:45	Water	2
DPE KO	03/31/2004 00:30	Water	3
BAKER TANK	03/31/2004 06:00	Water	4

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 3510/8015M
Sample ID: **MW2**
Sampled: 03/31/2004 05:40
Matrix: Water

Test(s): 8015M
Lab ID: 2004-03-0978 - 1
Extracted: 4/1/2004 08:48
QC Batch#: 2004/04/01-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	18000	500	ug/L	10.00	04/03/2004 15:02	edr
Motor Oil	ND	5000	ug/L	10.00	04/03/2004 15:02	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	10.00	04/03/2004 15:02	sd

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 3510/8015M
Sample ID: **MW3**
Sampled: 03/31/2004 05:45
Matrix: Water

Test(s): 8015M
Lab ID: 2004-03-0978 - 2
Extracted: 4/1/2004 08:48
QC Batch#: 2004/04/01-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1900	50	ug/L	1.00	04/03/2004 21:41	edr
Motor Oil	ND	500	ug/L	1.00	04/03/2004 21:41	
Surrogate(s)						
o-Terphenyl	79.2	60-130	%	1.00	04/03/2004 21:41	

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 3510/8015M
Sample ID: **DPE KO**
Sampled: 03/31/2004 00:30
Matrix: Water

Test(s): 8015M
Lab ID: 2004-03-0978 - 3
Extracted: 4/1/2004 08:48
QC Batch#: 2004/04/01-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	5400	50	ug/L	1.00	04/02/2004 20:26	edr
Motor Oil	1500	500	ug/L	1.00	04/02/2004 20:26	
Surrogate(s)						
o-Terphenyl	84.0	60-130	%	1.00	04/02/2004 20:26	

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 3510/8015M
Sample ID: **BAKER TANK**
Sampled: 03/31/2004 06:00
Matrix: Water

Test(s): 8015M
Lab ID: 2004-03-0978 - 4
Extracted: 4/1/2004 08:48
QC Batch#: 2004/04/01-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	50	ug/L	1.00	04/02/2004 22:13	
Motor Oil	ND	500	ug/L	1.00	04/02/2004 22:13	
Surrogate(s)						
o-Terphenyl	82.9	60-130	%	1.00	04/02/2004 22:13	

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland

Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2004/04/01-04.10-001

Water

Test(s): 8015M
QC Batch # 2004/04/01-04.10
Date Extracted: 04/01/2004 08:48

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	04/01/2004 15:54	
Motor Oil	ND	500	ug/L	04/01/2004 15:54	
Surrogates(s)					
o-Terphenyl	84.7	60-130	%	04/01/2004 15:54	

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 3510/8015M

Test(s): 8015M

Laboratory Control Spike **Water** **QC Batch # 2004/04/01-04.10**

LCS 2004/04/01-04.10-002 Extracted: 04/01/2004 Analyzed: 04/01/2004 16:21
LCSD 2004/04/01-04.10-003 Extracted: 04/01/2004 Analyzed: 04/01/2004 16:47

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	867	853	1000	86.7	85.3	1.6	60-130	25		
Surrogates(s)										
o-Terphenyl	18.3	18.0	20.0	91.7	89.9		60-130	0		

Total Extractable Petroleum Hydrocarbons (TEPH)

ETIC Oakland

Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Legend and Notes

Result Flag

edr

Hydrocarbon reported is in the early Diesel range, and does not match our Diesel standard

sd

Surrogate recovery not reportable due to required dilution.

SEVERN TRENT STL

Submission #: 2004-03-0978

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW2	03/31/2004 05:40	Water	1
MW3	03/31/2004 05:45	Water	2
DPE KO	03/31/2004 00:30	Water	3
BAKER TANK	03/31/2004 06:00	Water	4

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 5030B
Test(s): 8260B
Sample ID: **MW2**
Lab ID: 2004-03-0978 - 1
Sampled: 03/31/2004 05:40
Extracted: 4/7/2004 00:19
Matrix: Water
QC Batch#: 2004/04/06-02.64
Analysis Flag: o (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	49000	2500	ug/L	50.00	04/07/2004 00:19	
Benzene	1700	25	ug/L	50.00	04/07/2004 00:19	
Toluene	9300	25	ug/L	50.00	04/07/2004 00:19	
Ethylbenzene	1700	25	ug/L	50.00	04/07/2004 00:19	
Total xylenes	16000	50	ug/L	50.00	04/07/2004 00:19	
Surrogate(s)						
1,2-Dichloroethane-d4	96.1	76-114	%	50.00	04/07/2004 00:19	
Toluene-d8	93.9	88-110	%	50.00	04/07/2004 00:19	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 5030B
Test(s): 8260B
Sample ID: **MW3**
Lab ID: 2004-03-0978 - 2
Sampled: 03/31/2004 05:45
Extracted: 4/7/2004 14:07
Matrix: Water
QC Batch#: 2004/04/07-01.64
Analysis Flag: o (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	10000	1000	ug/L	20.00	04/07/2004 14:07	
Benzene	880	10	ug/L	20.00	04/07/2004 14:07	
Toluene	2100	10	ug/L	20.00	04/07/2004 14:07	
Ethylbenzene	470	10	ug/L	20.00	04/07/2004 14:07	
Total xylenes	2800	20	ug/L	20.00	04/07/2004 14:07	
Surrogate(s)						
1,2-Dichloroethane-d4	96.3	76-114	%	20.00	04/07/2004 14:07	
Toluene-d8	93.6	88-110	%	20.00	04/07/2004 14:07	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 5030B
Test(s): 8260B
Sample ID: **DPE KO**
Lab ID: 2004-03-0978 - 3
Sampled: 03/31/2004 00:30
Extracted: 4/7/2004 14:29
Matrix: Water
QC Batch#: 2004/04/07-01.64
Analysis Flag: o (See Legend and Note Section)

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	37000	2500	ug/L	50.00	04/07/2004 14:29	
Benzene	2200	25	ug/L	50.00	04/07/2004 14:29	
Toluene	8300	25	ug/L	50.00	04/07/2004 14:29	
Ethylbenzene	1200	25	ug/L	50.00	04/07/2004 14:29	
Total xylenes	9500	50	ug/L	50.00	04/07/2004 14:29	
Surrogate(s)						
1,2-Dichloroethane-d4	98.1	76-114	%	50.00	04/07/2004 14:29	
Toluene-d8	95.7	88-110	%	50.00	04/07/2004 14:29	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**BAKER TANK**	Lab ID:	2004-03-0978 - 4
Sampled:	03/31/2004 06:00	Extracted:	4/7/2004 14:52
Matrix:	Water	QC Batch#:	2004/04/07-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/07/2004 14:52	
Benzene	ND	0.50	ug/L	1.00	04/07/2004 14:52	
Toluene	0.59	0.50	ug/L	1.00	04/07/2004 14:52	
Ethylbenzene	1.7	0.50	ug/L	1.00	04/07/2004 14:52	
Total xylenes	7.6	1.0	ug/L	1.00	04/07/2004 14:52	
Surrogate(s)						
1,2-Dichloroethane-d4	94.9	76-114	%	1.00	04/07/2004 14:52	
Toluene-d8	93.6	88-110	%	1.00	04/07/2004 14:52	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2004/04/06-02.64-012

Water

Test(s): 8260B
QC Batch # 2004/04/06-02.64
Date Extracted: 04/06/2004 18:12

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	04/06/2004 18:12	
Benzene	ND	0.5	ug/L	04/06/2004 18:12	
Toluene	ND	0.5	ug/L	04/06/2004 18:12	
Ethylbenzene	ND	0.5	ug/L	04/06/2004 18:12	
Total xylenes	ND	1.0	ug/L	04/06/2004 18:12	
Surrogates(s)					
1,2-Dichloroethane-d4	98.6	76-114	%	04/06/2004 18:12	
Toluene-d8	91.2	88-110	%	04/06/2004 18:12	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 5030B
Method Blank

Water

Test(s): 8260B
QC Batch # 2004/04/07-01.64

MB: 2004/04/07-01.64-028

Date Extracted: 04/07/2004 08:28

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	04/07/2004 08:28	
Benzene	ND	0.5	ug/L	04/07/2004 08:28	
Toluene	ND	0.5	ug/L	04/07/2004 08:28	
Ethylbenzene	ND	0.5	ug/L	04/07/2004 08:28	
Total xylenes	ND	1.0	ug/L	04/07/2004 08:28	
Surrogates(s)					
1,2-Dichloroethane-d4	93.4	76-114	%	04/07/2004 08:28	
Toluene-d8	92.6	88-110	%	04/07/2004 08:28	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/04/06-02.64**

LCS 2004/04/06-02.64-027 Extracted: 04/06/2004 Analyzed: 04/06/2004 17:27
LCSD 2004/04/06-02.64-049 Extracted: 04/06/2004 Analyzed: 04/06/2004 17:49

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	24.2	23.7	25.0	96.8	94.8	2.1	69-129	20		
Toluene	23.7	23.6	25.0	94.8	94.4	0.4	70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	459	471	500	91.8	94.2		76-114			
Toluene-d8	468	451	500	93.6	90.2		88-110			

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/04/07-01.64**

LCS 2004/04/07-01.64-043 Extracted: 04/07/2004 Analyzed: 04/07/2004 07:43
LCSD 2004/04/07-01.64-005 Extracted: 04/07/2004 Analyzed: 04/07/2004 08:05

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	23.1	22.6	25.0	92.4	90.4	2.2	69-129	20		
Toluene	22.9	23.1	25.0	91.6	92.4	0.9	70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	451	429	500	90.2	85.8		76-114			
Toluene-d8	479	470	500	95.8	94.0		88-110			

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8AA
Strough Family

Received: 03/31/2004 15:08

Legend and Notes

Analysis Flag

o

Reporting limits were raised due to high level of analyte present in the sample.

SEVERN TRENT STL

Submission#: 2004-04-0422

ETIC Oakland

1333 Broadway, Suite 1015
Oakland, CA 94612
Attn.: Kathy Brandt
Project#: TMSFT.8 AA
Project: Strough Family Trust

April 16, 2004

RECEIVED
APR 27 2004
ETIC ENGINEERING

Kathy

Attached is our report for your samples received on 04/14/2004 11:45
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/29/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: vvancil@stl-inc.com

Sincerely,

Vincent Vancil
Project Manager

SEVERN TRENT SERVICES

STL ChromaLab

Chain of Custody 2004-04-0422

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 484-1096
e-mail: info@chromalab.com

Reference #: 84808

Date 04/14/2004 Page 1 of 1

From

Proj.Mgr	Kathy Brandt
Company	ETIC Engineering
Address	1333 Broadway, Suite 1015 Oakland, CA 94612
Sampler (Signature)	
Phone (510) 208-1600	Fax/Email (510) 208-1604 snagulapaty@eticeng.com

Analysis Request

Sample ID	Date	Time	Mat rix	Pres erv	TPH (EPA 8015, 8020/8021) ☐ Gas w/ ☒ BTEX ☐ MTBE	Purgeable Aromatics BTEX (EPA 8020/8021)	TEPH (EPA 8015M) ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other	Fat Oil and Grease (5520B): ☐ DCA, EDB ☐ Full Oil and Grease List ☐ MTBE ☐ BTEX	Purgeable Halocarbons (HVOCs) (EPA 8010/8021)	Volatile Organics GC/MS (VOCs) (EPA 8260A/8260B)	Semivolatiles GC/MS (EPA 8270)	Oil and Grease ☐ Petroleum ☐ Total (EPA 1664)	Pesticides (EPA 8081) ☐ PCBs (EPA 8082) ☐ ☐	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other:	W.E.T (STLC) TCLP ☐ ☐	Hexavalent Chromium pH (24h hold time for H2O) ☐ ☐	Spec Cond. ☐ Alkalinity TSS ☐ TDS ☐ ☐	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
BAKER TANK 2	4/14/04	1150	W	HCl	X																					3

RUSH

Project Info.

Project Name: Strough Family Trust	
Project#: TMSFT.8 AA	
PO#: OAK 4037	
Credit Card#:	

TAT: Std 5 Day | 72h | 48h | 24h

Report: ☐ Routine ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Special Instructions / Comments:

Sample Receipt

# of Containers:	3
Head Space:	
Temp:	9.5
Conforms to record:	
Other	

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: [signature] Time: 1145	Signature: Time:	Signature: Time:
Printed Name: Doug Fitzgerald Date: 4/14/04	Printed Name: Date:	Printed Name: Date:
Company: ETIC	Company:	Company:

1) Received by:	2) Received by:	3) Received by:
Signature: [signature] Time: 1145	Signature: Time:	Signature: Time:
Printed Name: Hartford Date: 4/14/04	Printed Name: Date:	Printed Name: Date:
Company: STL-SF	Company:	Company:

Rev 09-01

SEVERN TRENT STL

Submission #: 2004-04-0422

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8 AA
Strough Family Trust

Received: 04/14/2004 11:45

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
BAKER TANK 2	04/14/2004 11:00	Water	1

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8 AA
Strough Family Trust

Received: 04/14/2004 11:45

Prep(s):	5030B	Test(s):	8260B
Sample ID:	**BAKER TANK 2**	Lab ID:	2004-04-0422 - 1
Sampled:	04/14/2004 11:00	Extracted:	4/16/2004 00:57
Matrix:	Water	QC Batch#:	2004/04/15-02.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Benzene	ND	0.50	ug/L	1.00	04/16/2004 00:57	
Toluene	ND	0.50	ug/L	1.00	04/16/2004 00:57	
Ethylbenzene	ND	0.50	ug/L	1.00	04/16/2004 00:57	
Total xylenes	ND	1.0	ug/L	1.00	04/16/2004 00:57	
Surrogate(s)						
1,2-Dichloroethane-d4	97.3	76-114	%	1.00	04/16/2004 00:57	
Toluene-d8	92.0	88-110	%	1.00	04/16/2004 00:57	

Fuel Oxygenates by 8260B

ETIC Oakland

Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8 AA
Strough Family Trust

Received: 04/14/2004 11:45

Batch QC Report

Prep(s): 5030B — Test(s): 8260B

Method Blank — **Water** — **QC Batch # 2004/04/15-02.64**

MB: 2004/04/15-02.64-012 — Date Extracted: 04/15/2004 18:12

Compound	Conc.	RL	Unit	Analyzed	Flag
Benzene	ND	0.5	ug/L	04/15/2004 18:12	
Toluene	ND	0.5	ug/L	04/15/2004 18:12	
Ethylbenzene	ND	0.5	ug/L	04/15/2004 18:12	
Total xylenes	ND	1.0	ug/L	04/15/2004 18:12	
Surrogates(s)					
1,2-Dichloroethane-d4	90.2	76-114	%	04/15/2004 18:12	
Toluene-d8	88.4	88-110	%	04/15/2004 18:12	

Fuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8 AA
Strough Family Trust

Received: 04/14/2004 11:45

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/04/15-02.64**

LCS 2004/04/15-02.64-027 Extracted: 04/15/2004 Analyzed: 04/15/2004 17:27
LCSD 2004/04/15-02.64-049 Extracted: 04/15/2004 Analyzed: 04/15/2004 17:49

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	22.6	23.4	25.0	90.4	93.6	3.5	69-129	20		
Toluene	21.7	22.9	25.0	86.8	91.6	5.4	70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	444	424	500	88.8	84.8		76-114			
Toluene-d8	450	453	500	90.0	90.6		88-110			

SEVERN TRENT SERVICES

STL ChromaLab

Chain of Custody 2004-04-0422

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 484-1096
e-mail: info@chromalab.com

Reference #: 84808

Date 04/14/2004 Page 1 of 1

From

Proj.Mgr	Kathy Brandt
Company	ETIC Engineering
Address	1333 Broadway, Suite 1015 Oakland. CA 94612
Sampler (Signature)	Doug Fitzgerald
Phone (510) 208-1600	Fax/Email (510) 208-1604 snagulapaty@eticeng.com

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH (EPA 8015, 8020/8021) ☐ Gas w/ ☒ BTEX ☐ MTBE	Purgeable Aromatics BTEX (EPA 3020/8021)	TEPH (EPA 8015M) ☐ Silica Gel ☐ Diesel ☐ Motor Oil ☐ Other ___	Fuel Oxygenates (8260B): ☐ DCA, EDB ☐ Full Oxygenate List ☐ MTBE ☐ BTEX	Purgeable Halocarbons (HVOCs) (EPA 8010/8021)	Volatile Organics GC/MS (VOCs) (EPA 8260A/8260B)	Semivolatiles GC/MS (EPA 8270)	Oil and Grease ☐ Petroleum ☐ Total (EPA 1664)	☐ Pesticides (EPA 8081) ☐ PCBs (EPA 8082)	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other: ___	☐ W.E.T (STLC) ☐ TCLP	Hexavalent Chromium ☐ pH (24h hold time for H_2O)	Spec Cond. ☐ Alkalinity ☐ TDS	Anions : ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4					Number of Containers
BAKER TANK 2	4/14/04	1160	W	HCl	X																						3

RUSH

Project Info.

Project Name: Strough Family Trust

Project#: TMSFT.8 AA

PO#: OAK 4037

Credit Card#:

Sample Receipt

of Containers: 3

Head Space:

Temp: 9.5

Conforms to record:

TAT: Std 5 Day | 72h | (48h) | 24h

Other

Report: ☐ Routine ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Special Instructions / Comments:

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: Doug Fitzgerald — Time: 1145	Signature — Time	Signature — Time
Printed Name: Doug Fitzgerald — Date: 4/14/04	Printed Name — Date	Printed Name — Date
Company: ETIC	Company	Company

1) Received by:	2) Received by:	3) Received by:
Signature: [illegible] — Time: 1145	Signature — Time	Signature — Time
Printed Name: Mitford — Date: 4/14/04	Printed Name — Date	Printed Name — Date
Company: STL-SF	Company	Company

Rev 05/01

SEVERN TRENT STL

STL San Francisco

Sample Receipt Checklist

Submission #:2004- 04 - 0422

Checklist completed by: (initials) MN Date: 04/14/04

Courier name: ☐ STL San Francisco ☒ Client _____

Custody seals intact on shipping container/samples	Yes___ No___	Not Present ✓
Chain of custody present?	Yes ✓ No___	
Chain of custody signed when relinquished and received?	Yes ✓ No___	
Chain of custody agrees with sample labels?	Yes ✓ No___	
Samples in proper container/bottle?	Yes ✓ No___	
Sample containers intact?	Yes ✓ No___	
Sufficient sample volume for indicated test?	Yes ✓ No___	
All samples received within holding time?	Yes ✓ No___	
Container/Temp Blank temperature in compliance (4^0 C ± 2)?	Temp: 9.4 °C Yes ✓ No___	
	Ice Present Yes ✓ No___	
Water - VOA vials have zero headspace?	No VOA vials submitted___ Yes ✓ No___	

(if bubble is present, refer to approximate bubble size and itemize in comments as S (small ~O), M (medium ~ O) or L (large ~ O)

Water - **pH acceptable upon receipt?** ☒ Yes ☐ No

☐ **pH adjusted**– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc **–Lot #(s)** _____

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments: < 4hr from sampling

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: ____/____/04

Client contacted: ☐ Yes ☐ No

Summary of discussion:

Corrective Action (per PM/Client):

SEVERN TRENT STL

Submission#: 2004-03-0973

ETIC Oakland

April 06, 2004

1333 Broadway, Suite 1015
Oakland, CA 94612

Attn.: Kathy Brandt

Project#: TMSFT.8.AA
Project: Strough Family

RECEIVED
APR 15 2004
ETIC ENGINEERING

Kathy

Attached is our report for your samples received on 03/31/2004 15:08
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 05/15/2004 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: ssidhu@stl-inc.com

Sincerely,

Surinder Sidhu

Surinder Sidhu
Project Manager

SEVERN TRENT STL

Submission #: 2004-03-0973

Gas/BTEXFuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8.AA
Strough Family

Received: 03/31/2004 15:08

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
COMB WELLS-1	03/30/2004 22:15	Air	1
COMB WELLS-2	03/31/2004 00:25	Air	2
EFF	03/31/2004 00:20	Air	3

Gas/BTEXFuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8.AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 5030B
Test(s): 8260B
Sample ID: **COMB WELLS-1**
Lab ID: 2004-03-0973 - 1
Sampled: 03/30/2004 22:15
Extracted: 4/2/2004 12:56
Matrix: Air
QC Batch#: 2004/04/02-1C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	7200	500	ug/L	10.00	04/02/2004 12:56	
Benzene	110	10	ug/L	10.00	04/02/2004 12:56	
Toluene	360	10	ug/L	10.00	04/02/2004 12:56	
Ethylbenzene	43	10	ug/L	10.00	04/02/2004 12:56	
Total xylenes	220	10	ug/L	10.00	04/02/2004 12:56	
Methyl tert-butyl ether (MTBE)	14	5.0	ug/L	10.00	04/02/2004 12:56	
Surrogate(s)						
1,2-Dichloroethane-d4	101.3	76-114	%	10.00	04/02/2004 12:56	
Toluene-d8	99.7	88-110	%	10.00	04/02/2004 12:56	

Gas/BTEXFuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

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Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8.AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 5030B
Test(s): 8260B
Sample ID: **COMB WELLS-2**
Lab ID: 2004-03-0973 - 2
Sampled: 03/31/2004 00:25
Extracted: 4/2/2004 12:34
Matrix: Air
QC Batch#: 2004/04/02-1C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	6400	500	ug/L	10.00	04/02/2004 12:34	
Benzene	98	10	ug/L	10.00	04/02/2004 12:34	
Toluene	340	10	ug/L	10.00	04/02/2004 12:34	
Ethylbenzene	45	10	ug/L	10.00	04/02/2004 12:34	
Total xylenes	240	10	ug/L	10.00	04/02/2004 12:34	
Methyl tert-butyl ether (MTBE)	12	5.0	ug/L	10.00	04/02/2004 12:34	
Surrogate(s)						
1,2-Dichloroethane-d4	99.7	76-114	%	10.00	04/02/2004 12:34	
Toluene-d8	99.6	88-110	%	10.00	04/02/2004 12:34	

Gas/BTEXFuel Oxygenates by 8260B

ETIC Oakland
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Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8.AA
Strough Family

Received: 03/31/2004 15:08

Prep(s): 5030B
Sample ID: **EFF**
Sampled: 03/31/2004 00:20
Matrix: Air

Test(s): 8260B
Lab ID: 2004-03-0973 - 3
Extracted: 4/2/2004 12:10
QC Batch#: 2004/04/02-1C.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	04/02/2004 12:10	
Benzene	ND	1.0	ug/L	1.00	04/02/2004 12:10	
Toluene	ND	1.0	ug/L	1.00	04/02/2004 12:10	
Ethylbenzene	ND	1.0	ug/L	1.00	04/02/2004 12:10	
Total xylenes	ND	1.0	ug/L	1.00	04/02/2004 12:10	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	04/02/2004 12:10	
Surrogate(s)						
1,2-Dichloroethane-d4	99.4	76-114	%	1.00	04/02/2004 12:10	
Toluene-d8	96.2	88-110	%	1.00	04/02/2004 12:10	

Gas/BTEXFuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

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Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8.AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2004/04/02-1C.65-033

Water

Test(s): 8260B
QC Batch # 2004/04/02-1C.65
Date Extracted: 04/02/2004 11:33

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	04/02/2004 11:33	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	04/02/2004 11:33	
Benzene	ND	0.5	ug/L	04/02/2004 11:33	
Toluene	ND	0.5	ug/L	04/02/2004 11:33	
Ethylbenzene	ND	0.5	ug/L	04/02/2004 11:33	
Total xylenes	ND	1.0	ug/L	04/02/2004 11:33	
Surrogates(s)					
1,2-Dichloroethane-d4	105.4	76-114	%	04/02/2004 11:33	
Toluene-d8	100.6	88-110	%	04/02/2004 11:33	

Gas/BTEXFuel Oxygenates by 8260B

ETIC Oakland
Attn.: Kathy Brandt

1333 Broadway, Suite 1015
Oakland, CA 94612
Phone: (510) 208-1600 Fax: (510) 208-1604

Project: TMSFT.8.AA
Strough Family

Received: 03/31/2004 15:08

Batch QC Report

Prep(s): 5030B

Test(s): 8260B

Laboratory Control Spike **Water** **QC Batch # 2004/04/02-1C.65**

LCS 2004/04/02-1C.65-046 Extracted: 04/02/2004 Analyzed: 04/02/2004 10:46
LCSD 2004/04/02-1C.65-009 Extracted: 04/02/2004 Analyzed: 04/02/2004 11:09

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Methyl tert-butyl ether (MTBE)	26.8	24.8	25	107.2	99.2	7.8	65-165	20		
Benzene	25.5	24.1	25	102.0	96.4	5.6	69-129	20		
Toluene	25.0	24.0	25	100.0	96.0	4.1	70-130	20		
Surrogates(s)										
1,2-Dichloroethane-d4	484	460	500	96.8	92.0		76-114			
Toluene-d8	501	508	500	100.2	101.6		88-110			

SEVERN TRENT SERVICES

STL ChromaLab

Chain of Custody

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 484-1096
Email: info@stlchromalab.com

2004-03-0173

Reference #: 84391

Date 03/30/2004 Page 1 of 1

From

Proj.Mgr	Kathy Brandt
Company	ETIC Engineering
Address	1333 Broadway, Suite 1015 Oakland, CA 94612
Sampler (Signature)	
Phone (510) 208-1600	Fax/Email (510) 208-1604 snagulapaty@eticeng.com

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH (EPA 8015, 8020/8021) ☒ Gas w/ ☒ BTEX ☒ MTBE	Purgeable Aromatics BTEX (EPA 8020/8021)	TEPH (EPA 8015M) ☐ Silica Gel ☒ Diesel ☐ Motor Oil ☐ Other	Fuel Oxygenates (8260B): ☒ DCA, EDB ☒ Full Oxygenate List ☐ MTBE ☐ BTEX	Purgeable Halocarbons (HVOCs) (EPA 8010/8021)	Volatile Organics GC/MS (VOCs) (EPA 8260A/8260B)	Semivolatiles GC/MS + PAHs (EPA 8270) See Attached	Oil and Grease ☐ Petroleum ☐ Total (EPA 1664)	☐ Pesticides (EPA 8081) ☐ PCBs (EPA 8082)	PNAs by ☒ 8270 ☒ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☒ Other: 13 priority pollutants-	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4	Fish Bioassay (Rainbow Trout) NPDES % survival No LC_{50}	Hardness	Cyanide	Methane, CO_2	Number of Containers
COMB WELLS – 1 ~~START~~	3/30/04	2215	Air	---	X																				1
COMB WELLS - 2 ~~END~~	3/31/04	0025	Air	---	X																				2
EFF	3/31/04	0020	AIR	—	X																				2

Project Info.

Project Name: Strough Family Trust	
Project#: TMSFT.8.AA	
PO#: OAK 4037	
Credit Card#:	

Sample Receipt

# of Containers:	
Head Space:	
Temp:	
Conforms to record:	

TAT: Std 5 Day | 72h | 48h | 24h | Other

Report: ☐ Routine ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD

Special Instructions / Comments:

1) Relinquished by:	2) Relinquished by:	3) Relinquished by:
Signature: 1430 Time	Signature: 1508 Time	Signature Time
Printed Name: 3/31/04 Date	Printed Name: 3/31/04 Date	Printed Name Date
Company: ETIC 3/31/04	Company	Company

1) Received by:	2) Received by:	3) Received by:
Signature: 1430 Time	Signature: 1508 Time	Signature Time
Printed Name: 3/31/04 Date	Printed Name: 3/31/04 Date	Printed Name Date
Company: STL	Company: STL-SF	Company

Rev 05/01

SEVERN TRENT STL

STL San Francisco

Sample Receipt Checklist

Submission #:2004- 03 - 0973

Checklist completed by: (initials) NK Date: 03/31/04

Courier name: ☐ STL San Francisco ☐ Client ABC

Custody seals intact on shipping container/samples	Yes___ No___	Not Present ✓
Chain of custody present?	Yes ✓ No___	
Chain of custody signed when relinquished and received?	Yes ✓ No___	
Chain of custody agrees with sample labels?	Yes ✓ No___	
Samples in proper container/bottle?	Yes ✓ No___	
Sample containers intact?	Yes ✓ No___	
Sufficient sample volume for indicated test?	Yes ✓ No___	
All samples received within holding time?	Yes ✓ No___	
Container/Temp Blank temperature in compliance (4^{o} C ± 2)?	Temp: 20.4 °C Yes ✓ No___	
	Ice Present Yes___ No ✓	
Water - VOA vials have zero headspace?	No VOA vials submitted ✓ Yes___ No___	

(if bubble is present, refer to approximate bubble size and itemize in comments as **S** (small ~O), **M** (medium ~ O) or **L** (large ~ O)

Water - **pH acceptable upon receipt?** ☐ Yes ☐ No NA

☐ **pH adjusted**– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc –**Lot #(s)** _____

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: ____/____/04

Client contacted: ☐ Yes ☐ No

Summary of discussion:

Corrective Action (per PM/Client):

ETIC ENGINEERING

June 25, 2004

Mr. Don Strough
Strough Family Trust of 1983
PO Box 489
Orinda, California 94563

Subject: **LETTER OF TRANSMITTAL**
Dual Phase Extraction Pilot Test Report and Interim Remedial Action Plan
Former Val Strough Chevrolet
Fuel Leak Case No. RO0000134
327 34th Street
Oakland, California

Dear Mr. Strough:

ETIC Engineering, Inc. is pleased to submit the enclosed copy of the *Dual Phase Extraction Pilot Test Report and Interim Remedial Action Plan* for the above-referenced site. We have distributed additional copies of the report as noted below.

ETIC appreciates the opportunity to provide the Strough Family Trust of 1983 with environmental consulting services. If you have any questions or comments, please contact me at (510) 208-1600, extension 11.

Sincerely,
ETIC Engineering, Inc.

Katherine Brandt

Katherine A. Brandt
Project Manager

Enclosure: Dual Phase Extraction Pilot Test Report and Interim Remedial Action Plan

Cc: Don Hwang, Alameda County Health Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, California 94502-6577
Jonathan Redding, Wendel Rosen Black and Dean, 1111 Broadway, 24th Floor, Oakland, California 94607
Project File

Transmittal Letter.doc