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2198 Sixth Street, Suite 201
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fax

to:	*Don Hwang – Alameda County Health – Hazardous Materials*
fax #:	*510-337-~~9355~~* 9335
from:	*Bruce Rucker*
date:	*12/23/03*
subject:	*240 W. MacArthur Boulevard, Oakland, CA*
pages:	*5 (including this cover page)*
NOTES:	*Don –* *I also sent this stuff by e-mail, so you can have a clean copy as well. Because of the brief nature of the amended workplan and because it is fully compliant with ACEH request, we expect that ACEH can formally approve the workplan by the end of the year. Please let me know if you have any questions.* *Best Regards,*

★ **Stellar Environmental Solutions, Inc.**
2198 Sixth Street, Berkeley, CA 94710
Tel: (510) 644-3123 • Fax: (510) 644-3859
Geoscience & Engineering Consulting

December 10, 2003

Mr. Don Hwang
Local Oversight Program
Environmental Health Services – Environmental Protection
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: Amended Workplan for Additional Site Characterization
Oakland Auto Works (Former Vogue Tyres) – 240 W. MacArthur Blvd., Oakland, CA
ACEH Fuel Leak Case No. R00000142

Dear Mr. Hwang:

Stellar Environmental Solutions, Inc. (SES) is submitting this workplan amendment to you in response to your letter of December 3, 2003 regarding your review of our August 20, 2003 workplan for the referenced site. This workplan amendment addresses all of the technical revisions requested in the Alameda County Environmental Health Care Services Agency (ACEH) requests for modification and/or clarification to the workplan. We trust that based on this response SES can more forward without delay to complete the characterization work. Unless specified otherwise, all other proposed elements of our original workplan are unchanged, and are incorporated by reference. Specific responses to the ACEH letter are presented below.

1) Site Characterization

The ACEH requested that the three originally-proposed boreholes to the east of the property be eliminated, and that additional boreholes be placed to the west and to the north of the former UFSTs. Our revised, proposed borehole locations are shown on the attached figure. We are proposing a total of 12 boreholes, focused on the north and west sides of the plume, and in the area of the former UFSTs.

2) Borehole Samples and Depths

Soil samples from all proposed boreholes will be collected for laboratory analysis at depth intervals of no more than 5 feet. We anticipate that boreholes will be advanced to a maximum depth of 25 feet, hence we anticipate collecting 5 soil samples per borehole. If no soil

contamination is evident by PID readings during drilling, soil samples will be collected at 5-foot intervals, or at significant lithologic changes, and/or at the depth just above first occurrence of groundwater. If soil contamination is evident by PID readings, the soil sample collected from laboratory analysis will be from the depth within that 5-foot interval that displays the maximum PID reading. Soil samples will not be collected for laboratory analysis from the saturated zone, which will be characterized by grab-groundwater sampling in the boreholes), however soil samples will be collected from the anticipated lower non-water-bearing unit below the upper aquifer, to evaluate the vertical extent of contamination. Soil sampling protocols are discussed in detail in the original workplan.

3) Preferential Pathway Survey

The ACEH December 3, 2003 letter requests no additional information regarding the utility survey relative to the original ACEH request for workplan.

The ACEH has requested that the water well survey include all water wells (not just water supply wells). The letter does not specify specifically whether this is to include groundwater monitoring wells. It is our professional experience that the objective of this task is to identify potential sensitive receptors, which would not include groundwater monitoring wells. Our previously-conducted well survey, through California DWR, included identifying all water supply wells (which DWR defines as irrigation, domestic, municipal and industrial). We assume that this satisfies the ACEH objective, and will conduct a new DWR survey request to include groundwater monitoring wells only if ACEH specifically requests that this be done.

4) Geologic Cross-Sections

Per ACEH request, attached is the amended site plan showing the site cross-section locations. The cross-sections for the Soil and Water Investigation Report will be amended to include the findings of the proposed investigation, including soil and groundwater analytical results and utility conduits. The cross-sections will be used in the Report to evaluate the probability of the plume encountering preferential pathways.

5) MTBE

SES will complete an evaluation of the distribution of MTBE (including potential offsite sources and migration). This will include an extended geologic cross-section(s) which will incorporate

data (analytical results, utility conduits, well screens, etc.). The findings will be discussed in the Soil and Water Investigation Report.

6) Professional Seal

All technical reports/workplans will be signed by a California Registered Geologist.

Technical Reports

The following technical reports will be submitted to ACEH.

- ***Amended Workplan*** (this document).
- ***Fourth Quarter 2003 Groundwater Monitoring Progress Report.*** This report will be submitted by January 31, 2004.
- ***Soil and Water Investigation Report.*** This report will be submitted within 60 days following ACEH approval of this amended workplan..
- ***First Quarter 2004 Groundwater Monitoring Progress Report.*** This report will be submitted by April 30, 2004.
- ***Second Quarter 2004 Groundwater Monitoring Progress Report.*** This report will be submitted by July 31, 2004.
- ***Third Quarter 2004 Groundwater Monitoring Progress Report.*** This report will be submitted by October 31, 2004.

We trust that this submittal meets your agency's needs. In so much as this workplan amendment provides you with all the requested elements and/or clarifications, we request your expedited approval so that we can move forward with project this month. Your quick response is greatly appreciated. Please contact the undersigned directly if you have any questions.

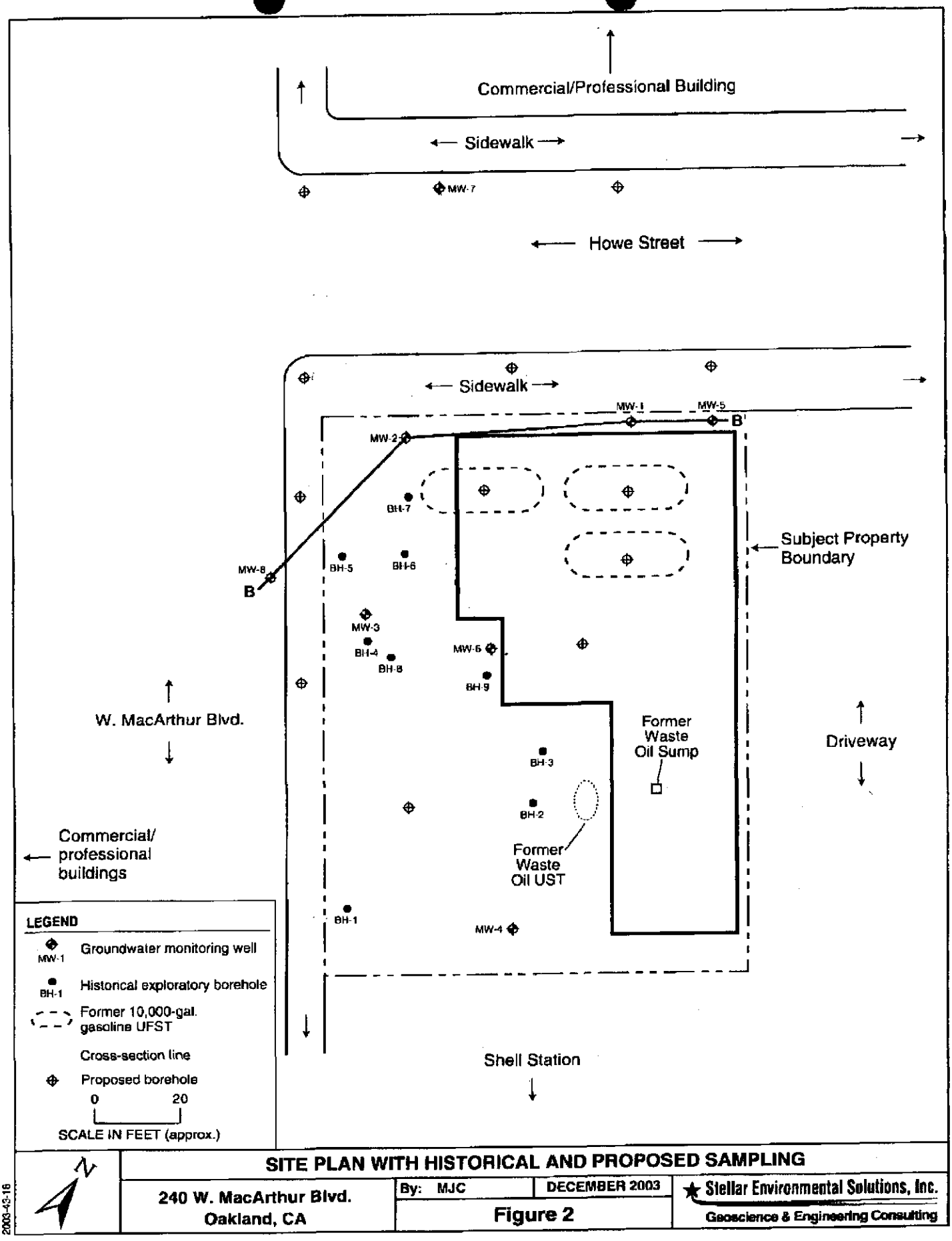
Sincerely,

Bruce M. Rucker, R.G., R.E.A.
Project Manager

Richard S. Makdisi, R.G., R.E.A.
Principal

REGISTERED GEOLOGIST
BRUCE M. RUCKER
No. 6814
Exp. Sept '04
STATE OF CALIFORNIA

Attachments: Revised Site Plan with cross-section locations and proposed borehole locations



SITE PLAN WITH HISTORICAL AND PROPOSED SAMPLING

240 W. MacArthur Blvd.
Oakland, CA

By: MJC | DECEMBER 2003

Figure 2

Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2003-43-16

STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201, BERKELEY, CA 94710
TEL: 510.644.3123 FAX: 510.644.3859

TRANSMITTAL MEMORANDUM		
TO: LOCAL OVERSIGHT PROGRAM ENVIRONMENTAL HEALTH SERVICES ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY 1131 HARBOR BAY PARKWAY ALAMEDA, CALIFORNIA 94502-6577		DATE: AUGUST 19, 2003
ATTENTION: DON HWANG		FILE: SES 2003-43
SUBJECT: OAKLAND AUTO WORKS 240 W. MACARTHUR BLVD OAKLAND, CALIFORNIA ACEH FUEL LEAK CASE NO. R00000142		
WE ARE SENDING:	☐ HEREWITH	☐ UNDER SEPARATE COVER
	☐ VIA MAIL	☐ VIA
THE FOLLOWING:	WORKPLAN FOR ADDITIONAL SITE CHARACTERIZATION (1 COPY)	
	☐ AS REQUESTED	☐ FOR YOUR APPROVAL
	☐ FOR REVIEW	☐ FOR YOUR USE
	☐ FOR SIGNATURE	☐ FOR YOUR FILES
COPY TO: MR. GLEN POY-WING OAKLAND AUTO WORKS 240 WEST MCARTHUR BLVD. OAKLAND, CA 94711		BY: JOE DINAN

★ **Stellar Environmental Solutions, Inc.**
2198 Sixth Street, Berkeley, CA 94710
Tel: (510) 644-3123 • Fax: (510) 644-3859
Geoscience & Engineering Consulting

August 20, 2003

Mr. Don Hwang
Local Oversight Program
Environmental Health Services – Environmental Protection
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: Workplan for Additional Site Characterization
Oakland Auto Works (Former Vogue Tyres) – 240 W. MacArthur Blvd., Oakland, CA
ACEH Fuel Leak Case No. R00000142

Dear Mr. Hwang:

INTRODUCTION AND BACKGROUND

On behalf of the property owners (Glen Poy-Wing and his wife), Stellar Environmental Solutions, Inc. (SES) is submitting to the Alameda County Environmental Health Care Services Agency (ACEH) this workplan for additional site characterization at the referenced site. Figure 1 shows the site location. This workplan is being submitted in response to the ACEH letter dated April 16, 2003. The property owners recently submitted to ACEH a letter of their intention to fully comply with the ACEH requirements, and provided an estimated schedule for the proposed tasks.

Previous environmental remediation and investigations associated with former underground fuel storage tanks (UFSTs) and a waste oil underground storage tank (UFST) have been conducted at the site since 1991. All known UFSTs have been removed, and there are currently eight site groundwater monitoring wells. In 2002, the current property owners purchased the property and become solely responsible for the remaining site environmental issues. SES was recently retained to replace the owners' existing environmental contractor.

PREVIOUS ENVIRONMENTAL ACTIVITIES

This section summarizes previous environmental remediation and site characterization activities, based on documentation provided by the current property owners as well as in ACEH files. A detailed discussion of the magnitude and extent of residual soil and groundwater contamination

is presented in a subsequent section of this report, and a tabular summary of historical soil and groundwater samples is included as Attachment A. Figure 2 shows the site plan with historical borehole and current groundwater well locations.

Historical remediation and site characterization activities include:

- Three 10,000-gallon gasoline UFSTs from a former Gulf service station occupancy were removed prior to 1991 (there is no available documentation regarding their removals).
- A waste oil sump was removed in 1991. Limited overexcavation was conducted, and there was no evidence of residual contamination with the exception of 360 mg/kg of petroleum oil & grease.
- A 350-gallon waste oil UFST was removed in 1996. Elevated levels of diesel and oil & grease were detected in confirmation samples. Subsequent overexcavation was conducted, and there was no evidence of residual contamination.
- In accordance with a request by ACDEH, a subsurface investigation was conducted in January 1997. Six exploratory boreholes were advanced to a maximum depth of 20 feet and soil samples were collected.
- Additional site characterization (three boreholes sampled and four monitoring wells installed) was performed later in 1997 and well location were selected.
- Groundwater sampling of four onsite wells installed was conducted in March 1998, July 1998, October 1998, and January 1999.
- Four additional groundwater monitoring wells were installed in February 2001.
- Short-term (less than 1 day) groundwater and vapor extraction from wells was conducted in October 2001.

A total of 19 groundwater monitoring/sampling events have been conducted in available site wells between August 1997 and March 2003 (the most recent event).

SITE CHEMICALS OF CONCERN

Waste Oil Sump and UFST

Soil samples collected during the waste oil sump and waste oil UFST removals (1991 through 1997) and in the first phase of boreholes were analyzed for the following (not all samples analyzed by all methods):

- Gasoline-range (TPHg) and diesel-range (TPHd) petroleum hydrocarbons;
- Petroleum oil & grease;
- Volatile organic compounds (VOCs);
- Semi-volatile organic compounds (SVOCs) or polynuclear aromatics (PNAs); and
- Metals.

As summarized in attached Tables 1 and 2 (attached), the only contaminants detected in residual (not excavated) soil near the waste oil UFST was oil & grease (at 360 mg/kg). This is well below the Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) of 1,000 mg/kg. As summarized in Table 6, neither oil & grease nor PNAs were detected in the "grab" groundwater sample from BH-2, adjacent to the former waste oil UFST. The data indicate that none of the waste oil-related contaminants should be considered site chemicals of concern.

UFST Investigations

Soil and groundwater samples collected since 1997 (in investigation of the former gasoline UFSTs) have been analyzed for the following (not all samples analyzed by all methods):

- TPHg and TPHd;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl *tertiary*-butyl ether (MTBE);
- VOCs (including fuel oxygenates); and
- Lead.

As summarized in Tables 2 and 3, contaminants detected in residual (not excavated) soils and/or groundwater at concentrations above ESLs include gasoline, diesel, BTEX, and MTBE. Metals (including lead) concentrations have all been below hazardous waste criteria and ESLs.

As summarized in Tables 4 and 5, the same contaminants detected in residual soils are present in groundwater at concentrations above ESLs.

As discussed later in this workplan, the ACEH has specified that all future groundwater monitoring samples be analyzed for gasoline, BTEX, and MTBE. Diesel is also to be analyzed in selected wells. Two fuel-related lead scavengers [ethylene dibromide (EDB) and ethylene dichloride (EDC)] are to be analyzed once to determine if they are site chemicals of concern.

TECHNICAL OBJECTIVES AND PROPOSED SCOPE OF WORK

The objective of the proposed work is to satisfy ACEH requirements as stipulated in the April 16, 2003 ACEH letter. In general, the ACEH is requesting additional site characterization and development of a contaminant conceptual model, to evaluate whether additional investigative work (i.e., more wells and/or more groundwater monitoring) is required or whether the findings will support case closure.

The scope of work proposed herein is presented below in the numerical order of the ACEH letter items. As requested by ACEH, this workplan presents specific technical data/documentation to support the workplan, including: geologic cross-sections; soil and groundwater analytical results; location of known utility conduits; site monitoring well screen intervals; and our technical rationale for proposed sampling locations.

As will be discussed in more detail in our proposed Soil and Water Investigation Report, we are comparing groundwater contaminant concentrations to the San Francisco Bay Region RWQCB ESLs for soil and groundwater (from commercial/industrial sites where groundwater is a potential drinking water source). While these are not cleanup goals, they establish threshold concentrations below which further investigation/remediation would not be warranted. Actual site-specific case closure criteria should be determined following collection and evaluation of the proposed characterization data.

SITE HYDROGEOLOGY AND WELL CONSTRUCTION

Figure 3 shows two geologic cross-sections through the area of historical investigations, based on historical geologic logging data. SES proposes to refine and/or supplement those cross-sections using data generated in the proposed investigation. Boreholes have been advanced to a maximum depth of 22 feet below grade. In summary, site lithology is fairly consistent across the site. Lower-permeability soils (clays, silts, and silty sand) occur between ground surface and depths of approximately 15 to 18 feet. Locally occurring thin lenses of higher-permeability soils (sand and gravel) have also been encountered in this depth interval. The upper zone is underlain by a laterally-continuous sand/gravel zone, the top of which is encountered at approximately 15 to 18 feet deep. In all site boreholes for which data were available, groundwater was encountered at or just below the top of this zone. The depth to the bottom of this upper water-bearing zone has not been determined.

Figures 4, 5, and 6 show gasoline, benzene, and MTBE isoconcentration contours, respectively, along with historical groundwater flow direction. As summarized in Table 7, equilibrated water

levels (in wells) have been measured at depths of approximately 12.5 feet to 15.5 feet, indicating that groundwater occurs under slightly confining conditions. The number and positioning of existing site wells is adequate to evaluate the general groundwater flow direction. As summarized in Table 7 (and shown in Figure 4), historical groundwater flow direction (since 1997) has been measured as ranging from northwest to N80W. The groundwater gradient has been measured to be relatively flat, ranging from approximately 0.003 feet/foot to approximately 0.008 feet/foot. At an adjacent site (230 W. MacArthur Boulevard), historical groundwater monitoring has demonstrated a west-northwest groundwater flow direction.

Table 8 summarizes well depth and screened intervals of existing groundwater monitoring wells. All wells are 4-inch-diameter PVC. Well screened intervals are either 5 feet long (one well) or 10 feet long (seven wells). Screened intervals ranges vary from approximately 20 to 25 feet deep (one well), approximately 15 to 25 feet (three wells) and 9 to 19 feet deep (four wells). In all cases, the top of the well screen is above the water table depth (i.e., the potentiometric surface is not above the top of the well screens). This is appropriate well construction to monitor dissolved petroleum hydrocarbons in groundwater, and would also be appropriate if separate-phase petroleum product was present (that has never been documented at the site).

POTENTIAL PREFERENTIAL PATHWAYS FOR CONTAMINANT MIGRATION

Onsite underground utilities include those typical of a small commercial development. Electrical, natural gas, and water service branch off the main service lines at sidewalk vaults. Underground piping convey these services from the sidewalk onto the property at a depth no greater than 3 feet (well above any documented soil or groundwater contamination). The depth to the base of the main service lines in the adjacent sidewalks/streets) is not known. As discussed below (Item 3), this workplan proposes to collect additional information on potential preferential pathways (i.e., utility conduits and further assessment of potential vertical pathways).

PROPOSED ADDITIONAL SITE CHARACTERIZATION ACTIVITIES

Figures 4, 5, and 6 present the hydrochemical data for the site contaminants of concern using the most recent (March 2003) groundwater analytical data for gasoline, benzene, and MTBE, respectively. Each figure shows the locations of the proposed boreholes associated with this workplan. For each groundwater contaminant, the isoconcentration contours were selected based on that contaminant's RWQCB ESL (lowest value contour), with each higher value contour

increasing by 1 order of magnitude. For example, the RWQCB ESL for benzene is 1.0 µg/L. Therefore, we present isoconcentration contours of 1, 10, and 100 µg/L.

Item 1 – Site Characterization

The lateral limits of the groundwater contaminant plume above ESL criteria have not been fully defined to the west, north, and east of the former source area (for gasoline and benzene). The lateral limits of MTBE groundwater contamination is well defined by existing data. In addition, the vertical extent of the contaminant plume has not been well defined (i.e., the depth to the bottom of the upper water-bearing zone and the top of the inferred lower confining layer). At this time, ACEH is not requiring additional groundwater monitoring wells, but is requesting exploratory borehole sampling. Those data will then be used to determine if (and where) additional groundwater wells should be installed.

As shown on Figures 4 through 6, we propose to advance approximately six exploratory boreholes surrounding the former UFSTs. These boreholes will provide additional data on the plume extent in those directions, with the specific objective of defining the limits of groundwater contamination above RWQCB ESLs. Depending on the findings, additional (more distal) boreholes may be necessary to fully define the lateral extent of contamination, which would be addressed in a subsequent phase of work. Each borehole will be advanced to first occurrence of groundwater (likely less than 15 feet deep). In each borehole, one soil sample will be collected for laboratory analysis from the unsaturated zone (either where contamination is most evident or at the capillary fringe). One "grab" groundwater sample will be collected from each borehole, immediately upon reaching a depth that yields groundwater sufficient to allow sampling from the borehole. Each borehole will then be deepened to a depth at least 3 feet below the bottom of the higher-permeability upper water-bearing zone (i.e., 3 feet into the lower-permeability zone that likely underlies the water-bearing zone and acts as a vertical confining layer). One soil sample will be collected from that zone for laboratory analysis.

Attachment A contains our proposed methods and protocols for exploratory borehole drilling and sampling.

Item 2 – Source Characterization

No analytical data are available regarding source area (former gasoline UFSTs) soil contamination, other than exploratory boreholes drilled on two sides of the former UFST area (to the north and west). Determining the magnitude and types of residual soil contamination at the

source area is important for evaluating potential long-term contribution of contamination from soil to groundwater.

As shown on Figures 4 through 6, we propose to install approximately four exploratory boreholes in and around the locations of the former UFSTs. One borehole will be advanced through the inferred center of each of the three former gasoline UFSTs, and one borehole will be advanced immediately adjacent to the south of the former UFSTs. Sampling from the proposed plus existing boreholes will provide analytical borehole data from all sides of (as well as through) the former UFSTs.

Each borehole will be advanced through the UFST excavation backfill material and into native soil. If the native soil layer is above the groundwater table, one soil sample will be collected from that depth (top of native soil) for laboratory analysis. One "grab" groundwater sample will be collected from each borehole, immediately upon reaching a depth that yields groundwater sufficient to allow sampling from the borehole. Each borehole will then be deepened to a depth at least 3 feet below the bottom of the higher-permeability upper water-bearing zone (i.e., 3 feet into the lower-permeability zone that likely underlies the water-bearing zone and acts as a vertical confining layer). One soil sample will be collected from that zone for laboratory analysis.

Item 3 – Preferential Pathway Survey

Utility Survey

The ACEH has requested that an underground utility survey be conducted to evaluate the potential for preferential horizontal/vertical contaminant migration pathways. As part of pre-drilling planning, we will contact Underground Service Alert of California (USA), which will notify all known utility providers in the area; the utility providers will then be responsible for marking the locations of underground utilities servicing the property. We will also retain a private utility locating firm to confirm those utilities, including the onsite portions which may or may not be identified by USA. Please note that the exact locations and depths of nearby offsite underground utilities (i.e., main service lines) may not be fully delineated by the USA notification or the private utility locator. We will attempt to obtain said information directly from the utility providers, but cannot predict in advance if the information will be available.

Well Survey

The ACEH has requested that a survey be conducted to identify "wells" within ¼ mile of the subject property. While the type of wells to be identified are not delineated (i.e., water supply

vs. groundwater monitoring), we assume that ACEH's reference to water supply wells are those considered potential receptors for site-sourced groundwater contamination. We will make a formal well survey request to the California Department of Water Resources (DWR), the agency ultimately responsible for permitting water supply wells. DWR generally provides a list of identified wells (which may or may not contain well construction details) and a figure showing the well locations. We will then review the available information and evaluate the likelihood of impacts to any of the identified wells by the site contamination.

Items 4 and 9 – Laboratory Analyses

A California-certified (ELAP) analytical laboratory will complete all laboratory analyses. The ACEH has requested, and the proposed program for future groundwater monitoring will include, the following revisions:

- For all site wells except MW-4 and MW-7, add total extractable hydrocarbons – diesel range (TEHd) by modified EPA Method 8015 (Item 4). While not specified in the ACEH letter, we propose to also analyze all proposed exploratory borehole soil and groundwater samples for TEHd.
- For all site wells in the next groundwater monitoring event (and in the proposed source area soil samples), add analysis for the lead scavengers EDB and EDC. If warranted by the findings, SES will recommend revising the ongoing groundwater monitoring program to include those compounds.

All soil and groundwater samples will continue to be analyzed for TPHg, BTEX, and MTBE.

Item 5 – MTBE

Our review of the available data indicates the following regarding the fuel oxygenate MTBE:

- Onsite usage of gasoline likely ended before MTBE was widely used in retail gasoline supplies;
- MTBE has never been detected in site soil samples;
- MTBE has been detected at elevated concentrations in site groundwater monitoring samples; and
- The adjacent (upgradient) Shell service station has a petroleum release that includes MTBE, and may be the source of the subject property MTBE contamination in groundwater.

In accordance with the ACEH request, SES will conduct a critical evaluation of the likely source(s) and distribution of site MTBE contamination. This evaluation will focus on:

- MTBE concentrations in source area soils;
- Distribution of MTBE in site groundwater samples; and
- The distribution of MTBE in groundwater samples at the adjacent Shell site, and the likelihood that this a source of the MTBE contamination.

All proposed exploratory borehole soil and groundwater samples and continued groundwater monitoring well water samples will be analyzed for MTBE.

Items 6 and 8 – Historical Groundwater Depths and Hydraulic Gradient

As requested by ACEH, all future reports will include a tabular summary of historical groundwater depths (which we infer to mean depth to water in wells). Our future reports will also include (on the figure showing current water level elevations and groundwater flow direction) a "rose diagram" showing cumulative historical groundwater flow direction. Not all historical data on groundwater flow direction and depths were available to SES at the time of this workplan submittal, and we have requested these data from the previous consultant. The workplan figures therefore show only the historical range of groundwater flow direction.

Item 7 – Confining Clay Layer

The ACEH has requested that an inferred (by the previous consultant) confining clay layer be evaluated in the current investigation. As discussed previously, SES will geologically log all proposed boreholes, create revised geologic cross-sections, and evaluate the data in the context of contaminant distribution and transport mechanisms.

Technical Reports

The ACEH letter contains a reference (in Item 3) to a "Soil and Water Investigation Report"; however, that report is not listed in the "Technical Reports" section of the letter. We propose the following reporting program for future site work, presented in chronological order.

- ***Second Quarter 2003 Groundwater Monitoring Progress Report.*** This report will not be prepared as no groundwater monitoring was conducted in this period.
- ***Third Quarter 2003 Groundwater Monitoring Progress Report.*** This report will be submitted in September 2003, following the proposed August 2003 groundwater

monitoring event, and will focus on the methods and findings of the current groundwater monitoring event.

- ***Soil and Water Investigation Report.*** This report will summarize the methods and findings of the work proposed herein (site characterization, source characterization, and preferential pathway assessment), and will be submitted within approximately 2 months following ACEH approval of this workplan.
- ***Continued Groundwater Monitoring Progress Reports.*** One progress report will be submitted following each subsequent quarterly groundwater monitoring event. At such time as the data warrant (likely within approximately 1 year following completion of the proposed site characterization work), SES will prepare a closure assessment report evaluating current conditions and historical trends with regard to the magnitude and extent of residual contamination and the stability of the contaminant plume.

The entire project will be overseen by and all technical reports/workplans will be signed by a California Registered Geologist.

Other Scope of Work Considerations

Groundwater Monitoring

The ACEH letter makes various references to continued groundwater monitoring/sampling/ reporting, and we assume that ACEH is requesting ongoing quarterly groundwater monitoring/ sampling/reporting. The most recent groundwater monitoring event was conducted in March 2003 (First Quarter 2003). No groundwater monitoring was conducted in Second Quarter 2003 (the property owners were in the process of changing consultants). The next groundwater monitoring event will be conducted in August 2003 (Third Quarter 2003). We propose to continue quarterly groundwater monitoring until groundwater monitoring cessation or frequency reduction is approved by ACEH.

Historical groundwater monitoring/sampling events have utilized a "no-purge" sampling approach (i.e., wells are not purged, but rather "grab" groundwater samples are collected with a bailer). There is no available documentation regarding ACEH approval of this method; however, we assume ACEH's tacit approval because it has not requested a change in sampling protocols over the course of receiving several reports that outline the procedure. The "grab" method has been approved by the RWQCB San Francisco Bay Region in its technical guidance "Utilization of Non-Purge Approach for Sampling of Monitoring Wells Impacted by Petroleum Hydrocarbons, BTEX, and MTBE" (dated January 31, 1997). The guidance stipulates that

certain criteria should be met: unconfined aquifer, no separate-phase petroleum product, well screened across the water table, etc. As part of the proposed work, we will evaluate site conditions with regard to these criteria, and make a recommendation as to whether future groundwater monitoring protocols should be revised to incorporate well purging. For the upcoming (Third Quarter 2003) groundwater monitoring event—which will likely be conducted before ACEH responds to this workplan—we will utilize the historically-conducted "no purge" method for sampling.

Well Elevation Surveying

Site groundwater monitoring wells have not been surveyed by a licensed land surveyor, nor have surveyed well location/elevation data been uploaded to the State Water Resources Control Board's "GeoTracker" database, as required by State regulations passed in 2001. Groundwater elevations (and gradient) information presented in previous groundwater monitoring reports have been relative elevations, as determined by the transit surveying of a Registered Geologist. While this level of accuracy may be sufficient to evaluate general groundwater flow direction, it is not in compliance with GeoTracker requirements. Therefore, we propose to have the wells (location and elevation) surveyed by a licensed land surveyor, in accordance with GeoTracker requirements.

GeoTracker EDF Uploads

As discussed above, the proposed well survey will be uploaded to the GeoTracker database. We will also upload "field point names" (i.e., well names), and all future groundwater monitoring well groundwater analytical data will be uploaded to the GeoTracker database in an electronic data format (EDF).

ESTIMATED SCHEDULE

The next groundwater monitoring event (Third Quarter 2003) will be conducted in August 2003. The progress report will be submitted in September 2003.

The other proposed elements (exploratory borehole drilling, preferential pathway/well assessment, and completion of the Soil and Water Investigation Report) will likely be completed within 2 months following ACEH approval of this workplan.

Continued groundwater monitoring will be conducted on a quarterly basis (likely to be November, February, May, and August), and quarterly progress reports will be submitted in the month following each monitoring event.

TEAM QUALIFICATIONS

Stellar Environmental Solutions, Inc. has completed dozens of similar projects, including several under the jurisdiction of ACEH. Our team will consist of the following:

- Stellar Environmental Solutions, Inc. (owners' consultant responsible for overall project coordination, geologic evaluation, sampling, data evaluation, and report certification by a California Registered Geologist);
- Borehole installation driller with a current C-57 license;
- Analytical laboratory with a current California ELAP certification; and
- Private utility locator with appropriate equipment and trained personnel.

We trust that this submittal meets your agency's needs. We request that ACEH provide to SES and the property owners written approval of this workplan. Please contact the undersigned directly if you have any questions.

Sincerely,

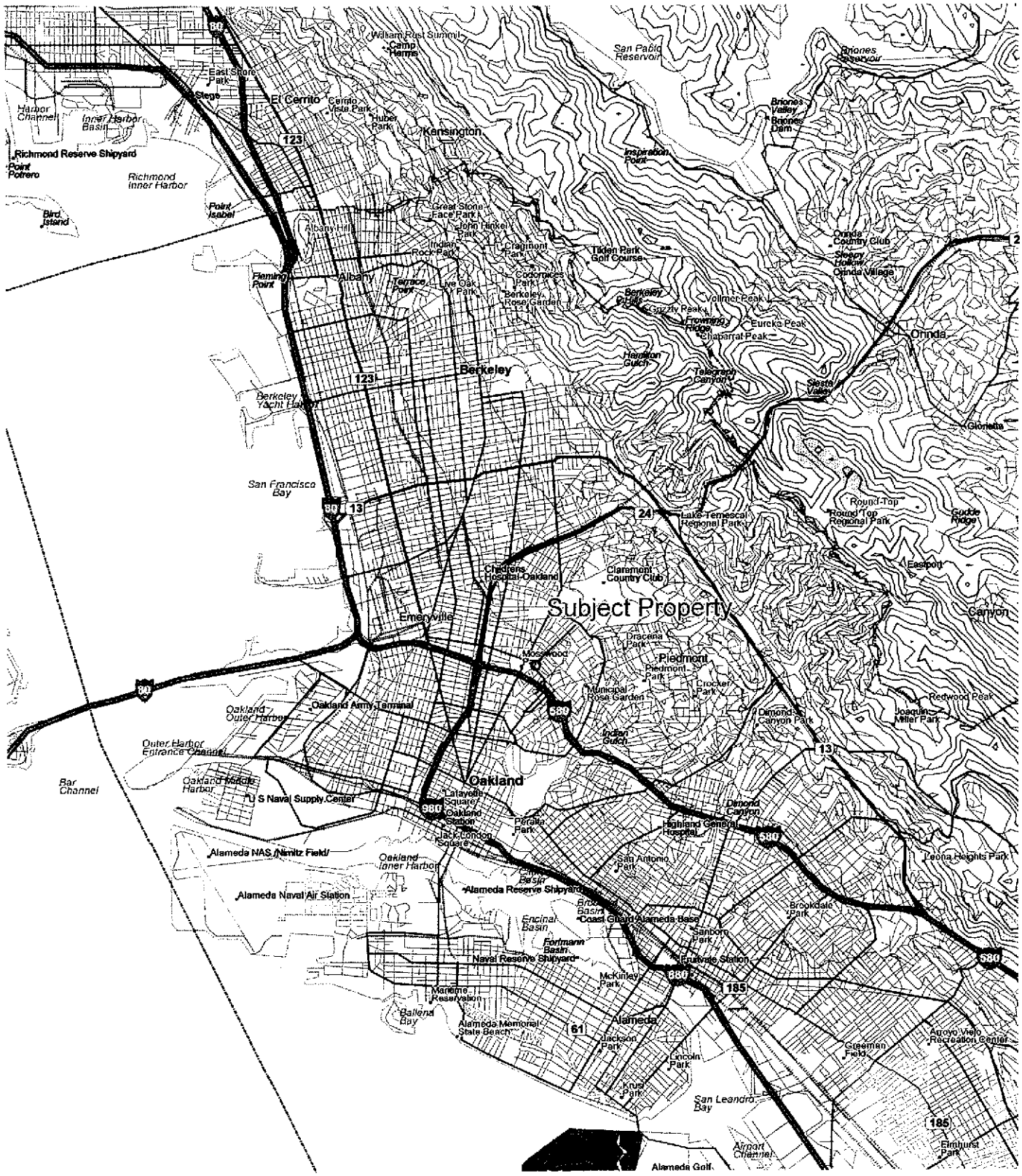
Bruce M. Rucker, R.G., R.E.A.
Project Manager

Richard S. Makdisi, R.G., R.E.A.
Principal

Attachments: Location Map and Site Plan with Proposed Borehole Locations
Tables 1 and 2 (Historical Analytical Results)
Drilling & Sampling Methods and Protocols

cc: Mr. Glen Poy-Wing (Property Owner)

FIGURES



N

SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP

240 W. MacArthur Blvd.
Oakland, CA

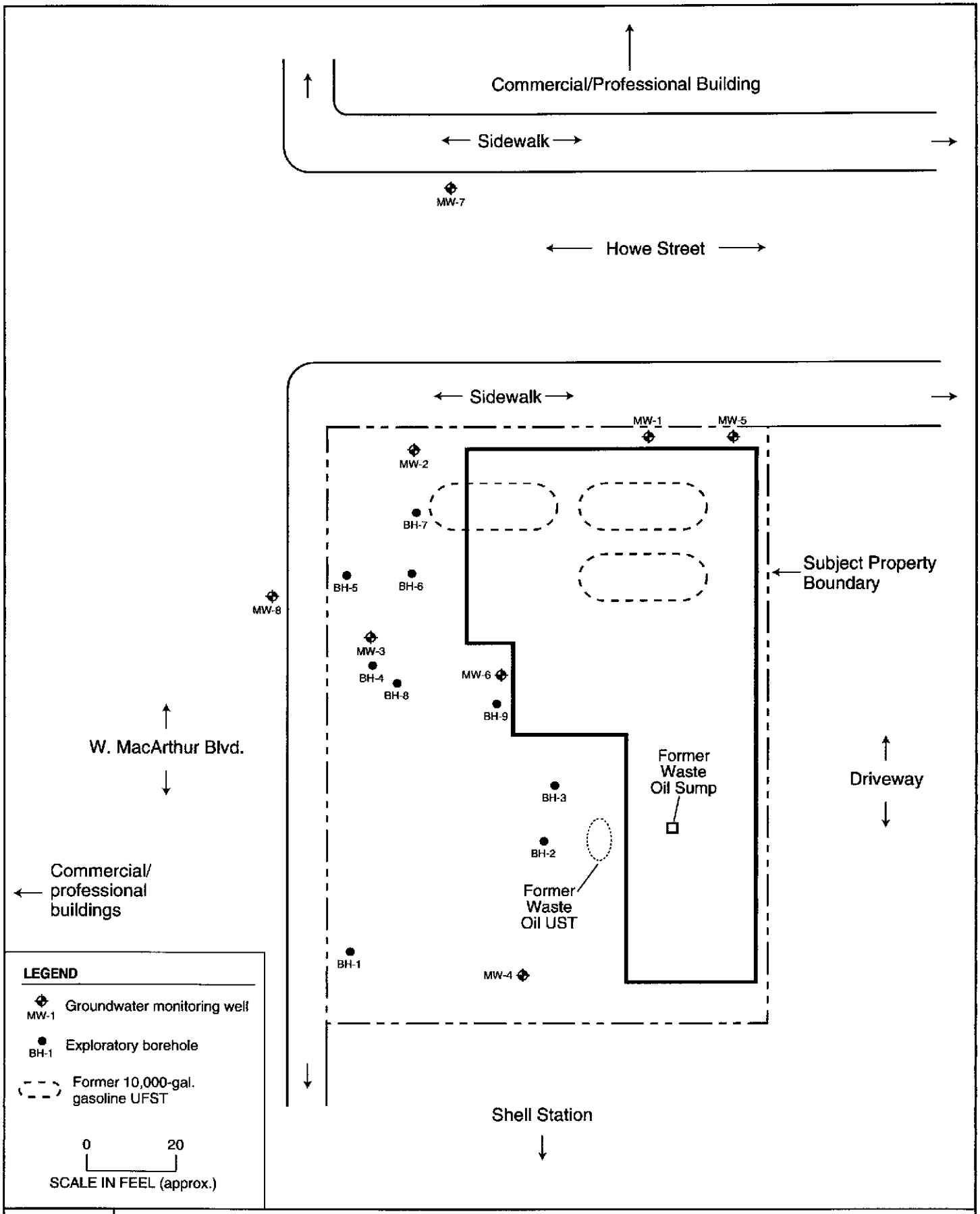
By: MJC

AUGUST 2003

Figure 1

★ Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2003-43-01

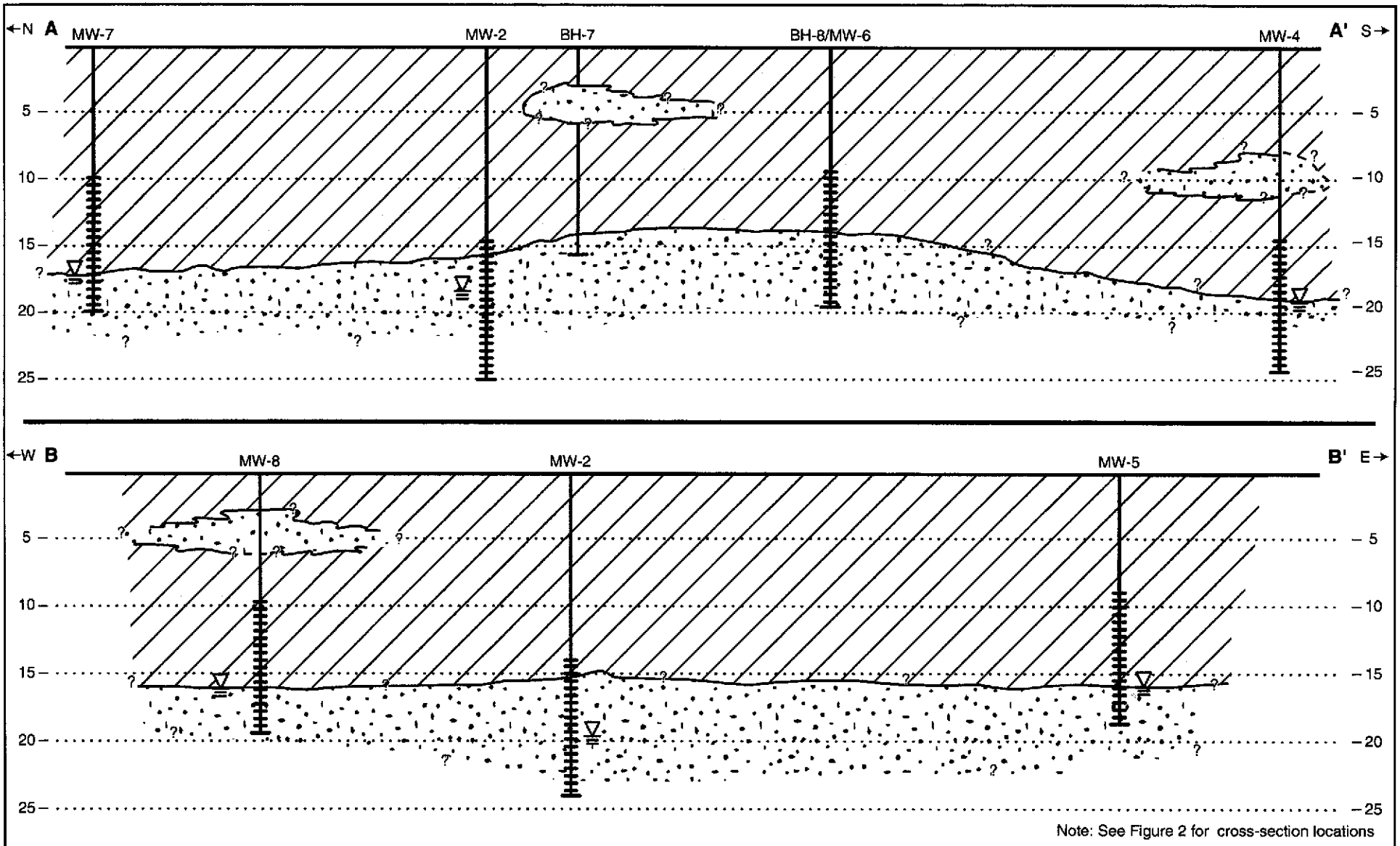


SITE PLAN WITH BOREHOLE AND GROUNDWATER WELL LOCATIONS

240 W. MacArthur Blvd. Oakland, CA	By: MJC	AUGUST 2003
	Figure 2	

Stellar Environmental Solutions, Inc.
Geoscience & Engineering Consulting

2003-43-02



Note: All depths are relative to ground surface at that location, and do not correspond to actual elevations between boreholes.

0 20

Horizontal scale (in feet)

Inferred lower permeability soils (clay, silt, silty sand)

Inferred higher permeability soils (sand with little or no fines; gravel)

Monitoring well showing screened interval

Water level during drilling

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GEOLOGIC CROSS SECTIONS A–A' AND B–B'

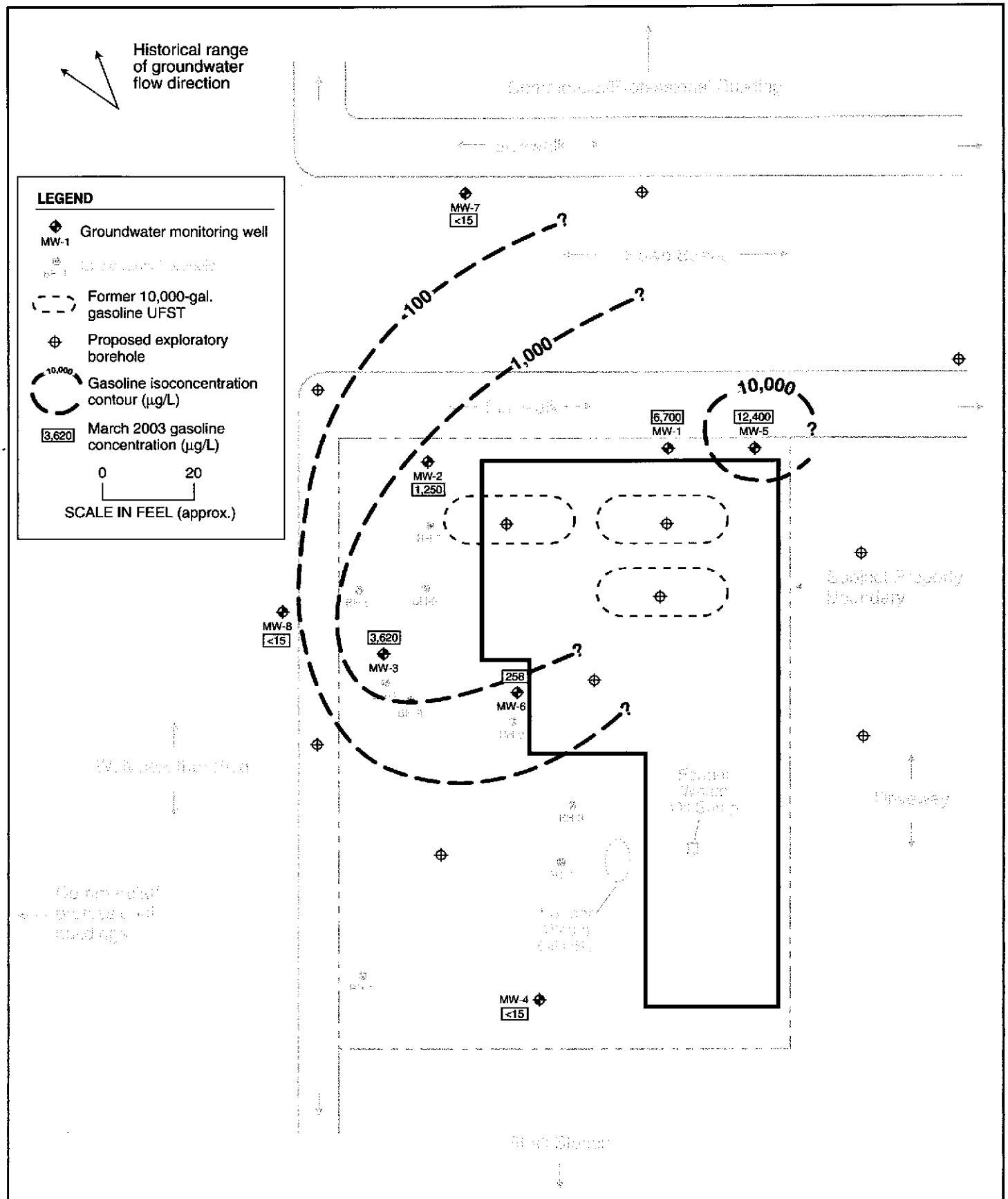
240 W. MacArthur Blvd., Oakland, CA

Figure 3

by: MJC

AUGUST 2003

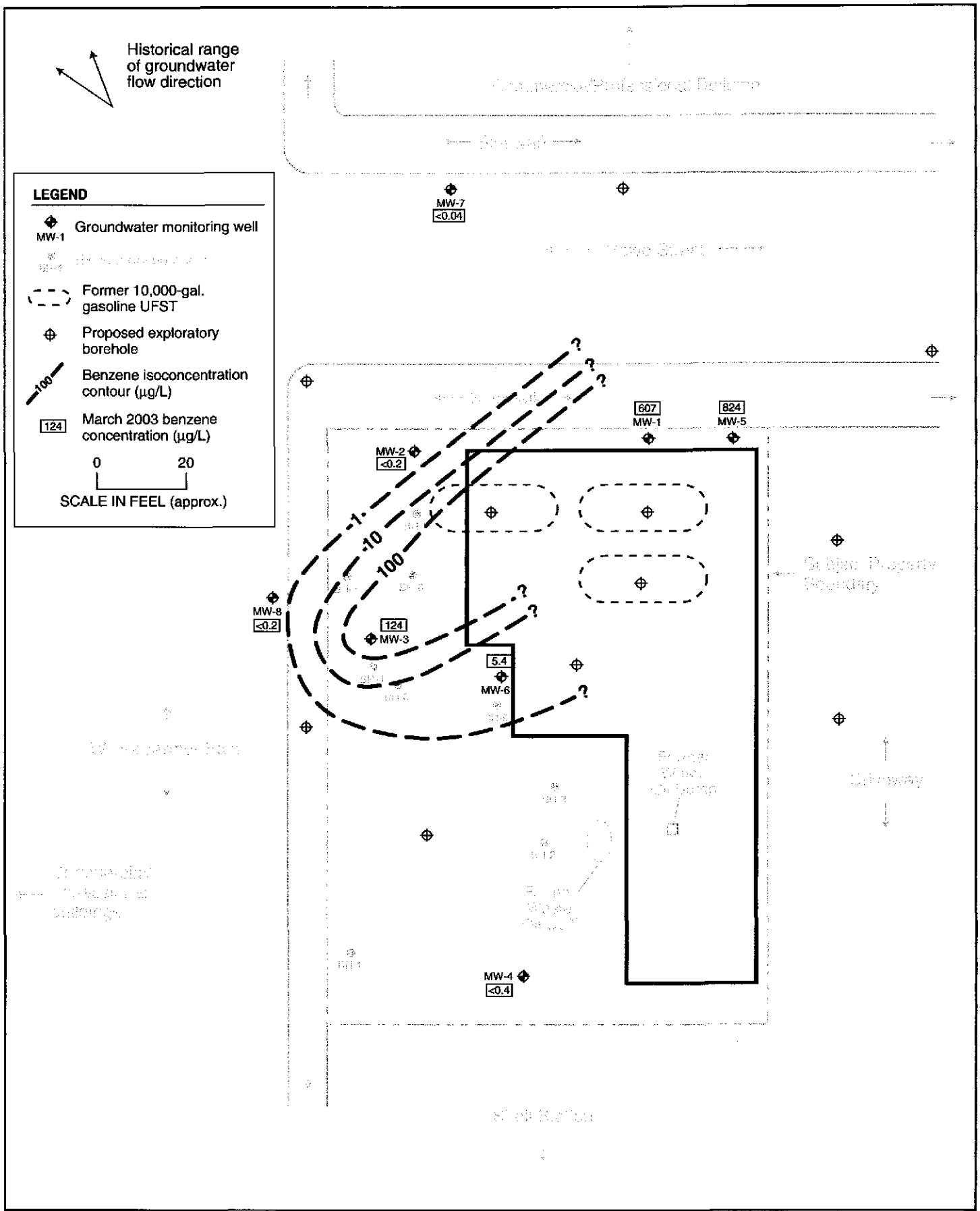
2003-43-03



2003-43-04

GASOLINE ISOCONCENTRATION CONTOURS (MARCH 2003) AND PROPOSED BOREHOLE LOCATIONS

240 W. MacArthur Blvd. Oakland, CA	By: MJC	AUGUST 2003	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 4		



2003-43-05

BENZENE ISOCONCENTRATION CONTOURS (MARCH 2003) AND PROPOSED BOREHOLE LOCATIONS

240 W. MacArthur Blvd.
Oakland, CA

By: MJC | AUGUST 2003

Figure 5

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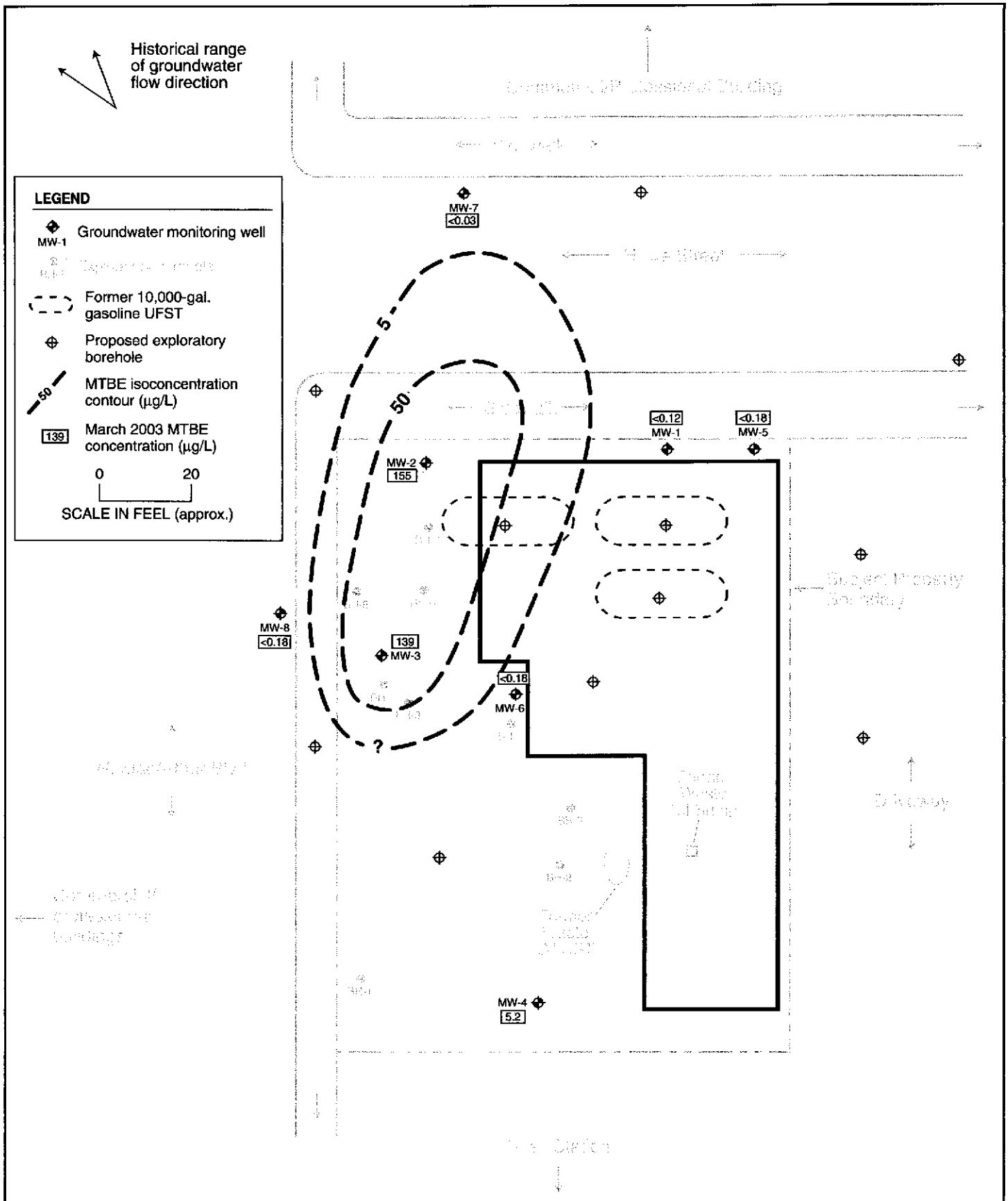
TABLES



MTBE ISOCONCENTRATION CONTOURS (MARCH 2003) AND PROPOSED BOREHOLE LOCATIONS

240 W. MacArthur Blvd. Oakland, CA	By: MJC	AUGUST 2003	★ Stellar Environmental Solutions, Inc. Geoscience & Engineering Consulting
	Figure 6		

2003-43-06

Table 1

Historical Soil Analytical Results
Waste Oil Sumps and Underground Storage Tank Removal
240 W. MacArthur Boulevard, Oakland, Alameda, California
(all concentrations in mg/kg)

Sample I.D.	Sample Depth (feet)	TEH-d	TOG	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	TVH-g	VOCs	PNAs / SVOCs
1991 Waste Oil Sump Removal (before over-excavation)											
1522-Bottom East	Unspec.	*< 1*	2,600	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
1522-Bottom West	Unspec.	*< 1*	630	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
1522-East Wall	Unspec.	*< 1*	150	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
1522-West Wall	Unspec.	*< 1*	*< 50*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
1991 Waste Oil Sump Removal (after over-excavation)											
1522-3	Unspec.	*NA*	*< 10*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
1522-4	Unspec.	*NA*	*< 10*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
1522-C	Unspec.	*NA*	360	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
October 1996 Waste Oil UST Removal (before over-excavation)											
EB (7.0')	7	510	7,000	*< 0.005*	0.006	0.009	0.033	*< 0.05*	*NA*	*NA*	*NA*
EB (8.0')	8	*< 1*	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*NA*	*NA*	ND
STKP-1 [a]	---	31	580	*< 0.005*	0.037	*< 0.005*	*< 0.005*	*< 0.05*	*NA*	*NA*	*NA*
STKP-2 [a]	---	100	1,300	*< 0.005*	0.037	*< 0.005*	0.012	*< 0.05*	*NA*	*NA*	*NA*
STKP-3 [b]	---	*NA*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*NA*	*NA*	ND	ND (b)
November 1996 Waste Oil UST Removal (after over-excavation)											
SW1	8.5	*< 1*	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	ND

SW2	8.5	**8.9**	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	ND
SW3	8.5	*< 1*	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	ND
SW4	8.5	*< 1*	*< 50*	*< 0.005*	*< 0.005*	**0.014**	**0.046**	*< 0.05*	*< 1*	*NA*	ND
EB	9	*< 1*	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	ND
STKP [(a)]	---	6.9	*< 50*	*< 0.005*	*< 0.005*	< 0.005	0.007	< 0.05	2.1	*NA*	ND
January 1997 Investigation											
BH1, L3-15'	15	*< 1*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	*NA*
BH2, L3-15'	15	*< 1*	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	ND
BH3, L3-15'	15	*< 1*	*< 50*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*	*< 1*	*NA*	ND
BH4, L3-15'	15	**370**	*NA*	*< 0.02*	*< 0.02*	**4.4**	**14**	*< 3*	**1,100**	*NA*	*NA*
BH5, L3-15'	15	**1.9**	*NA*	**0.009**	**0.006**	*< 0.005*	**0.016**	*< 0.05*	**2.1**	*NA*	*NA*
BH6, L3-15'	15	**140**	*NA*	**0.25**	**0.50**	**0.84**	**3.6**	*< 0.06*	**190**	*NA*	*NA*
ESLs		**100**	**1,000**	**0.045**	**2.6**	**2.5**	**1.0**	**0.028**	**100**	**various**	**various**

Notes:

(a) 4-point composite soil sample collected from excavated, stockpiled soil.

(b) Composite of STKP-1 and STKP-2 (8-point composite in all). Only detected contaminant was 0.21 mg/kg Methylnaphthalene.

Samples in bold-face type represent residual soil (not excavated and disposed)
TEH-d = Total extractable hydrocarbons (diesel range). TVH-g = Total volatile hydrocarbons– gasoline range. TOG = Total Oil and Grease
PNAs = Polynuclear aromatics. VOCs = Volatile Organic Compounds. SVOCs = Semi-Volatile Organic Compounds
NA = Sample Not Analyzed for this constituent(s). ND = Not Detected above respective method reporting limits
ESLs = California Regional Water Quality Control Board-S.F. Bay Region Environmental Screening Levels for commercial/industrial sites where groundwater is potential drinking water source.

Table 2
Summary of Soil Analytical Results - Metals
240 W. MacArthur Boulevard, Oakland, California

Sample I.D.	Metals Concentrations (mg/kg unless specified otherwise)																
	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
1996 Waste Oil UST Removal																	
SW1	*NA*	*NA*	*NA*	*NA*	*< 0.5*	**36**	*NA*	*NA*	**3.9**	*NA*	*NA*	**35**	*NA*	*NA*	*NA*	*NA*	**26**
SW2	*NA*	*NA*	*NA*	*NA*	*< 0.5*	**33**	*NA*	*NA*	**4.5**	*NA*	*NA*	**44**	*NA*	*NA*	*NA*	*NA*	**28**
SW3	*NA*	*NA*	*NA*	*NA*	*< 0.5*	**44**	*NA*	*NA*	**8.7**	*NA*	*NA*	**57**	*NA*	*NA*	*NA*	*NA*	**48**
SW4	*NA*	*NA*	*NA*	*NA*	*< 0.5*	**26**	*NA*	*NA*	**6.3**	*NA*	*NA*	**40**	*NA*	*NA*	*NA*	*NA*	**37**
EB (7.0')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**3.4 mg/L** [c.]	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
EB (8.0')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*< 0.2 mg/L* [c.]	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
EB (9.0')	*NA*	*NA*	*NA*	*NA*	*< 0.5*	**29**	*NA*	*NA*	**3.4 mg/L** [c.]	*NA*	*NA*	**39**	*NA*	*NA*	*NA*	*NA*	**35**
STKP-1	*NA*	*NA*	*NA*	*NA*	*< 0.5*	*NA*	*NA*	*NA*	2.8 mg/L [c.]	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
STKP-2	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	1.3 mg/L [c.]	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
STKP-3	*< 2.5*	4.5	78	*< 0.5*	*< 0.5*	33	9.1	14	62	*< 0.06*	*< 2*	39	*< 2.5*	*< 1*	*NA*	33	130
January 1997 Investigation																	
BH-1 (15')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**15**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
BH-2 (15')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**8.4**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
BH-3 (15')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**7.6**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
BH-4 (15')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**6.2**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
BH-5 (15')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**4.6**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
BH-6 (15')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**23**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
August 1997 Investigation																	
BH-8 (12')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**12.8**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
BH-8 (16')	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	**47.8**	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
California Hazardous Waste Criteria (10 X Soluble Threshold Limit Concentrations) [a]																	
	150	50	1,000	7.5	10	50	800	250	50	2.0	3,500	200	10	50	70	240	2,500
California Hazardous Waste Criteria (Total Threshold Limit Concentrations)																	
	500	500	10,000	75	100	2,500	8,000	2,500	1,000	20	3,500	2,000	100	500	700	2,400	5,000
California Regional Water Quality Control Board - San Francisco Bay Region Environmental Screening Levels for Commercial/Industrial Land Use [b]																	
	40	2.7	1,500	8.0	12	750	80	225	750	10	40	150	10	40	27	600	

NA = Sample Not Analyzed for this constituent
(a) Guideline for determining if waste could be classified as hazardous based on soluble concentrations, and waste should therefore be analyzed for soluble concentrations.
(b) For coarse-grained soils at commercial/industrial sites where groundwater is a current or potential drinking water source.

Table 3

Historical Soil Analytical Results
UFST Site Characterization Activities
Petroleum and Aromatic Hydrocarbons
240 W. MacArthur Boulevard, Oakland, Alameda, California
(all concentrations in mg/kg)

Borehole I.D.	Sample Depth (feet)	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
January 1997 Investigation								
BH-1	15	*< 1.0*	*< 1.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*
BH-2	15	*< 1.0*	*< 1.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*
BH-3	15	*< 1.0*	*< 1.0*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.05*
BH-4	15	**1,100**	**370**	*< 0.02*	*< 0.02*	**4.4**	**14**	*< 3.0*
BH-5	15	**2.1**	**1.9**	**0.009**	**0.006**	*< 0.005*	0.016	*< 0.05*
BH-6	15	**190**	**140**	**0.25**	**0.50**	**0.84**	**3.6**	*< 0.6*
August 1997 Investigation								
BH-7	12	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
	16	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
BH-8	8	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
	12	**168**	*< 10*	**0.02**	*< 0.005*	**0.45**	**5.1**	*< 0.05*
	16	**21**	*< 10*	**0.027**	**0.07**	*< 0.005*	**0.75**	*< 0.05*
BH-9	8	*< 5*	*< 10*	*< 0.005*	**0.032**	0.029	**0.28**	*< 0.05*
	12	*< 5*	*< 10*	*< 0.005*	**0.012**	*< 0.005*	*< 0.005*	*< 0.05*
	16	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
MW-1	10	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
	17	*< 5*	*< 10*	*< 0.005*	**0.031**	*< 0.005*	*< 0.015*	*< 0.05*
MW-2	10	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
	17	16	*< 10*	**0.035**	**0.037**	**0.018**	**0.15**	*< 0.05*
MW-3	10	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
	15	*< 5*	*< 10*	**0.027**	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
MW-4	10	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
	17	*< 5*	*< 10*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.015*	*< 0.05*
February 2001 Investigation								
MW-5	5	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	10	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	15	*11,700*	*NA*	25.6	12	55.8	38.6	*< 0.005*

	20	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
MW-7	10	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	15	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	20	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
MW-8	5	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	10	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	15	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*
	20	*< 10*	*NA*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.005*	*< 0.0723*
Soil ESLs [a]		**100**	**100**	**0.045**	**2.6**	**2.5**	**1.0**	**0.028**

Notes:

[a] ESLs = Regional Water Quality Control Board Environmental Screening Levels for commercial/industrial sites where groundwater is a potential drinking water source

TEH-d = Total extractable hydrocarbons (diesel range). TVH-g = Total volatile hydrocarbons– gasoline range.

Table 4
Historical Groundwater Monitoring Well Groundwater Analytical Results
Petroleum and Aromatic Hydrocarbons
240 W. MacArthur Boulevard, Oakland, Alameda, California
(all concentrations in µg/L)

Borehole / Well I.D.	Sampling Event No.	Date Sampled	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
MW-1	1	Aug-97	1,140	*< 1,000*	110	16	15	112	*NA*
	2	Dec-97	ND	*NA*	ND	ND	ND	31	*NA*
	3	Mar-98	370	*NA*	8.9	*< 0.5*	*< 0.5*	2.2	18
	4	Jul-98	6,400	*NA*	1,300	23	3.7	58	97
	5	Oct-98	2,500	*NA*	360	44	1.3	150	*< 0.5*
	6	Jan-99	2,700	*NA*	1,200	28	140	78	130
	7	Jun-00	27,000	*NA*	5,200	500	320	3,100	1,300
	8	Dec-00	976,000	*NA*	2,490	1,420	3,640	10,100	*< 150*
	9	Feb-01	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	10	May-01	20,000	*NA*	2,900	310	230	1,900	*< 30*
	11	Jul-01	92,000	*NA*	2,900	580	2,800	20,000	560
Pre"hi-vac"	12	Oct 22-01	20,000	*NA*	3,700	560	410	4,600	2,600
Post "hi-vac"	12	Oct 26-01	*< 0.05*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	13	Dec-01	3,300	*NA*	200	12	5.7	43	44
	14	Mar-02	4,600	*NA*	820	4.4	100	300	210
	15	May-02	1,600	*NA*	100	23	20	190	7.7
	16	Jul-02	2,300	*NA*	250	15	13	180	180
	17	Oct-02	1,820	*NA*	222	16	*< 0.3*	59	58
	18	Jan-03	2,880	*NA*	188	*< 50*	*< 50*	157	20
	19	Mar-03	6,700	*NA*	607	64	64	288	*< 0.18*
MW-2	1	Aug-97	5,350	*< 1,000*	108	36	33	144	*NA*
	2	Dec-97	1,600	*NA*	73	ND	ND	ND	*NA*
	3	Mar-98	3,400	*NA*	830	100	210	240	870
	4	Jul-98	3,100	*NA*	25	2.2	*< 0.5*	0.9	1,900
	5	Oct-98	4,300	*NA*	*< 0.5*	1.2	*< 0.5*	1	4,200
	6	Jan-99	2,900	*NA*	160	8.9	6.9	78.4	2,100
	7	Jun-00	2,700	*NA*	200	17	30	16	680
	8	Dec-00	3,020	*NA*	56.7	*< 1.5*	*< 1.5*	*< 3.0*	3,040
	9	Feb-01	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	10	May-01	720	*NA*	49	*< 3.0*	4.6	*< 3.0*	380
	11	Jul-01	8,400	*NA*	350	44	77	78	550
Pre"hi-vac"	12	Oct 22-01	850	*NA*	170	4.9	5.1	14	260
Post "hi-vac"	12	Oct 26-01	770	*NA*	86	5.5	9.6	8.5	310
	13	Dec-01	1,300	*NA*	9.2	*< 2.0*	*< 2.0*	*< 2.0*	370
	14	Mar-02	1,300	*NA*	76	3.8	21	15	460
	15	May-02	320	*NA*	12	1.1	4.6	4.8	160
	16	Jul-02	1,300	*NA*	130	1	9.4	5.6	420
	17	Oct-02	1,060	*NA*	12	2.2	4.2	3.5	270
	18	Jan-03	581	*NA*	6.5	*< 5.0*	*< 5.0*	*< 5.0*	130
	19	Mar-03	1,250	*NA*	*< 0.22*	*< 0.32*	*< 0.31*	*< 0.4*	155
MW-3	1	Aug-97	8,500	*< 1,000*	450	30	53	106	*NA*
	2	Dec-97	5,200	*NA*	180	6	5	9.3	*NA*
	3	Mar-98	1,000	*NA*	6	*< 0.5*	*< 0.5*	*< 0.5*	810
	4	Jul-98	6,400	*NA*	490	57	23	78	220
	5	Oct-98	2,100	*NA*	*< 5.0*	*< 5.0*	*< 5.0*	*< 5.0*	2,100
	6	Jan-99	4,400	*NA*	450	65	26	42	1,300

	7	Jun-00	1,700	*NA*	110	13	34	13	96
	8	Dec-00	5,450	*NA*	445	*< 7.5*	23.8	*< 7.5*	603
	9	Feb-01	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	10	May-01	1,900	*NA*	180	12	*< 3.0*	19	330
	11	Jul-01	10,000	*NA*	830	160	150	260	560
Pre"hi-vac"	12	Oct 22-01	1,400	*NA*	240	7.8	4.1	15	220
Post "hi-vac"	12	Oct 26-01	1,900	*NA*	200	16	51	30	290
	13	Dec-01	5,800	*NA*	93	*< 20*	31	*< 20*	330
	14	Mar-02	1,900	*NA*	220	16	31	24	400
	15	May-02	1,600	*NA*	110	3.4	29	14	320
	16	Jul-02	1,900	*NA*	210	27	30	55	200
	17	Oct. 2002	3,030	*NA*	178	19	6.2	36	178
	18	Jan-03	2,980	*NA*	47	*< 5.0*	7.6	6.3	105
	19	Mar-03	3,620	*NA*	124	*< 0.32*	22	12	139
MW-4	1	Aug-97	*< 500*	*< 1,000*	*< 0.5*	*< 0.5*	*< 0.5*	*< 1.5*	*NA*
	2	Dec-97	ND	*NA*	ND	ND	ND	ND	*NA*
	3	Mar-98	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	4	Jul-98	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	5	Oct-98	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	6	Jan-99	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	7	Jun-00	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	8	Dec-00	*< 500*	*NA*	*< 0.3*	*< 0.3*	*< 0.6*	*< 0.3*	*< 0.3*
	9	Feb-01	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	10	May-01	*< 50*	*NA*	1.2	*< 0.3*	0.55	1.2	2.9
	11	Jul-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
Pre"hi-vac"	12	Oct 22-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
Post "hi-vac"	12	Oct 26-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	13	Dec-01	ND	*NA*	ND	ND	ND	ND	ND
	14	Mar-02	*< 50*	*NA*	*< 1*	*< 1*	*< 1*	*< 1*	*< 1*
	15	May-02	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	16	Jul-02	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	17	Oct-02	*< 100*	*NA*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.6*	*< 0.3*
	18	Jan-03	*< 100*	*NA*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.6*	14
	19	Mar-03	*< 15*	*NA*	*< 0.4*	*< 0.02*	*< 0.02*	*< 0.06*	5.2
MW-5	9	Feb-01	5,660	*NA*	76.9	21.1	47.3	312	*< 0.3*
	10	May-01	22,000	*NA*	2,600	480	220	2,700	*< 30*
	11	Jul-01	72,000	*NA*	3,500	1,100	4,300	22,000	2,500
Pre"hi-vac"	12	Oct 22-01	26,000	*NA*	2,800	980	6,000	950	2,300
Post "hi-vac"	12	Oct 26-01	17,000	*NA*	1,200	470	2,900	440	900
	13	Dec-01	2,000	*NA*	620	190	110	910	*< 20*
	14	Mar-02	8,800	*NA*	1,200	72	7.4	350	1,200
	15	May-02	2,000	*NA*	150	38	21	260	13
	16	Jul-02	4,200	*NA*	480	68	29	280	450
	17	Oct-02	5,370	*NA*	236	45	23	39	135
	18	Jan-03	8,270	*NA*	615	156	174	1,010	*< 10*
	19	Mar-03	12,400	*NA*	824	195	213	1,070	*< 0.18*
MW-6	9	Feb-01	1,340	*NA*	17	0.967	11.1	51.4	*< 0.3*
	10	May-01	610	*NA*	15	0.97	*< 0.5*	46	*< 0.5*
	11	Jul-01	2,500	*NA*	130	4.7	53	170	120
Pre"hi-vac"	12	Oct 22-01	280	*NA*	18	1.2	6.2	4.7	6
Post "hi-vac"	12	Oct 26-01	3,600	*NA*	210	20	170	62	120
	13	Dec-01	5,300	*NA*	69	5.6	14	17	*< 2.0*
	14	Mar-02	71	*NA*	54	4.2	27	17	8.5
	15	May-02	150	*NA*	9.3	*< 0.5*	*< 0.5*	*< 0.5*	1.5
	16	Jul-02	2,200	*NA*	98	32	46	150	66

	17	Oct-02	786	*NA*	48	5	2.2	44	16
	18	Jan-03	497	*NA*	6.8	*< 5.0*	*< 5.0*	11	*< 1.0*
	19	Mar-03	258	*NA*	5.4	*< 0.32*	3.3	*< 1.1*	*< 0.18*
MW-7	9	Feb-01	ND	*NA*	ND	ND	ND	ND	ND
	10	May-01	*< 50*	*NA*	0.75	0.77	0.48	2.4	1.1
	11	Jul-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
Pre"hi-vac"	12	Oct 22-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
Post "hi-vac"	12	Oct 26-01	6,000	*NA*	170	550	110	120	970
	13	Dec-01	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	43
	14	Mar-02	*< 50*	*NA*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
	15	May-02	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	16	Jul-02	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	17	Oct-02	*< 100*	*NA*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.6*	*< 5.0*
	18	Jan-03	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*
	19	Mar-03	*< 15*	*NA*	*< 0.04*	*< 0.02*	*< 0.02*	*< 0.06*	*< 0.03*
MW-8	9	Feb-01	1,000	*NA*	3.97	< 0.3	3.78	1.63	620
	10	May-01	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	4.4
	11	Jul-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
Pre"hi-vac"	12	Oct 22-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
Post "hi-vac"	12	Oct 26-01	*< 5.0*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	13	Dec-01	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	14	Mar-02	*< 50*	*NA*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*	*< 1.0*
	15	May-02	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	16	Jul-02	*< 50*	*NA*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*
	17	Oct-02	458	*NA*	1.7	*< 0.3*	*< 0.3*	*< 0.6*	233
	18	Jan-03	*< 100*	*NA*	*< 0.3*	*< 0.3*	*< 0.3*	*< 0.6*	*< 5.0*
	19	Mar-03	*< 15*	*NA*	*< 0.22*	*< 0.32*	*< 0.31*	*< 0.4*	*< 0.18*
ESLs			**100**	**100**	**1.0**	**40**	**30**	**13**	**5.0**

Notes:

(a) First value is for sites where a drinking water resource is not threatened; 2nd value is for sites where a drinking water resource is threatened.

ESLs = Regional Water Quality Control Board Risk-Based Environmental Levels (see "Regulatory Considerations" text for applicable criteria)

TVH-g = Total volatile hydrocarbons – gasoline range. TEH-d – Total extractable hydrocarbons – diesel range.

NA = Not analyzed for this constituent.

ND = Not Detected (method reporting limit not specified in information available to SES).

Table 5
Historical Groundwater Monitoring Well Groundwater Analytical Results
Fuel Oxygenates and VOCs
240 W. MacArthur Boulevard, Oakland, Alameda, California
(all concentrations in µg/L)

Well I.D.	Sampling Event No.	Date Sampled	1,2,4-TMB	1,3,5-TMB	t-Butanol	TBA	Naphthalene	cis-1,2-DCE	TCE	PCE	Others
MW-1	7	Jun-00	**51**	*< 5*	*< 1,000*	NA	*<5*	*< 5*	*< 5*	*< 5*	ND
	14	Mar-02	< 1	**1.6**	< 10	NA	*< 1*	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	**150**	*< 50*	NA	**68**	*< 50*	*< 50*	*< 50*	*< 50*	ND
	19	Mar-03	**373**	*< 0.49*	NA	*< 10*	*< 0.88*	*< 0.30*	*< 0.23*	*< 0.36*	ND
MW-2	7	Jun-00	*< 0.5*	*< 0.5*	*< 100*	NA	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	ND
	14	Mar-02	*< 1*	*< 1*	**220**	NA	*< 1*	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	*< 5*	*< 5*	NA	**34**	*< 5*	**24**	*< 5*	*< 5*	ND
	19	Mar-03	*< 0.49*	*< 0.26*	NA	**94**	*< 0.88*	**15**	*< 0.23*	*< 0.36*	ND
MW-3	7	Jun-00	*< 0.5*	*< 0.5*	*< 100*	NA	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	ND
	14	Mar-02	**2**	**4.7**	**180**	NA	**2.2**	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	*< 5*	**5.0**	NA	**76**	*< 5*	**21**	*< 5*	*< 5*	(a)
	19	Mar-03	*< 0.49*	*< 0.26*	NA	*< 10*	*< 0.88*	**24**	*< 0.23*	*< 0.36*	ND
MW-4	7	Jun-00	*< 0.5*	*< 0.5*	*< 100*	NA	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	ND
	14	Mar-02	*< 1*	*< 1*	*< 10*	NA	*< 1*	**2.9**	**3.7**	**5.0**	ND
	18	Jan-03	NA	NA	NA	NA	NA	NA	NA	NA	ND
	19	Mar-03	NA	NA	NA	NA	NA	NA	NA	NA	ND
MW-5	14	Mar-02	*< 1*	**2.7**	**640**	NA	*< 1*	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	**512**	**122**	NA	*< 100*	**120**	*< 50*	*< 50*	*< 50*	ND
	19	Mar-03	**554**	**107**	NA	*< 10*	**251**	*< 0.3*	*< 0.23*	*< 0.36*	(b)
MW-6	14	Mar-02	*< 1*	**2.2**	*< 10*	NA	**1.6**	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	**13**	*< 5*	NA	**46**	*< 5*	*< 5*	*< 5*	*< 5*	ND
	19	Mar-03	*< 0.49*	*< 0.26*	NA	**40**	*< 0.88*	*< 0.3*	*< 0.23*	*< 0.36*	(c.)
MW-7	14	Mar-02	*< 1*	*< 1*	*< 10*	NA	*< 1*	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	NA	NA	NA	NA	NA	NA	NA	NA	ND
	19	Mar-03	NA	NA	NA	NA	NA	NA	NA	NA	ND
MW-8	14	Mar-02	*< 1*	*< 1*	*< 10*	NA	< 1	*< 1*	*< 1*	*< 1*	ND
	18	Jan-03	NA	NA	NA	NA	NA	NA	NA	NA	ND
	19	Mar-03	*< 0.49*	*< 0.26*	NA	*< 10*	*< 0.88*	*< 0.3*	*< 0.23*	*< 0.36*	ND
Groundwater ESLs			NLP	NLP	NLP	NLP	21	5	5	5	NLP

Notes:
Table includes only detected contaminants
DCE = Dichloroethylene
PCE = Tetrachloroethylene
TCE = Trichloroethyene
TBA = Tertiary butyl alcohol
TMB = Trimethylbenzene
(a) Also detected were: isopropyl ether (DIPE - 2.0 mg/l); n-propylbenzene (5.4 mg/L); p-Isopropyltoluene (14 mg/L); sec-Butylbenzene (7.2 mg/L)
(b) Also detected were: isopropylbenzene (38 mg/L); n-Butylbenzene (20 mg/L); n-propylbenzene (36 mg/L); p-Isopropyltoluene (14 mg/L).
(c.) Also detected were: isopropylbenzene (3.4 mg/L); n-propylbenzene (2.3 mg/L).
ESLs = Regional Water Quality Control Board Risk-Based Environmental Levels (see "Regulatory Considerations" text for applicable criteria)
NA = Not analyzed for this constituent. ND = Not Detected
NLP = No Level Published

Table 6

Historical Borehole Grab-Groundwater Analytical Results
240 W. MacArthur Boulevard, Oakland, Alameda, California
(all concentrations in µg/L)

Sample I.D.	TVH-g	TEH-d	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Lead	TOG	PNAs / SVOCs
BH1W	330	490	2	0.72	*< 0.5*	1.3	220	*< 0.005*	*NA*	*NA*
BH2W	*< 50*	320	*< 0.5*	*< 0.5*	*< 0.5*	*< 0.5*	*< 5.0*	*< 0.005*	*< 5.0*	*ND*
BH4W	6,600	*NA*	58	13	110	270	170	*NA*	*NA*	*NA*
BH6W	13,000	450,000	870	65	130	570	320	*< 0.005*	*NA*	*NA*
ESLs	**100**	**100**	**1.0**	**40**	**30**	**13**	**5.0**	**3.2**	**---**	**---**

Notes:

TEH-d = Total extractable hydrocarbons (diesel range). TVH-g = Total volatile hydrocarbons– gasoline range. TOG = Total Oil and Grease
PNAs = Polynuclear aromatics. VOCs = Volatile Organic Compounds. SVOCs = Semi-Volatile Organic Compounds
NA = Sample Not Analyzed for this constituent(s). ND = Not Detected above respective method reporting limits

ESLs = Regional Water Quality Control Board Risk-Based Environmental Levels (see "Regulatory Considerations" text for applicable criteria)

Table 7
Historical Water Level and Hydraulic Gradient Data
240 W. MacArthur Boulevard, Oakland, Alameda, California

Well I.D.	Sampling Event No.	Date Measured	Water Level Depth (a)	Relative Water Level Elevation (b)
MW-1	1	Aug-97	11.83	16.83
	2	Dec-97	NA	NA
	3	Mar-98	NA	NA
	4	Jul-98	15.55	15.55
	5	Oct-98	15.55	15.55
	6	Jan-99	15.21	15.21
	7	Jun-00	15.21	15.21
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	14.53	14.76
	15	May-02	NA	NA
	16	Jul-02	16.39	16.62
	17	Oct-02	17.03	17.26
	18	Jan-03	14.91	15.14
	19	Mar-03	15.26	15.49
MW-2	1	Aug-97	16.32	17.02
	2	Dec-97	NA	NA
	3	Mar-98	NA	NA
	4	Jul-98	14.95	15.65
	5	Oct-98	14.95	15.65
	6	Jan-99	14.61	15.31
	7	Jun-00	14.61	15.31
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	13.07	14.72
	15	May-02	NA	NA
	16	Jul-02	15.86	17.51
	17	Oct-02	16.54	18.19
	18	Jan-03	14.37	16.02
	19	Mar-03	14.74	16.39
MW-3	1	Aug-97	15.36	16.91
	2	Dec-97	NA	NA
	3	Mar-98	NA	NA
	4	Jul-98	14.08	15.63
	5	Oct-98	14.08	15.63
	6	Jan-99	13.74	15.29

MW-3	7	Jun-00	13.74	15.29
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	13.19	15.01
	15	May-02	NA	NA
	16	Jul-02	14.97	16.79
	17	Oct. 2002	15.44	17.26
	18	Jan-03	13.49	15.31
	19	Mar-03	13.83	15.65
MW-4	1	Aug-97	NA	NA
	2	Dec-97	NA	NA
	3	Mar-98	NA	NA
	4	Jul-98	13.90	15.23
	5	Oct-98	13.90	15.23
	6	Jan-99	13.56	14.89
	7	Jun-00	13.56	14.89
	8	Dec-00	NA	NA
	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	13.02	14.72
	15	May-02	NA	NA
	16	Jul-02	14.81	16.51
	17	Oct-02	15.56	17.26
	18	Jan-03	13.39	15.09
	19	Mar-03	13.75	15.45
MW-5	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	14.62	14.62
	15	May-02	NA	NA
	16	Jul-02	16.46	16.46
	17	Oct-02	17.18	17.18
	18	Jan-03	14.99	14.99
	19	Mar-03	15.33	15.33
MW-6	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	13.75	14.74
	15	May-02	NA	NA
	16	Jul-02	15.55	16.54
	17	Oct-02	16.24	17.23

MW-6	18	Jan-03	14.17	15.16
	19	Mar-03	14.52	15.51
MW-7	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	13.87	14.96
	15	May-02	NA	NA
	16	Jul-02	15.72	16.81
	17	Oct-02	16.36	12.45
	18	Jan-03	14.22	15.31
	19	Mar-03	14.57	15.66
MW-8	9	Feb-01	NA	NA
	10	May-01	NA	NA
	11	Jul-01	NA	NA
	12	Oct-01	NA	NA
	13	Dec-01	NA	NA
	14	Mar-02	11.89	14.92
	15	May-02	NA	NA
	16	Jul-02	13.96	16.99
	17	Oct-02	14.48	17.51
	18	Jan-03	12.49	15.52
	19	Mar-03	12.85	15.88

Sampling Event No.	Date Measured	Groundwater Flow Direction	Groundwater Hydraulic Gradient (feet/foot)
1	Aug-97	NW	0.0048
2	Dec-97	NW	0.0051
3	Mar-98	NW	0.0063
4	Jul-98	N46W	0.0053
5	Oct-98	N46W	0.0053
6	Jan-99	N73W	0.0043
7	Jun-00	N78W	0.0050
8	Dec-00	NA	NA
9	Feb-01	N50W	0.0028
10	May-01	NA	NA
11	Jul-01	NA	NA
12	Oct-01	NA	NA
13	Dec-01	N71W	0.0027
14	Mar-02	N50W	0.0021
15	May-02	NA	NA
16	Jul-02	N80W	0.0075
17	Oct-02	N45W	0.0030
18	Jan-03	N70W	0.0033
19	Mar-03	N80W	0.0063

Notes:

(a) Feet below well top of casing.

(b) Relative to an abitrary elevation datum of 0 feet.

NA = Data Not Available

Data from October 1998 and June 2000 are likely not valid.

Table 8
Groundwater Monitoring Well Construction Data
240 W. MacArthur Boulevard, Oakland, California

Well	Well Depth (ft. below grade)	Screened Interval
MW-1	25	19.5 to 24.5
MW-2	25	14.5 to 24.5
MW-3	25	14.5 to 24.5
MW-4	25	14.5 to 24.5
MW-5	20	9 to 19
MW-6	20	9 to 19
MW-7	20	9 to 19
MW-8	20	9 to 19

Notes:

TOC = Top of casing.

All wells are 4-inch diameter PVC.

Elevations of well casing tops have not been surveyed.

ATTACHMENT A

Drilling & Sampling Methods and Protocols

ATTACHMENT A
DRILLING & SAMPLING METHODS AND PROTOCOLS

Prior to drilling, SES will prepare a site-specific Health and Safety Plan that will include the proposed drilling activities. We will apply for the requisite borehole drilling permit from Alameda County Public Works Agency, and we will notify Underground Service Alert of proposed drilling for their notification to utilities to mark any potential underground utilities.

The boreholes will be advanced with a Geoprobe™ (direct-push) or equivalent rig that advances approximately 2-inch diameter sampling rods into undisturbed soil. Soil samples are collected in either acetate or metal sleeves inside the sampling rods. The sleeves selected for offsite laboratory analysis are then capped (with non-reactive plastic caps) and labeled. "grab" groundwater samples are collected by installing temporary PVC well casing, and collecting the water samples with either a disposable bailer or through new Tygon™ tubing connected to a vacuum pump. The water is transferred directly to the appropriate sampling containers.

Samples will be securely sealed in appropriate containers, placed in an ice chest with ice at approximately 4 degrees C., and transported to the analytical laboratory under chain-of-custody record.

Waste soil (unused samples) are temporarily containerized onsite in labeled, 5-gallon plastic pails with sealing tops. This soil will be appropriately profiled and disposed of when it has been determined that no further waste soil will be generated, or will be combined with any future generated waste soil from subsequent investigation phases.