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**STELLAR ENVIRONMENTAL SOLUTIONS, Inc.**  
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TRANSMITTAL MEMORANDUM	
<b>TO:</b> ALAMEDA COUNTY HEALTH CARE SERVICES - ENVIRONMENTAL HEALTH DEPT. - LOCAL OVERSIGHT PROGRAM 1131 HARBOR BAY PKWY, SUITE 250 ALAMEDA, CA 94502	<b>DATE:</b> JANUARY 11, 2005
<b>ATTENTION:</b> MR. <del>BARNEY CHAN</del> DH	<b>FILE:</b> SES 2003-41
<b>SUBJECT:</b> FORMER RUSS ELLIOTT FACILITY 2526 WOOD STREET OAKLAND, CALIFORNIA FUEL LEAK CASE NO. RO00040	
<b>WE ARE SENDING:</b> <input checked="" type="checkbox"/> HEREWITH	<input type="checkbox"/> UNDER SEPARATE COVER
<input checked="" type="checkbox"/> VIA MAIL	<input type="checkbox"/> VIA
<b>THE FOLLOWING:</b> FOURTH QUARTER 2004 GROUNDWATER MONITORING AND ANNUAL SUMMARY REPORT (DATED JANUARY 10, 2004)	
<input type="checkbox"/> AS REQUESTED	<input type="checkbox"/> FOR YOUR APPROVAL
<input type="checkbox"/> FOR REVIEW	<input checked="" type="checkbox"/> FOR YOUR USE
<input type="checkbox"/> FOR SIGNATURE	<input checked="" type="checkbox"/> FOR YOUR FILES
<b>COPY TO:</b> Ms. JAN ELLIOTT - ELLIOTT FAMILY TRUST (FORMER PROPERTY OWNER, 2 COPIES)	<b>BY:</b> <u>BRUCE RUCKER</u>

R040

**FOURTH QUARTER 2004  
GROUNDWATER MONITORING  
& YEAR 2004 ANNUAL  
SUMMARY REPORT**

**FORMER RUSS ELLIOTT, INC. FACILITY  
2526 WOOD STREET  
OAKLAND, CALIFORNIA**

*Prepared for:*

**ELLIOTT FAMILY TRUST  
SAN LEANDRO, CALIFORNIA**

**January 2005**



GEOSCIENCE & ENGINEERING CONSULTING

January 10, 2005

Mr. Barney Chan  
Hazardous Materials Specialist  
Alameda County Health Care Services Agency  
Department of Environmental Health  
Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Subject: Fourth Quarter 2004 Groundwater Monitoring & Year 2004 Annual Summary Report  
Former Russ Elliott, Inc. Facility – 2526 Wood Street, Oakland, California

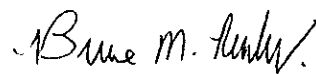
Dear Mr. Chan:

This report documents the fourth consecutive groundwater monitoring event (Q4 2004) conducted in November 2004 by Stellar Environmental Solutions, Inc. (SES) at the referenced site. Three site groundwater monitoring wells were installed and first sampled in February 2004 to evaluate impacts from two former onsite underground fuel storage tanks. The scope of work was conducted in accordance with the Alameda County Health-approved technical workplan.

This report also presents an evaluation of hydrochemical trends over the year of monitoring, including an evaluation of the plume extent and stability. In our professional opinion, continued groundwater monitoring is warranted to evaluate plume stability over time.

Please contact us at (510) 644-3123 if you have any questions.

Sincerely,

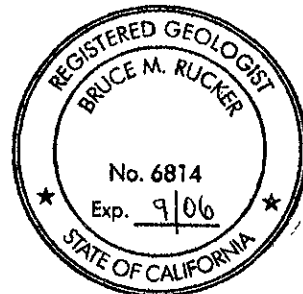


Bruce Rucker, R.G., R.E.A.  
Project Manager and Senior Geologist



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

cc: Ms. Jeannette Elliott, Property Owner



**FOURTH QUARTER 2004  
GROUNDWATER MONITORING &  
YEAR 2004 ANNUAL SUMMARY REPORT**

**FORMER RUSS ELLIOTT, INC. FACILITY  
2526 WOOD STREET  
OAKLAND, CALIFORNIA**

*Prepared for:*

**ELLIOTT FAMILY TRUST  
1744 SKYVIEW DRIVE  
SAN LEANDRO, CALIFORNIA 94577**

*Prepared by:*

**STELLAR ENVIRONMENTAL SOLUTIONS, INC.  
2198 SIXTH STREET  
BERKELEY, CALIFORNIA 94710**

**January 10, 2005**

Project No. 2003-41

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## **1.0 INTRODUCTION**

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### **PROJECT BACKGROUND**

Stellar Environmental Solutions, Inc. (SES) was retained by Ms. Jeannette Elliott (as property owner) to conduct ongoing groundwater monitoring and sampling activities at 2526 Wood Street in Oakland, California. The work is designed to evaluate impacts from previous onsite underground fuel storage tanks (UFSTs). Previous site corrective actions and investigations are summarized later in this report. The Alameda County Department of Environmental Health (Alameda County Health) is the lead regulatory agency for the investigation, and has assigned the site as Fuel Leak Case No. RO000040.

### **SITE AND VICINITY DESCRIPTION**

The project site is a former roofing company (Russ Elliott, Inc.) located at 2526 Wood Street, Oakland, Alameda County, California (site). The business ceased operations at the site in early 2004.

The property is approximately 380 feet long (between Wood Street and Willow Street) by approximately 120 feet wide. The long axis of the site (parallel to 26<sup>th</sup> Street) is oriented approximately northeast to southwest. Figure 1 is a site location map. Figure 2 shows the location of the former site UFSTs in relation to the site buildings and adjacent streets.

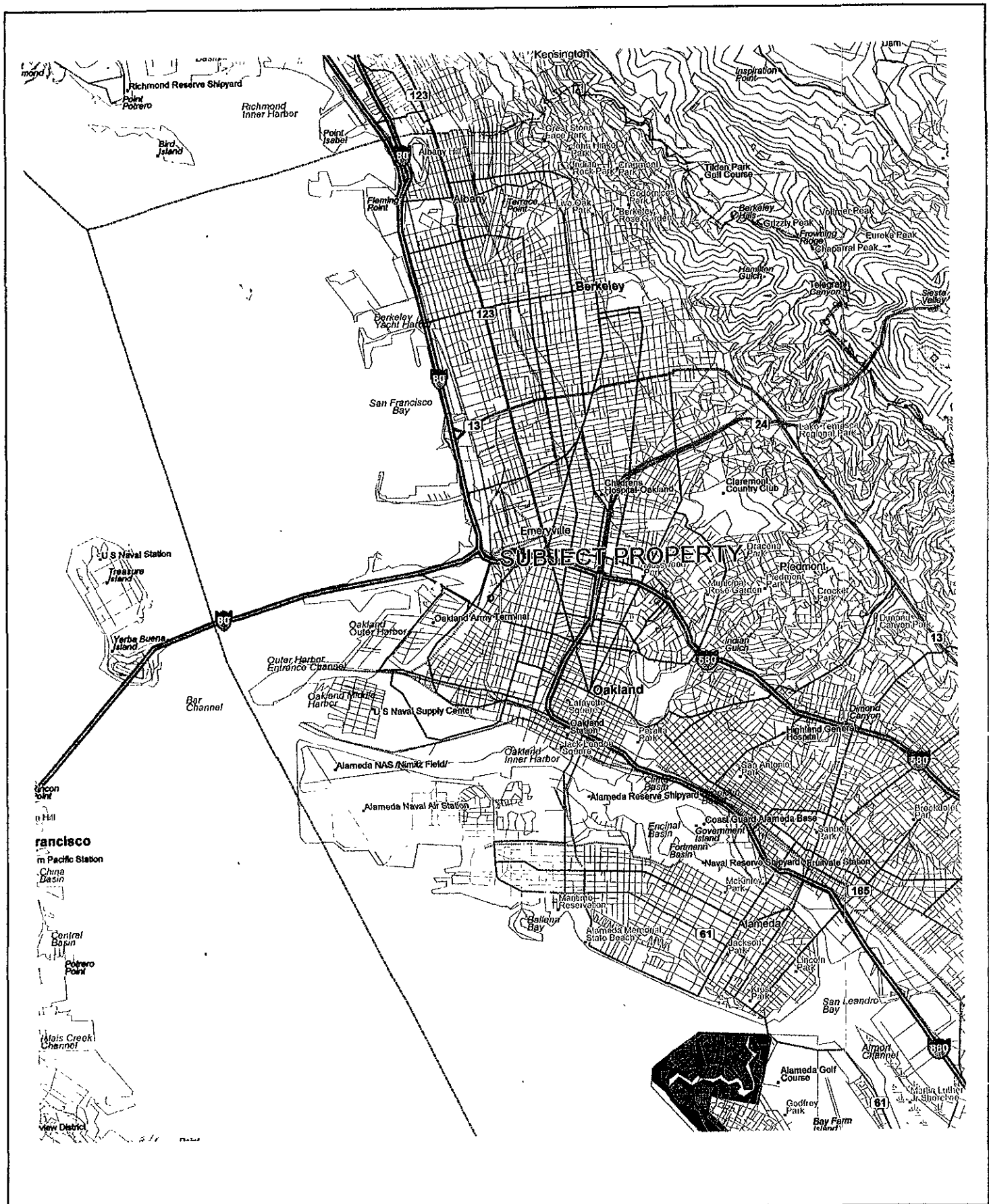
The former UFSTs and current area of investigation are in the largely-unpaved service yard near the western border of the subject property (near 26<sup>th</sup> Street). Access to this area is through a chain-link gate on 26<sup>th</sup> Street. The area available for exterior drilling is limited by adjacent buildings and an active railroad spur that services an adjacent parcel. Nearby land use is wholly commercial and light industrial (i.e., there are no residential or other sensitive land uses in the immediate vicinity).

Downgradient (to the west) land use includes streets, then undeveloped land with freeway overpasses, then San Francisco Bay (a total of approximately 3,000 feet from the subject property).

### **PREVIOUS INVESTIGATIONS**

Historical analytical results are presented in Appendix A, and are discussed in detail in Section 5.0 of this report.





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

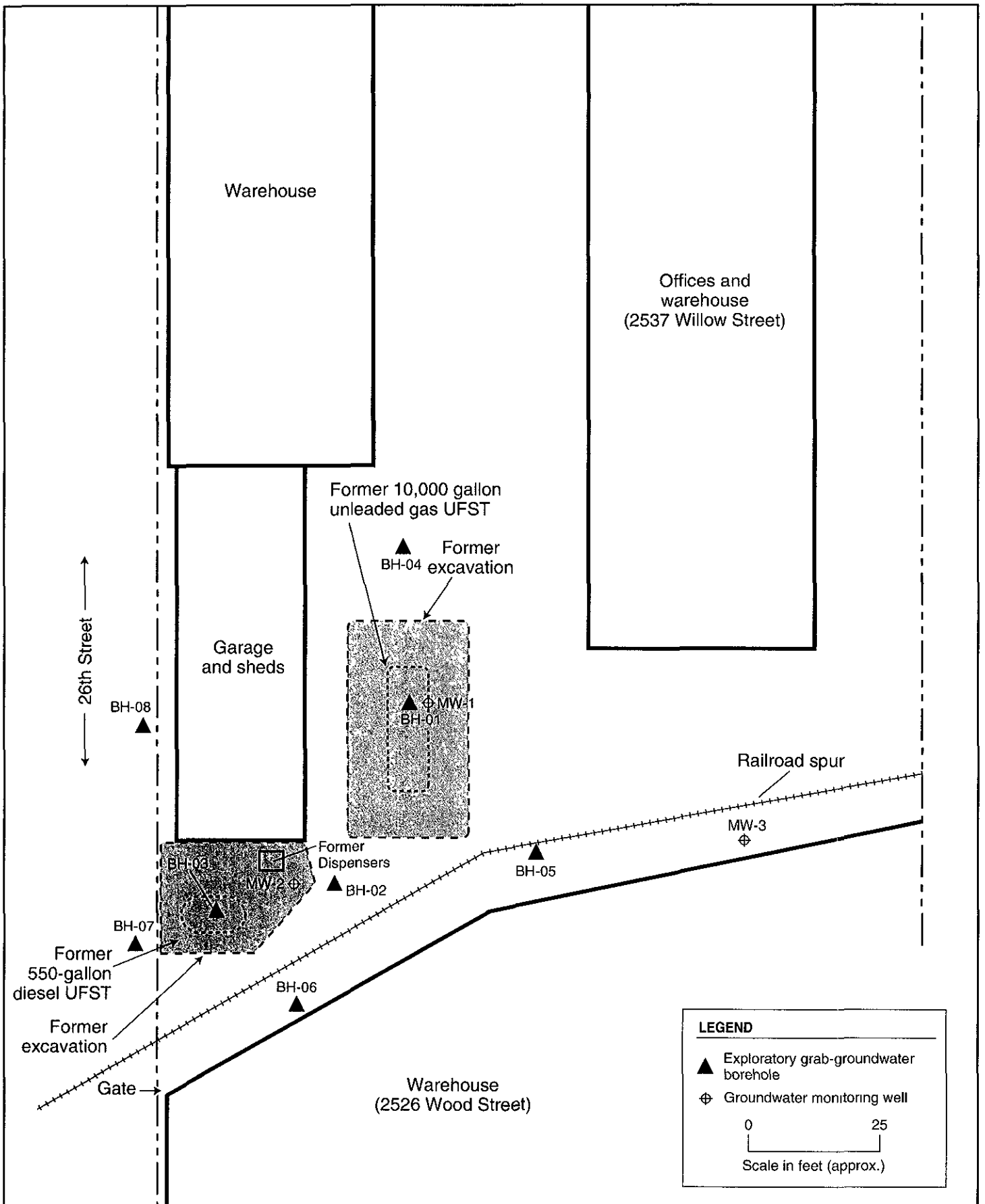
2526 Wood Street  
Oakland, CA

By: MJC

JULY 2003

Figure 1

2003-36-01



**SITE PLAN AND HISTORICAL SAMPLING LOCATIONS**

2526 Wood Street  
Oakland, CA

By: MJC

JUNE 2004

**Figure 2**

**★ Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting

2003-41-22

## **UFST Removals**

Two UFSTs were located near the western border of the subject property (near 26<sup>th</sup> Street), approximately 40 feet from each other. Both UFSTs were utilized for fueling company vehicles, and shared a common dispenser island that was located between them. Both UFSTs were removed under permit and regulatory oversight.

The 550-gallon diesel UFST was removed in 1995, and the 10,000-gallon gasoline UFST was removed in 2002. Confirmation soil and water sampling during UFST removals suggested an historical leak in the UFST and/or piping. No UFST closure documentation report was submitted for this UFST removal by the contractor that conducted the removal.

A UFST closure documentation report discussing both UFST removals (SES, 2003a) was prepared and submitted by SES to the Oakland Fire Department and Alameda County Health.

## **2003 Preliminary Site Assessment**

Concurrent with the UFST closure documentation report, SES submitted to Alameda County Health a technical workplan for a Preliminary Site Assessment (PSA) (consisting of exploratory borehole drilling and sampling) to evaluate the potential for residual contamination (SES, 2003b). Alameda County Health subsequently approved the technical workplan (Alameda County Health, 2003). The investigation, conducted in 2003, included advancing and sampling (soil and groundwater) from eight exploratory boreholes. A PSA documentation report was submitted to Alameda County Health (SES 2003c). Groundwater contaminants detected above screening-level criteria include diesel, gasoline, benzene, methyl tertiary-butyl ether (MTBE), and tertiary-butyl alcohol (TBA). The only soil contaminant detected above screening-level criteria was MTBE; however, that contamination was confined to the immediate vicinity of the former gasoline UFST. No soil contamination was detected beneath the upper water-bearing zone.

## **Groundwater Monitoring Well Installation**

On behalf of the property owner, SES submitted to Alameda County Health a technical workplan for a program of groundwater monitoring well installation, sampling, and reporting (SES, 2004a). Alameda County Health subsequently approved the well installation workplan (Alameda County Health, 2004). Three groundwater monitoring wells were installed, developed, surveyed, and sampled in February 2004 (SES, 2004b). This event represents the fourth consecutive quarterly groundwater monitoring event at the site.

## **OBJECTIVES AND SCOPE OF WORK**

This report discusses the following activities conducted/coordinated by Stellar Environmental Solutions, Inc. (SES) between October 1 and December 31, 2004:

- Collecting water levels in site wells to determine shallow groundwater flow direction;
- Sampling site wells for contaminant analysis and natural attenuation indicators; and
- An evaluation of hydrochemical and groundwater elevation trends.

## **REGULATORY OVERSIGHT**

The lead regulatory agency for the site investigation and remediation is Alameda County Health. All workplans and reports are submitted to this agency. The most recent Alameda County Health directive regarding the site (letter dated January 6, 2004) approved the well installation and quarterly groundwater monitoring and sampling.

Electronic Data Format (EDF) data beginning in the first quarter of 2004 have been successfully uploaded to the State of California Water Resources Control Board's GeoTracker database, in accordance with that agency's requirements for EDF submittals.

## **2.0 PHYSICAL SETTING**

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Following is a brief summary of the site hydrogeologic conditions based on geologic logging and water level measurements collected at the site since October 2003.

A detailed discussion of site lithology and hydrogeology was provided in the well installation report (SES, 2004a). The following summarizes site conditions. A total of 11 exploratory boreholes at the subject property have been geologically logged by a California Registered Geologist using the visual method of the Unified Soils Classification System. The majority of site boreholes have been advanced to 20 feet below ground surface (bgs). That interval includes the upper water-bearing zone and the underlying low-permeability non-water-bearing zone (aquitard).

### **LITHOLOGY**

In general, native soil consists primarily of clay (often silty), with interbedded sandy and gravelly zones. The upper 2 to 3 feet is dry, gravelly, sandy fill material. In the majority of the boreholes, this is underlain by a sand (often silty and clayey) varying in thickness from 1 to 6 feet, in which water was encountered (see below). This is underlain by a clay unit, occasionally with interbedded sand stringers. In some of the boreholes, this clay unit extends to total depth. In other boreholes, this clay unit is underlain by a sand unit, which in turn is underlain by a low-permeability clay (often gravelly). The shallow site lithology is typical of alluvial fan and stream depositional environments in this area, with lower-permeability (clay and silt) overbank deposits, and higher-permeability (sand and gravel) channel deposits, with significant lateral and depth variation over short distances.

### **GROUNDWATER HYDROLOGY**

Two shallow water-bearing zones were encountered in native soils in the majority of site boreholes. The top of the upper zone (possibly a perched water zone) was encountered at depths between approximately 4 and 8 feet bgs, in a sandy zone. Water was then encountered again at depths between approximately 13.5 and 17.5 feet bgs. In some of the boreholes, this deeper water was encountered at the top of the sand zone (when present); in other boreholes, it was within the lower clay unit. Water levels in wells MW-1 and MW-2 (installed in the former UFST backfill areas) also are likely influenced by direct infiltration during winter recharge events due to the surrounding unpaved surface. Section 5.0 discusses historical groundwater elevation data.

### 3.0 NOVEMBER 2004 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

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This section presents the groundwater monitoring and sampling methods for the most recent groundwater monitoring/sampling event. Analytical results are discussed in a subsequent section. Activities included:

- Measuring static water levels with an electric water level indicator;
- Purging wells to obtain representative formation water (and collecting aquifer stability parameters between each purging); and
- Collecting post-purge groundwater samples for laboratory analysis.

On November 12, 2004, groundwater monitoring well water level measurements, purging, and sampling activities were conducted by North State Environmental (South San Francisco, CA), under the supervision of SES personnel. Table 1 shows the well construction and groundwater elevation data. Appendix B contains the groundwater monitoring field records for the sampling event.

**Table 1**  
**Groundwater Monitoring Well Construction and Groundwater Elevation Data**  
**November 22, 2004 Monitoring Event**  
**2526 Wood Street, Oakland, California**

Well	Well Depth	Screened Interval	TOC Elevation <sup>(a)</sup>	Groundwater Depth <sup>(b)</sup>	Groundwater Elevation <sup>(a)</sup>
MW-1	20	5 to 20	6.87	4.11	2.76
MW-2	20	5 to 20	6.29	3.91	2.38
MW-3	20	5 to 20	6.94	4.35	2.59

Notes:

<sup>(a)</sup> All elevations are expressed as feet above mean sea level.

<sup>(b)</sup> Depths are in feet bgs, adjacent to the well.

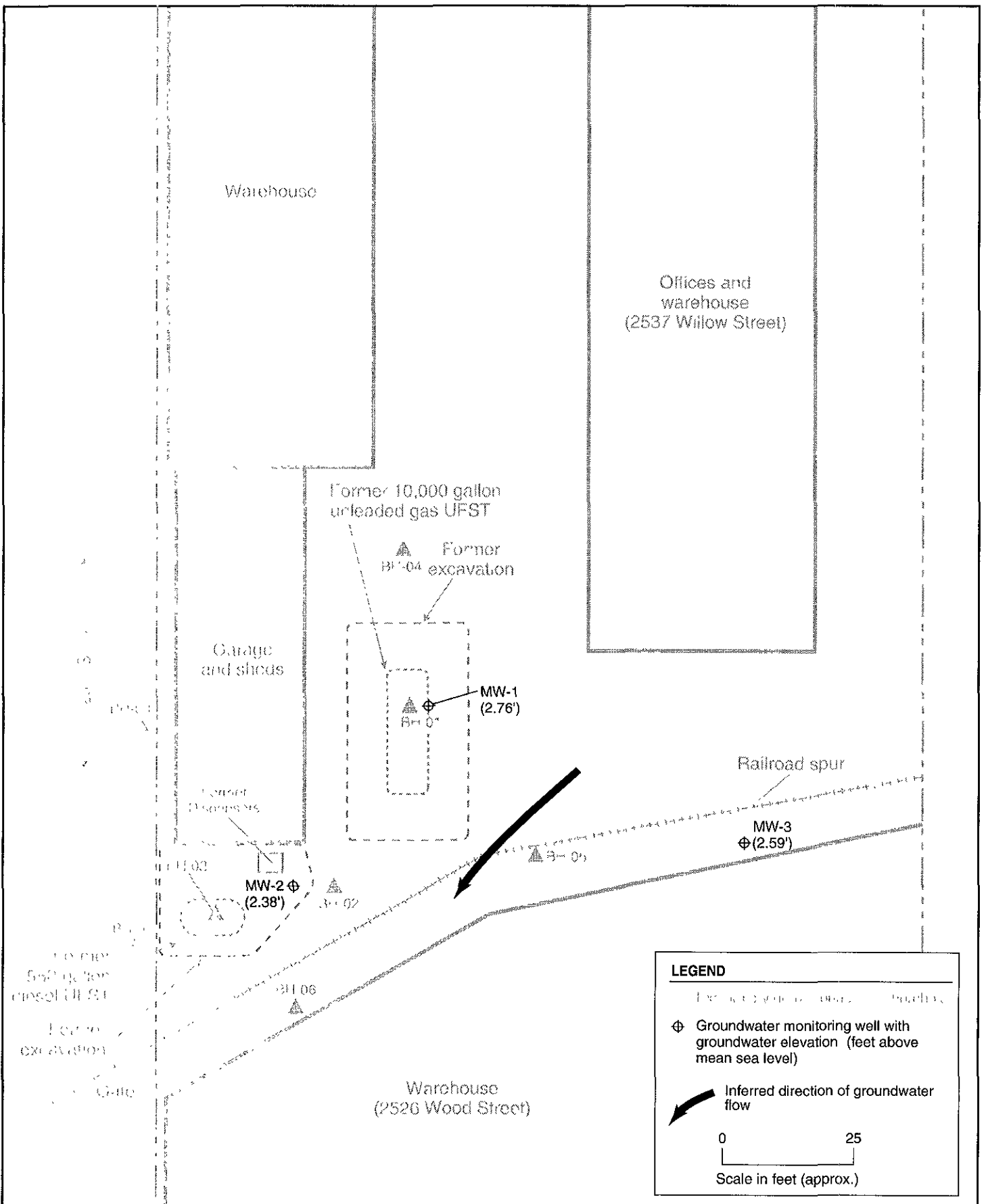
TOC = Top of casing.

All wells are 2-inch-diameter.

As the first task of the monitoring event, static water levels were measured using an electric water level indicator. Each well was then purged (with a downhole pump) of three wetted casing volumes. Aquifer stability parameters were measured between each purged casing volume to ensure that representative formation water entered the well before sampling. Neither separate-phase petroleum product nor sheen was observed during well purging/sampling.

The "Geo Well" data for this event (water levels) were uploaded as an Electronic Data Deliverable (EDD) to the California GeoTracker on-line database.

Depth to groundwater (equilibrated in wells) in the current monitoring event ranged from approximately 3.91 to 4.35 feet below grade. Apparent local groundwater flow direction in the November 2004 event was to the west, with a hydraulic gradient of approximately 0.009 feet/foot. Figure 3 is a groundwater elevation and contour map for the current event. Section 5.0 discusses historical groundwater elevation data.



**GROUNDWATER ELEVATION MAP — NOVEMBER 22, 2004**

2526 Wood Street  
Oakland, CA

By: MJC

DECEMBER 2004

**Figure 3**

★ **Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting

2003-41-36





## **4.0 CURRENT EVENT (Q4) ANALYTICAL RESULTS**

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This section discusses the findings of the current (November 2004) sampling event.

All groundwater samples in the current sampling event were analyzed for:

- Total volatile hydrocarbons – gasoline range (TVHg), by modified EPA Method 8015;
- Total extractable hydrocarbons – diesel range (TEHd), by modified EPA Method 8015;
- Benzene, toluene, ethylbenzene, and xylenes (BTEX), by EPA Method 8020; and
- MTBE and fuel oxygenates (tertiary-amyl methyl ether [TAME]; di-isopropyl ether [DIPE]; and TBA), by EPA Method 8260.

All groundwater samples were analyzed by North State Environmental, which maintains current ELAP certifications for all of the analytical methods utilized in this investigation. Appendix C contains the certified analytical laboratory report and chain-of-custody record for this event.

Table 2 summarizes the groundwater sample analytical results from the November 2004 well sampling event. Figure 4 displays the groundwater analytical results on the site plan.

### **GASOLINE**

Gasoline (TVHg) was detected above the laboratory lower detection limit (<50 µg/L) only in monitoring well MW-2 (271 µg/L) during this monitoring event. This concentration exceeds the Regional Water Quality Control Board's (RWQCB's) established groundwater Environmental Screening Level (ESL) of 100 µg/L for gasoline.

### **METHYL TERTIARY-BUTYL ETHER**

MTBE was detected in wells MW-1 and MW-2, at 83 µg/L and 1,820 µg/L, respectively. MTBE was not detected in well MW-3 in either this or the two previous events.

### **BENZENE**

Benzene was detected in the current event only in well MW-2 (102 µg/L).

**Table 2**  
**November 22, 2004 Groundwater Analytical Results**  
**2526 Wood Street, Oakland, California <sup>(a)</sup>**

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE <sup>(b)</sup>	Fuel Oxygenates and Lead Scavengers <sup>(b)</sup>
MW-1	<50	< 50	<0.5	<0.5	<0.5	<1.00	83	ND
MW-2	<50	271	102	<0.5	<0.5	1.3	1,820	TAME = 139   TBA = 486
MW-3	<50	< 50	<0.5	<0.5	<0.5	<1.00	<0.5	ND
<b>Groundwater ESLs</b>	100	100	1.0	40	30	13	5.0	TAME = NLP   TBA = 12

Notes:

<sup>(a)</sup> All concentrations in µg/L

<sup>(b)</sup> Table reports only detected fuel oxygenates and lead scavengers. Full list of analytes is included in Appendix C.

MTBE = Methyl tertiary-butyl ether.

TAME = Tertiary-amyl methyl ether.

TBA = Tertiary-butyl alcohol.

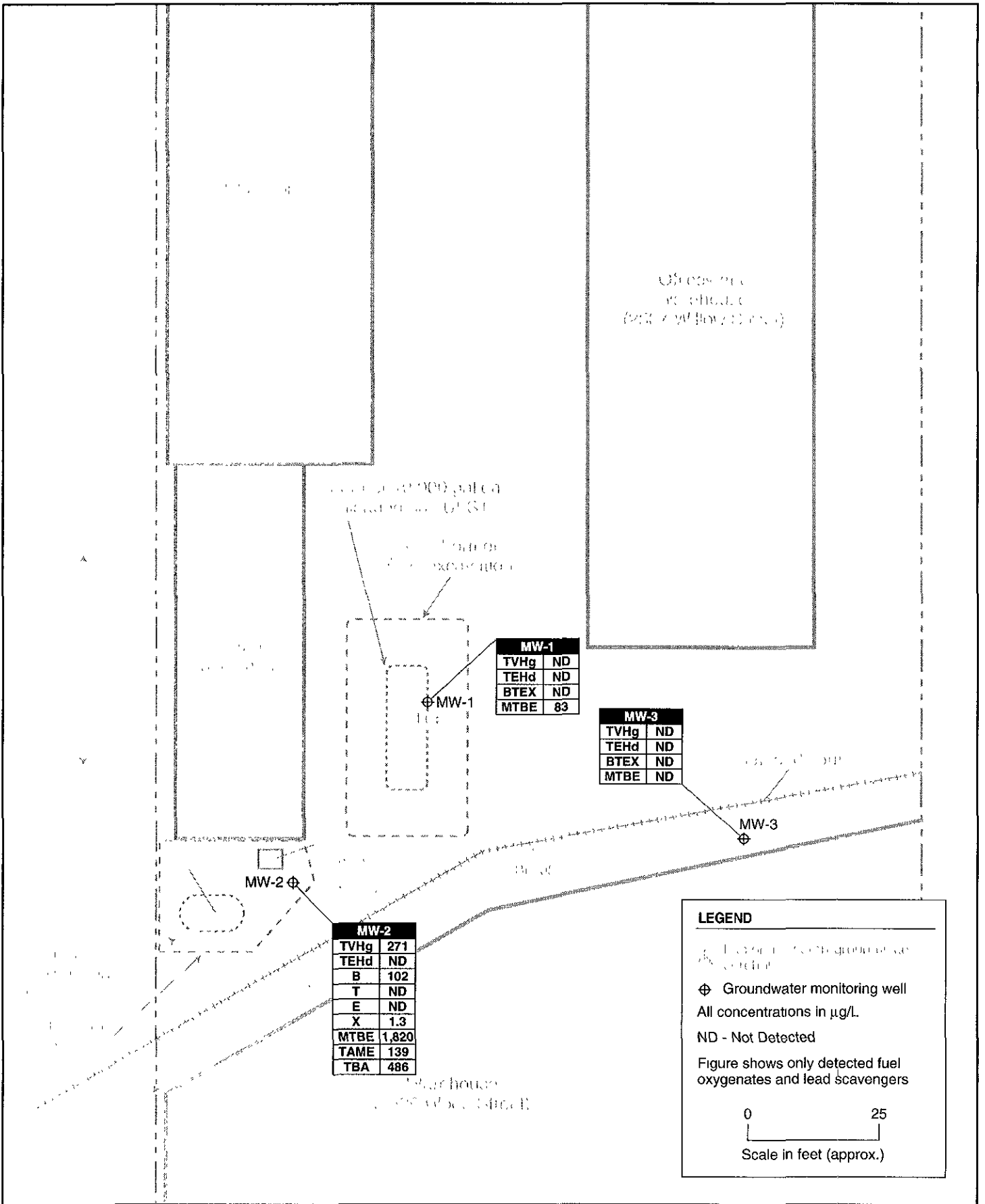
TEHd = Total extractable hydrocarbons – diesel range.

TVHg = Total volatile hydrocarbons – gasoline range.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region, Environmental Screening Levels (RWQCB, 2004).

ND = Not detected above method reporting limits

NLP = No level published.



**NOVEMBER 2004 GROUNDWATER ANALYTICAL RESULTS**

2526 Wood Street  
Oakland, CA

By: MJC

DECEMBER 2004

**Figure 4**

**★ Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting

## OTHER SITE CONTAMINANTS

Fuel oxygenates (TAME and TBA) were detected in the current event at 139  $\mu\text{g/L}$  and 486  $\mu\text{g/L}$ , respectively, in well MW-2. DIPE was not detected in any site wells in any of the site monitoring wells during this event.

Groundwater contaminants detected in the current event in excess of ESL criteria include gasoline, benzene, MTBE, and TBA.

Neither lead scavengers nor diesel were detected in any of the wells during this event.

## **5.0 HYDROLOGIC AND HYDROCHEMICAL TREND EVALUATION**

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This section evaluates the observed hydrologic and hydrochemical trends with regard to plume stability and contaminant migration. A conceptual model (incorporating site lithology, hydrogeology, and hydrochemistry) is presented to explain the spatial extent and magnitude of the dissolved hydrocarbon plume.

### **YEAR 2004 WATER LEVEL TRENDS**

Appendix D contains historical groundwater elevation data, including groundwater elevation contour maps. Figure 5 shows a trendline of site groundwater elevations over the four quarters of monitoring in 2004. In general, groundwater elevations show a declining trend from January through August, followed by an increase (to approximately May 2004 levels) in November 2004 (following several early rain events). This is a common seasonal trend observed in the upper water-bearing zone in the Bay Area region. An anomalously low groundwater elevation was measured in well MW-2 in August 2004, and may be reflective of more permeable excavation backfill conditions that allow water levels to drop more relative to conditions at the other two well locations.

The initial event (February 2004, with historical maximum groundwater elevations) showed a southerly groundwater flow direction, and subsequent groundwater contaminant distribution has shown at least an historical southerly groundwater flow. The subsequent three events have shown a westerly flow direction. It is not yet known if the February 2004 apparent flow direction change is an anomaly, or if this will be observed in future wet season monitoring events. If seasonal changes in apparent groundwater flow direction are observed, they are likely controlled lithologically (i.e., more permeable excavation backfill material in the MW-2 area respond differently than native materials at other well locations). Continued quarterly monitoring of groundwater elevations is warranted to confirm local groundwater flow direction.

### **YEAR 2004 HYDROCHEMICAL TRENDS**

Figures 6 and 7 show hydrochemical trend data for gasoline and MTBE, respectively.

Gasoline concentrations showed an overall decrease in all three wells between the February and August 2004 events (three events). While gasoline was not detected in wells MW-1 or MW-3 in

Figure 5: Historical Groundwater Elevations in Monitoring Wells  
2526 Wood Street, Oakland, California

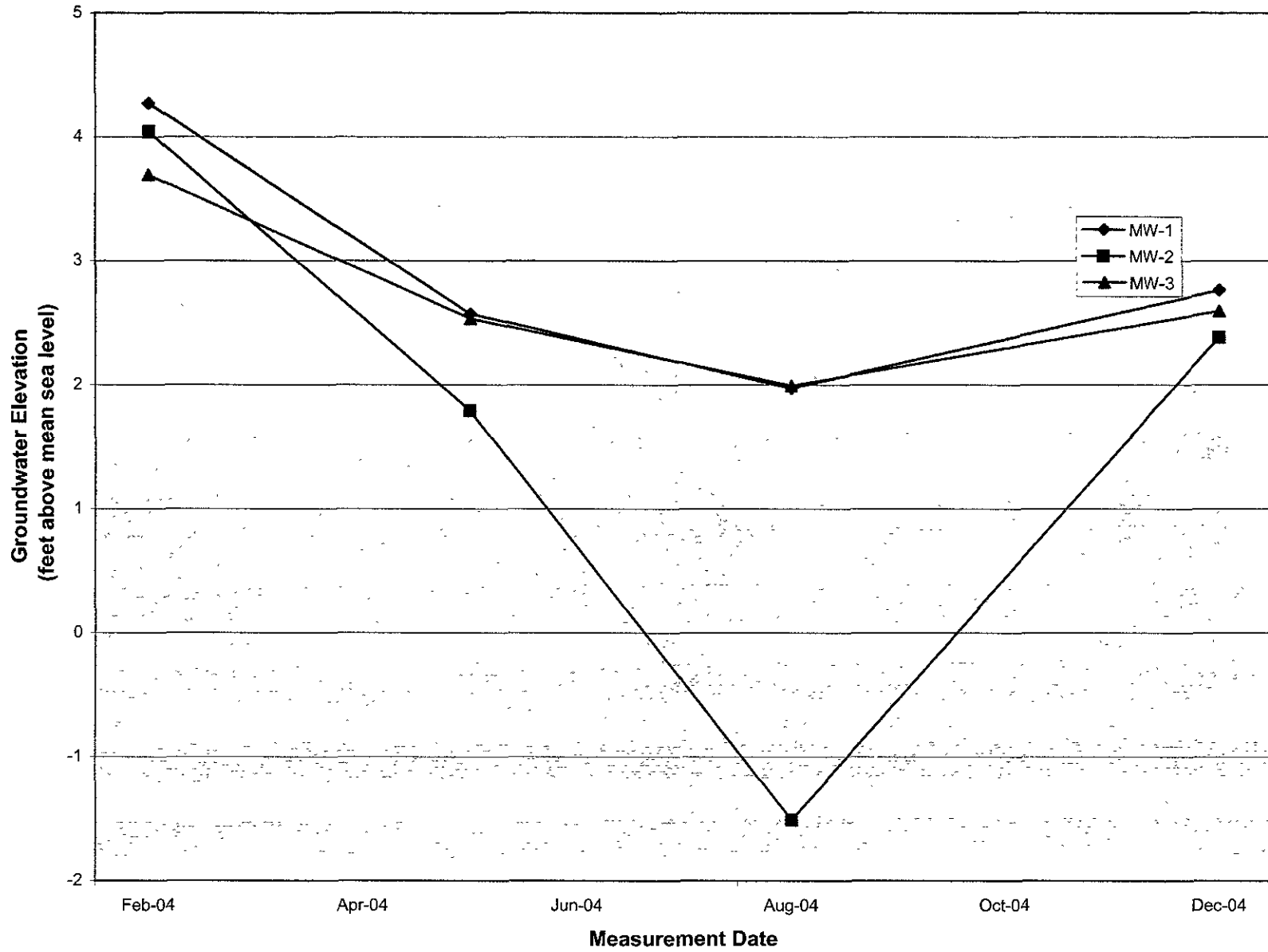


Figure 6: Historical Gasoline Hydrochemical Trends  
2526 Wood Street, Oakland, California

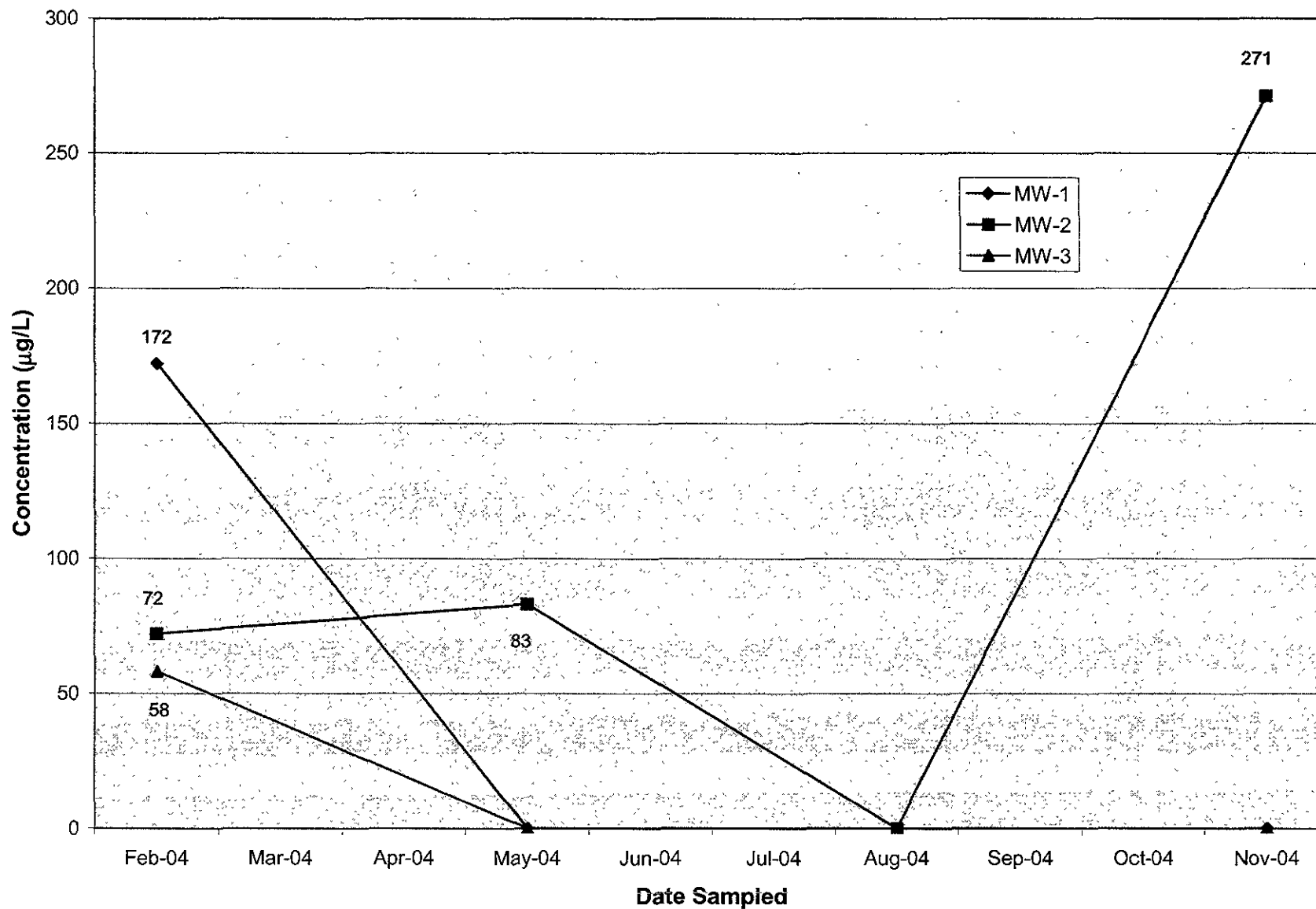
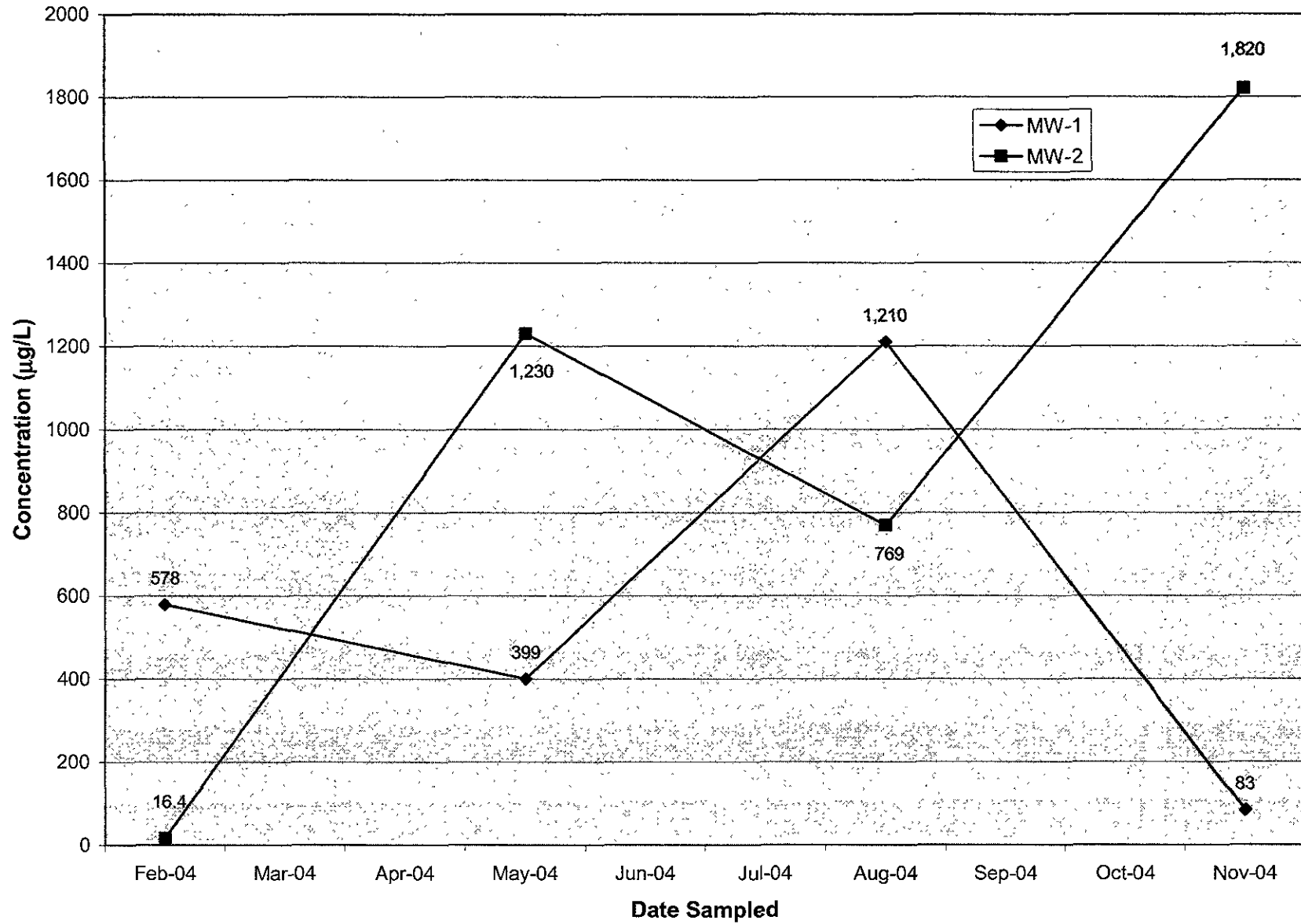


Figure 7: Historical MTBE Hydrochemical Trends  
2526 Wood Street, Oakland, California





November 2004, the gasoline concentration in downgradient well MW-2 was at a site historical maximum in that event. The initial (February 2004) detection of gasoline in well MW-3 may be a result of seasonal variations in local groundwater flow direction, which should be evaluated in future site groundwater monitoring.

MTBE (detected only in wells MW-1 and MW-2) showed a general increase between the February and August 2004 events in wells MW-1 and MW-2. In downgradient well MW-2, MTBE continued to increase (to a site historical maximum) in November 2004, while MTBE in well MW-1 decreased (to a site historical minimum).

MTBE concentrations in each event fluctuated between wells MW-1 and MW-2 (i.e., maximum MTBE in February 2004 was in MW-1, then in May 2004 was in MW-2, then in August 2004 was in MW-1, then in November 2004 was in MW-2). Gasoline showed a similar fluctuation in the February and May 2004 events (then gasoline was not detected in MW-1 in September and November 2004). This fluctuation may also be controlled, at least in part, by fluctuating groundwater levels.

The site data collected to date, including the hydropunch data, suggest that: 1) the two UFST excavations exert a seasonal hydrologic control on contaminant distribution due to infiltration; 2) there may be a source of contamination (i.e., residual soil contamination in the unsaturated zone) immediately east of well MW-2 (between the two UFST excavations) that desorbs during high water level conditions and migrates downgradient of the area of MW-2; and 3) plume migration appears to be south and west, depending on the season.

## **PLUME GEOMETRY AND MIGRATION INDICATIONS**

Appendix A contains historical groundwater contaminant data and maps showing contaminant distribution. MTBE is the sole contaminant with distribution suggestive of a plume; site gasoline concentrations since the initial (wet weather) event are sporadic and low. Based on data collected to date, the emerging conceptual model of the MTBE plume consists of two centers around the former UFST areas, subject to seasonal fluxes of contaminant flow in a south-to-west direction. Changes in well water levels and plume geometry suggest that groundwater recharge by direct infiltration into the unpaved ground surface is a controlling factor. Westerly flow is indicated in the low water level periods (dry season). In the rainy season, the backfill areas of the former UFSTs preferentially recharge (exhibit higher water levels than surrounding native soil). The infiltrated water comes in contact with the residual contamination in the UFST backfill areas until the winter recharge water pulses the contaminated groundwater to migrate to the south. The plume appears to flow within the water-bearing unit between 13.5 and 17.5 feet bgs.

The plume appears to be approximately 150 feet long and 100 feet wide, with the upgradient limit defined by the former UFSTs. Well MW-3 appears to define the lateral southern boundaries of the plume. Following initial detections in this well, no contamination has been detected in the subsequent three quarterly events. Examination of results from the October 2003 hydropunch sampling show that, outside of the UFST boreholes, the western and southern boreholes BH-02, BH-05, and BH-06 have the highest residual concentration of contaminants, while BH-07 and BH-08 along 26<sup>th</sup> Street showed trace to non-detected hydrocarbons. The contaminant geometry suggests that there is at least an historical groundwater flow direction to the south, possibly due to seasonal variations in local groundwater flow direction.

Concentrations of MTBE above ESL criteria extend offsite to the south (as represented by downgradient well MW-2) an unknown distance, at least in the May and August 2004 events. Concentrations of gasoline, benzene, and the fuel oxygenate TBA in downgradient well MW-2 exceeded ESL criteria for the first time in the most recent (November 2004) event. This suggests that the center of mass of the contaminant plume may be migrating downgradient.

Based on our experience, it is likely that the concentrations attenuate to below ESL criteria no more than 50 feet downgradient of the property line. However, continued quarterly groundwater monitoring in site wells is warranted to confirm that groundwater contaminant concentrations do not increase and/or there is no indication of significant plume migration.

## CLOSURE CRITERIA ASSESSMENT

The RWQCB generally requires that the following criteria be met before issuing regulatory closure of contaminant cases:

1. ***The contaminant source has been removed (i.e., the source of the discharge and obviously-contaminated soil).*** This criterion has been met as the USTs have been removed, and confirmation/borehole soil sampling has demonstrated only MTBE contamination in residual soils (and at concentrations between the most restrictive and the less restrictive RWQCB ESLs). There does not appear to be a significant mass of residual contaminated soil that will act as an ongoing source of groundwater contamination.
2. ***The groundwater contaminant plume is well characterized, and is stable or reducing in magnitude and extent.*** As discussed above, in our professional opinion, this criterion has not been met, and continued groundwater monitoring will be needed to demonstrate plume stability.
3. ***If residual contamination (soil or groundwater) exists, there is no reasonable risk to sensitive receptors (i.e., contaminant discharge to surface water or water supply wells) or to site occupants.*** This criterion is generally met by conducting a Risk-Based Corrective

Action (RBCA) assessment that models the fate and transport of residual contamination in the context of potential impacts to sensitive receptors (e.g., water wells, residential land use), including an evaluation of potential preferential migration pathways (i.e., underground utilities). Downgradient land use includes streets, then undeveloped land with overpasses, then San Francisco Bay (approximately 3,000 feet downgradient of the site). There appears to be no sensitive receptors that could be impacted by site-sourced contamination.

In our professional opinion, Alameda County Health will require a minimum of 1 year of continued quarterly groundwater monitoring and reporting prior to considering a petition for case closure. Additional site characterization (i.e., borehole drilling and sampling) and/or sensitive receptor or risk assessment work may also be required to obtain final closure. It is SES' opinion that the Year 2005 Annual Summary Report (January 2006) should contain an updated evaluation of plume stability and potential for closure, to be accompanied by a case closure petition if warranted.

## **6.0 SUMMARY CONCLUSIONS AND PROPOSED ACTIONS**

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### **SUMMARY AND CONCLUSIONS**

The available data support the following findings and conclusions:

- Two UFSTs containing gasoline and diesel were removed from the site in 2002 and 1995, respectively. Excavation confirmation soil samples indicated that MTBE was the sole contaminant of concern in soil, although pit water samples contained elevated levels of diesel, gasoline, and MTBE. A UFST closure documentation report discussing both UFST removals was submitted to the appropriate regulatory agencies in 2003.
- A Preliminary Site Assessment (exploratory borehole drilling and sampling program) was conducted in October 2003; activities included advancing and sampling eight exploratory boreholes to a maximum depth of 25 feet below grade. Hydrocarbon contamination was most pronounced in samples from the areas of the two former UFSTs and to the south-southwest.
- Three shallow site groundwater monitoring wells were installed, developed, and surveyed in February 2004.
- Site lithology ranges from low-permeability silts and clays to higher-permeability (and water-bearing) sands and gravels. There are two shallow water bearing zones: the top of the upper zone (potentially a seasonally-perched zone) is encountered at depths between 4 and 8 feet; the top of the third zone is encountered at depths between approximately 13.5 and 17.5 feet bgs. The lower water-bearing zone is underlain by a low-permeability, non-water-bearing zone.
- Groundwater flow in the initial (February 2004, height of the rainy season) was to the south, and in the subsequent three events has been to the west. The data show the expected seasonal trend of lower groundwater elevations in the dry season, increasing with the onset of rains. The site data suggest that backfill material in one or both of the former UFST excavations may be influencing apparent flow direction.
- The only soil contaminant detected above ESL criteria in residual soils (including UFST removal, borehole, and well installation phases) is MTBE, at locations within 15 feet of the former UFST excavations. Maximum detected MTBE concentration in soil is between the most restrictive (residential, groundwater used) and the least restrictive (commercial/ industrial, groundwater not used) RWQCB ESL criteria.

- During the dry season, groundwater contaminants above ESL criteria do not appear to extend offsite. In the rainy season, MTBE and TBA above ESL criteria likely extend offsite (to the west), likely no more than 50 feet beyond the property. Groundwater contamination to the south appears to be wholly constrained onsite.
- The distribution and magnitude of groundwater contamination, particularly gasoline and MTBE, has varied greatly in the three monitoring events. This variation is attributed to seasonal recharge mobilizing residual contamination in the areas of the former UFSTs, suggesting localized plume instability that warrants continued groundwater monitoring. Surface paving of the site area around the former UFSTs would result in less direct infiltration, and could result in a more stable plume.
- The current monitoring wells appear adequate to define local groundwater flow direction and to evaluate site-sourced hydrochemistry, although continued groundwater monitoring is warranted to ensure that groundwater contamination above regulatory agency levels of concern is not migrating offsite.
- The property owner is pursuing reimbursement from the State of California Underground Storage Tank Cleanup Fund (Fund) for regulatory agency-directed corrective action and investigation costs. The initial Claim Application was submitted to the Fund in February 2004.
- All required electronic uploads for previous work have been made to the California GeoTracker on-line database system.

## **PROPOSED ACTIONS**

- The property owner proposes to continue the quarterly groundwater monitoring well monitoring and sampling program, in accordance with the technical workplan approved by Alameda County Health. This will include electronic uploads of water level and groundwater contamination data for future monitoring events to the California GeoTracker system.
- The focus of continued groundwater monitoring will be to evaluate the magnitude and extent of groundwater contamination, particularly with regard to plume stability. If future monitoring indicate offsite migration of contamination, additional assessment activities—i.e., sensitive receptor; vicinity well survey; RBCA study; and/or additional exploratory boreholes/groundwater monitoring wells—will be considered.
- The property owner will continue to pursue reimbursement of eligible incurred corrective action costs from the California UST Cleanup Fund.



## 8.0 LIMITATIONS

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This report has been prepared for the exclusive use of Ms. Jeannette Elliott, the Elliot Family Trust, their authorized representatives, and the regulatory agencies. No reliance on this report shall be made by anyone other than those for whom it was prepared.

The findings and conclusions presented in this report are based on a review of previous investigators' findings at the site, as well as site investigations conducted by SES since 2003. This report has been prepared in accordance with generally accepted methodologies and standards of practice. The SES personnel who performed this limited remedial investigation are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the date of this report. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the activities completed.

**1995-1996 Diesel UFST Removal Sampling Analytical Results  
2526 Wood Street, Oakland, California**

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE	Total Lead
<b>July 1995 Excavation Confirmation Samples (concentrations in mg/kg) (sample locations subsequently overexcavated)</b>									
S-1 (south sidewall)	3	310	1,900	2.6	<1.4	26	100	NA	NA
S-2 (north sidewall)	4	< 1	< 0.5	<0.005	<0.005	<0.005	0.0054	NA	NA
<b>June 1996 Excavation Confirmation Soil Samples (concentrations in mg/kg)</b>									
VS-1	3	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.05	NA
VS-2	4	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.05	NA
VS-3	5	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.05	NA
VS-4	4	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.05	NA
VS-5	4	<1	<1	<0.005	<0.005	<0.005	<0.005	<0.05	NA
Soil ESLs		100 / 500	100 / 400	0.044 / 0.38	2.9 / 9.3	3.3 / 4.7	1.5 / 1.5	0.023 / 5.6	750 / 750
<b>July 1995 Stockpiled Soil Sample (concentrations in mg/kg)</b>									
SP1 (A-D) <sup>(a)</sup>	—	340	960	<0.005	<0.005	<0.005	<0.015	NA	NA
<b>June 1996 Stockpiled Soil Sample (concentrations in mg/kg)</b>									
STK (A-D)	—	< 25	340	0.80	1.2	0.71	<0.005	<0.05	NA
<b>October 1995 Pit Water Sample (concentration in µg/L)</b>									
W-1	4.5	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
Groundwater ESLs		100 / 640	100 / 500	1.0 / 46	40 / 130	30 / 290	13 / 13	5.0 / 18,000	2.5 / 2.5

Notes:

<sup>(a)</sup> 4-point composite sample.

TEHd = total extractable hydrocarbons – diesel range; TVHg = total volatile hydrocarbons – gasoline range; NA = sample not analyzed for this constituent.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites. First value is for sites where groundwater is a potential or current drinking water source. Second value is for sites where groundwater is not a potential or current drinking water source.



**April 2002 Gasoline UFST Removal Sampling Analytical Results  
2526 Wood Street, Oakland, California**

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE	Total Lead
<b>Excavation Confirmation Soil Samples (concentrations in mg/kg)</b>									
S-1 (west sidewall)	7'	NA	<1.0	<0.005	<0.005	<0.005	<0.005	0.24	8.5
S-2 (east sidewall)	7'	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	<3.0
B-1 (UFST base)	10'	NA	<1.0	<0.005	<0.005	<0.005	<0.005	0.078	3.1
D-1 (below dispenser)	3.5'	NA	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	11
Soil ESLs		100 / 500	100 / 400	0.044 / 0.38	2.9 / 9.3	3.3 / 4.7	1.5 / 1.5	0.023 / 5.6	750 / 750
<b>Stockpiled Soil Sample (concentrations in mg/kg)</b>									
STK 1A-1D	—	NA	<1.0	<0.005	<0.005	<0.005	<0.005	0.15	9.9
<b>Pit Water Sample (concentration in µg/L)</b>									
W-1	7'	NA	790	48	120	14	88	810	ND <sup>(a)</sup>
Groundwater ESLs		100 / 640	100 / 500	1.0 / 46	40 / 130	30 / 290	13 / 13	5.0 / 18,000	2.5 / 2.5

**Notes:**

<sup>(a)</sup> Not Detected – method reporting limit not specified in lab report.

TEHd = total extractable hydrocarbons – diesel range; TVHg = total volatile hydrocarbons – gasoline range; NA = sample not analyzed for this constituent.

ESLs = Regional Water Quality Control Board, San Francisco Bay Region "Environmental Screening Levels" for commercial/industrial sites. First value is for sites where groundwater is a potential or current drinking water source. Second value is for sites where groundwater is not a potential or current drinking water source.

**October 2003 Borehole Soil Analytical Results  
2526 Wood Street, Oakland, California**

Sample I.D.	Sample Depth (feet)	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE <sup>(a)</sup>	Fuel Oxygenates <sup>(b)</sup>
BH-01-4'	4	< 10.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	< 0.035 / 0.0017	ND
BH-02-6.5'	6.5	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<b>0.095 / 0.135</b>	<b>TBA = 0.061</b>
BH-02-16'	16	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035 / < 0.005	ND
BH-03-4.5'	4.5	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035 / < 0.005	ND
BH-03-15'	15	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035 / < 0.005	ND
BH-04-7'	7	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-04-18'	18	<b>2.0</b>	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-05-6'	6	<b>2.0</b>	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<b>0.094 / 0.026</b>	NA
BH-05-15.5'	15.5	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<b>0.046 / 0.0025</b>	NA
BH-06-8.5'	8.5	<b>1.3</b>	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-06-15.5'	15.5	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-06-19.5'	19.5	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-07-6'	6	<b>2.2</b>	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-07-15.5'	15.5	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-08-10'	10	< 1.0	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
BH-08-19.5'	19.5	<b>2.0</b>	< 3.0	< 0.005	< 0.005	< 0.005	< 0.015	<0.035	NA
<b>Soil ESLs</b>		100 / 500	100 / 400	0.044 / 0.38	2.9 / 9.3	3.3 / 13	1.5 / 1.5	0.023 / 5.6	TBA = 0.073 / 110

**Notes:**

<sup>(a)</sup> First value is quantification by EPA Method 8021b; second value is confirmation quantification by EPA Method 8260B.

<sup>(b)</sup> Table reports only detected fuel oxygenates. Full list of analytes is included in Appendix D.

TEHd = total extractable hydrocarbons – diesel range; TVHg = total volatile hydrocarbons – gasoline range; TBA = tertiary butyl alcohol; ND = not selected above method reporting limits; NA = not analyzed for these constituents.

All concentrations are in mg/kg.

**October 2003 Borehole Groundwater Analytical Results  
2526 Wood Street, Oakland**

Sample I.D.	TEHd	TVHg	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE <sup>(a)</sup>	Fuel Oxygenates <sup>(b)</sup>
BH-01-GW	120	2,960	< 0.30	< 0.30	< 0.30	< 0.60	1,020 / 764	TAME = 4.7 TBA = 93
BH-02-GW	160	107	< 0.30	< 0.30	< 0.30	< 0.60	103 / 84	ND
BH-03-GW	470	437	1.0	1.9	16	4.1	69 / 55	TBA = 10
BH-04-GW	< 100	< 50	< 0.30	< 0.30	< 0.30	< 0.60	5.0 / 1.1	NA
BH-05-GW	< 100	1,370	< 0.30	< 0.30	< 0.30	< 0.60	737 / 606	NA
BH-06-GW	< 100	92	< 0.30	< 0.30	< 0.30	< 0.60	70 / 59	NA
BH-07-GW	< 100	52	< 0.30	< 0.30	< 0.30	< 0.60	12 / 8.0	NA
BH-08-GW	< 100	< 50	< 0.30	< 0.30	< 0.30	< 0.60	< 5.0	NA
<b>Groundwater ESLs</b>	100 / 640	100 / 500	1.0 / 46	40 / 130	30 / 290	13 / 13	5.0 / 18,000	TAME = NLP TBA = 12 / 18,000

Notes:

<sup>(a)</sup> First value is quantified by EPA Method 8021b; second value is quantified by EPA Method 8260B.

<sup>(b)</sup> Table reports only detected fuel oxygenates. Full list of analytes is included in Appendix D.

TEHd = total extractable hydrocarbons – diesel range; TVHg = total volatile hydrocarbons – gasoline range; TAME = tertiary-amylnmethylether; TBA = tertiary butyl alcohol; ND = not selected above method reporting limits; NA = not analyzed for these constituents; NLP = no level published.

All concentrations are in mg/L.

**Historical Groundwater Monitoring Well Groundwater Analytical Results (µg/L)  
2526 Wood Street, Oakland**

Sample ID.	TEHd	TVHg	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE <sup>(a)</sup>	Fuel Oxygenates <sup>(b)</sup>
<b>February 2004 Event</b>								
MW-1	<50	172	1.2	<0.5	<0.5	<1.00	578	TAME = 3   TBA = 19
MW-2	<50	72	<0.5	<0.5	<0.5	<1.00	16.4	ND
MW-3	<50	58	<0.5	0.6	<0.5	<1.00	<0.5	ND
<b>May 2004 Event</b>								
MW-1	<50	< 50	<0.5	<0.5	<0.5	<1.00	399	TAME = 2
MW-2	<50	83	<0.5	<0.5	<0.5	<1.00	1,230	TAME = 52   DIPE = 0.6 TBA = 243
MW-3	<50	< 50	<0.5	<0.5	<0.5	<1.00	<0.5	ND
<b>August 2004 Event</b>								
MW-1	<50	< 50	<0.5	<0.5	<0.5	<1.00	1,210	TAME = 3   TBA = 78
MW-2	<50	< 50	<0.5	<0.5	<0.5	<1.00	769	TAME = 6   TBA = 81
MW-3	<50	< 50	<0.5	<0.5	<0.5	<1.00	<0.5	ND
<b>November 2004 Event</b>								
MW-1	<50	< 50	<0.5	<0.5	<0.5	<1.00	83	ND
MW-2	<50	271	102	<0.5	<0.5	1.3	1,820	TAME = 139   TBA = 486
MW-3	<50	< 50	<0.5	<0.5	<0.5	<1.00	<0.5	ND

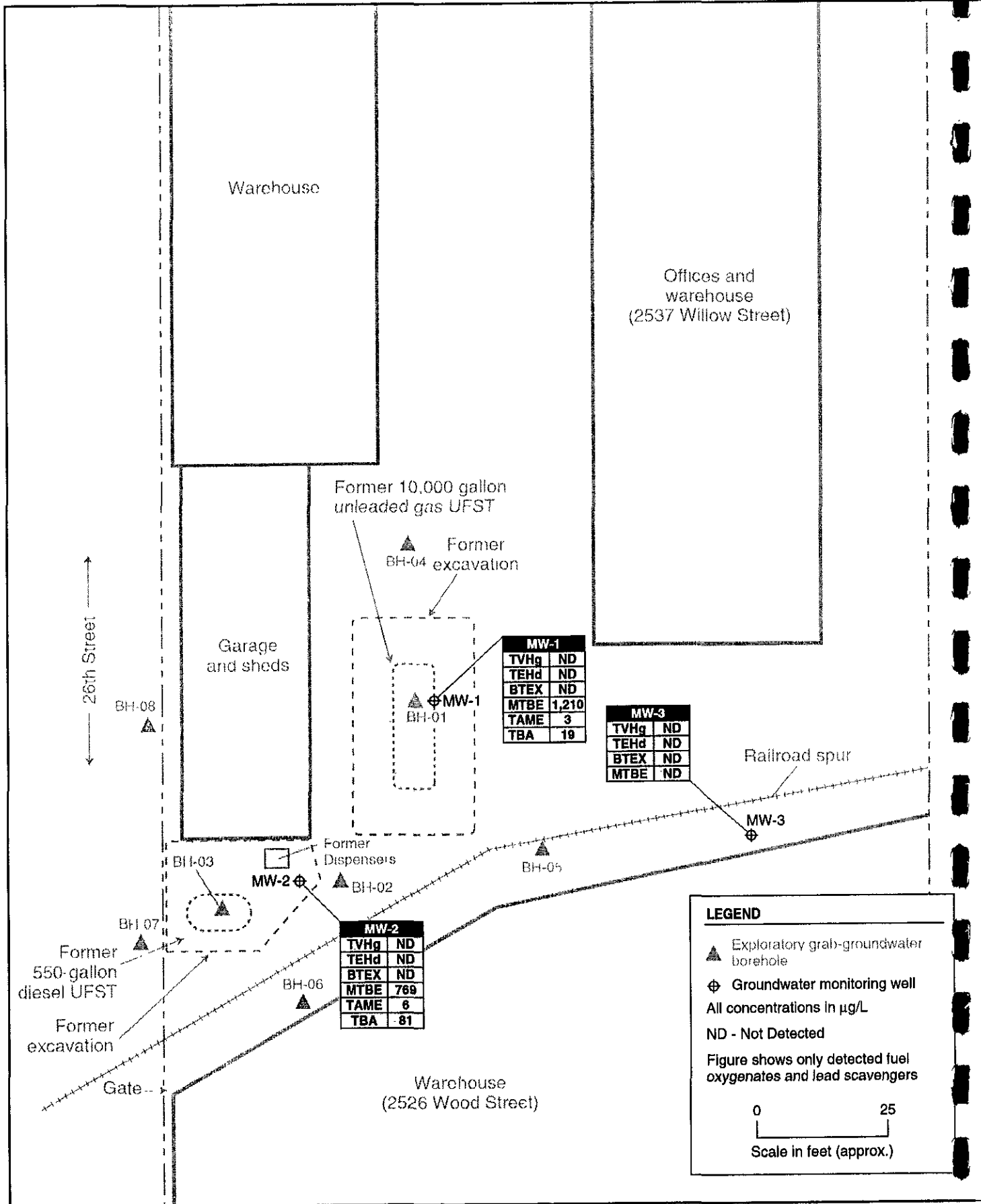
Notes.

<sup>(a)</sup> First value is quantified by EPA Method 8021b; third value is quantified by EPA Method 8260B.

<sup>(b)</sup> Table reports only detected fuel oxygenates and lead scavengers.

TEHd = Total extractable hydrocarbons – diesel range; TVHg = Total volatile hydrocarbons – gasoline range; TAME = Tertiary-amyl methyl ether; MTBE = Methyl tertiary-butyl ether;  
TBA = Tertiary butyl alcohol; DIPE = Di-isopropyl ether

ND = Not selected above method reporting limits. NLP = No level published.



**AUGUST 2004 GROUNDWATER ANALYTICAL RESULTS**

2526 Wood Street  
 Oakland, CA

By: MJC

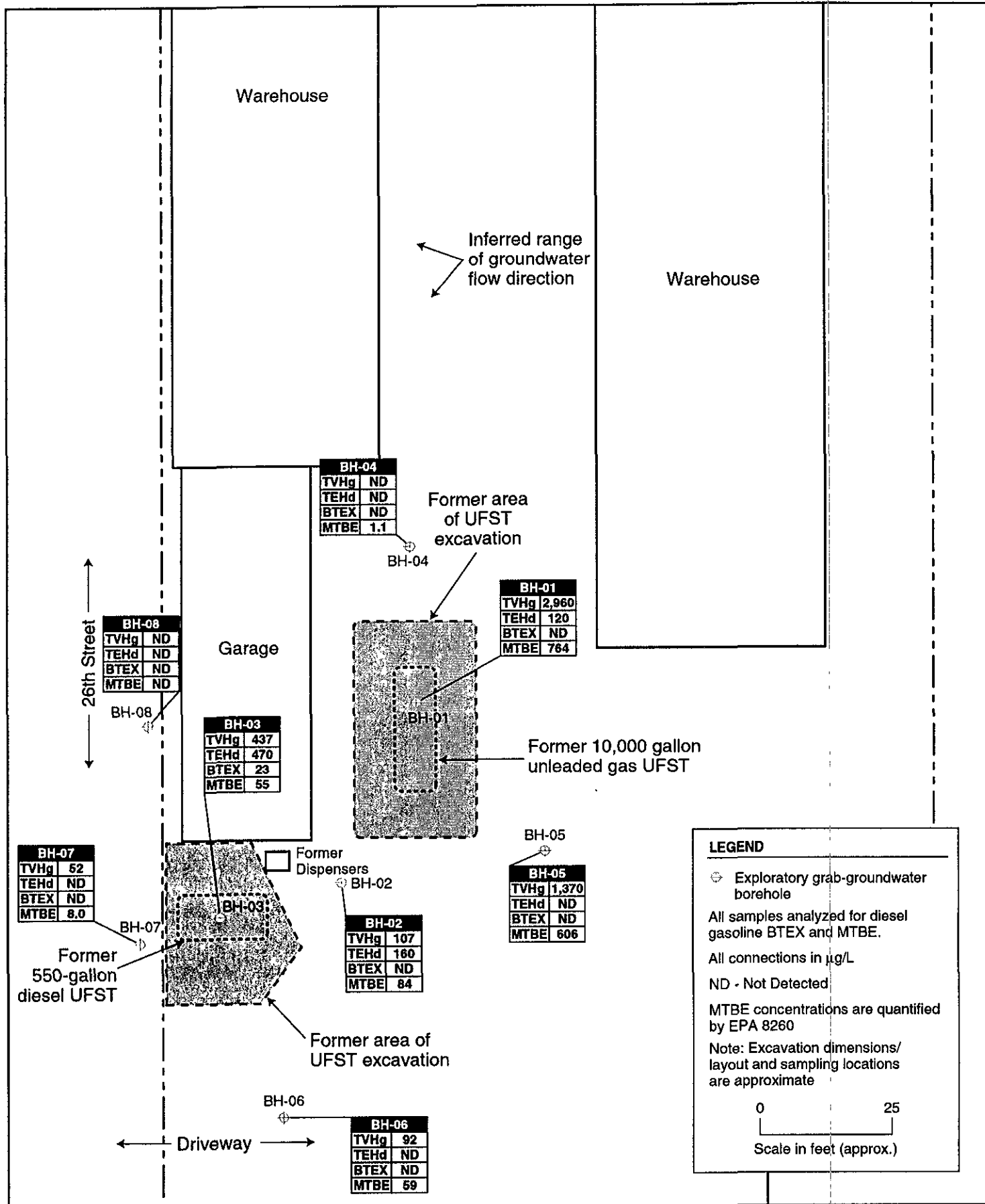
AUGUST 2004

**Figure 4**

★ **Stellar Environmental Solutions, Inc.**  
 Geoscience & Engineering Consulting

2003-41-33





**OCTOBER 2003 BOREHOLE LOCATIONS AND GRAB GROUNDWATER ANALYTICAL RESULTS**

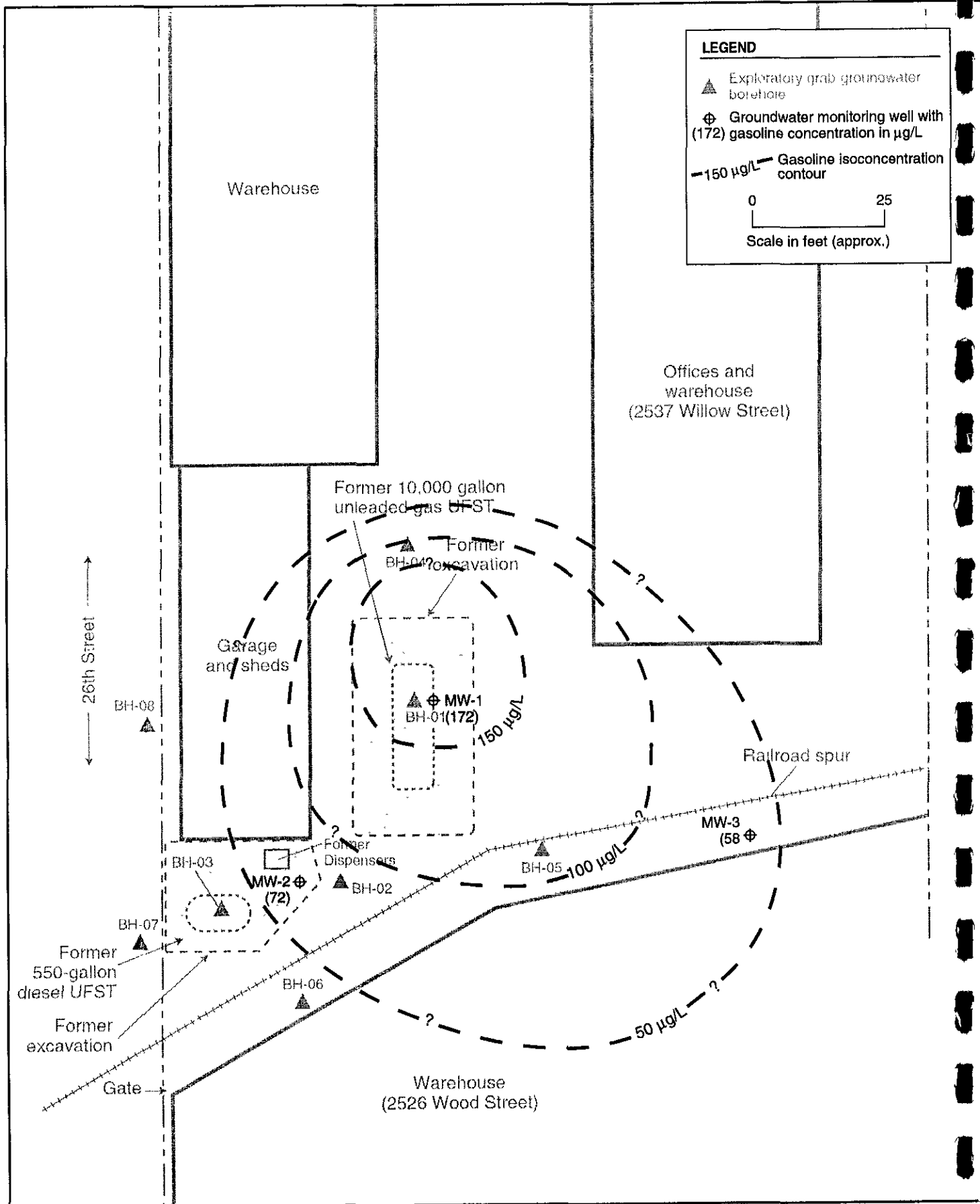
2526 Wood Street  
Oakland, CA

By: MJC

NOVEMBER 2003

**Figure 4**

**★ Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting



**FEBRUARY 2004 GASOLINE ISOCONCENTRATION CONTOURS**

2526 Wood Street  
Oakland, CA

By: MJC

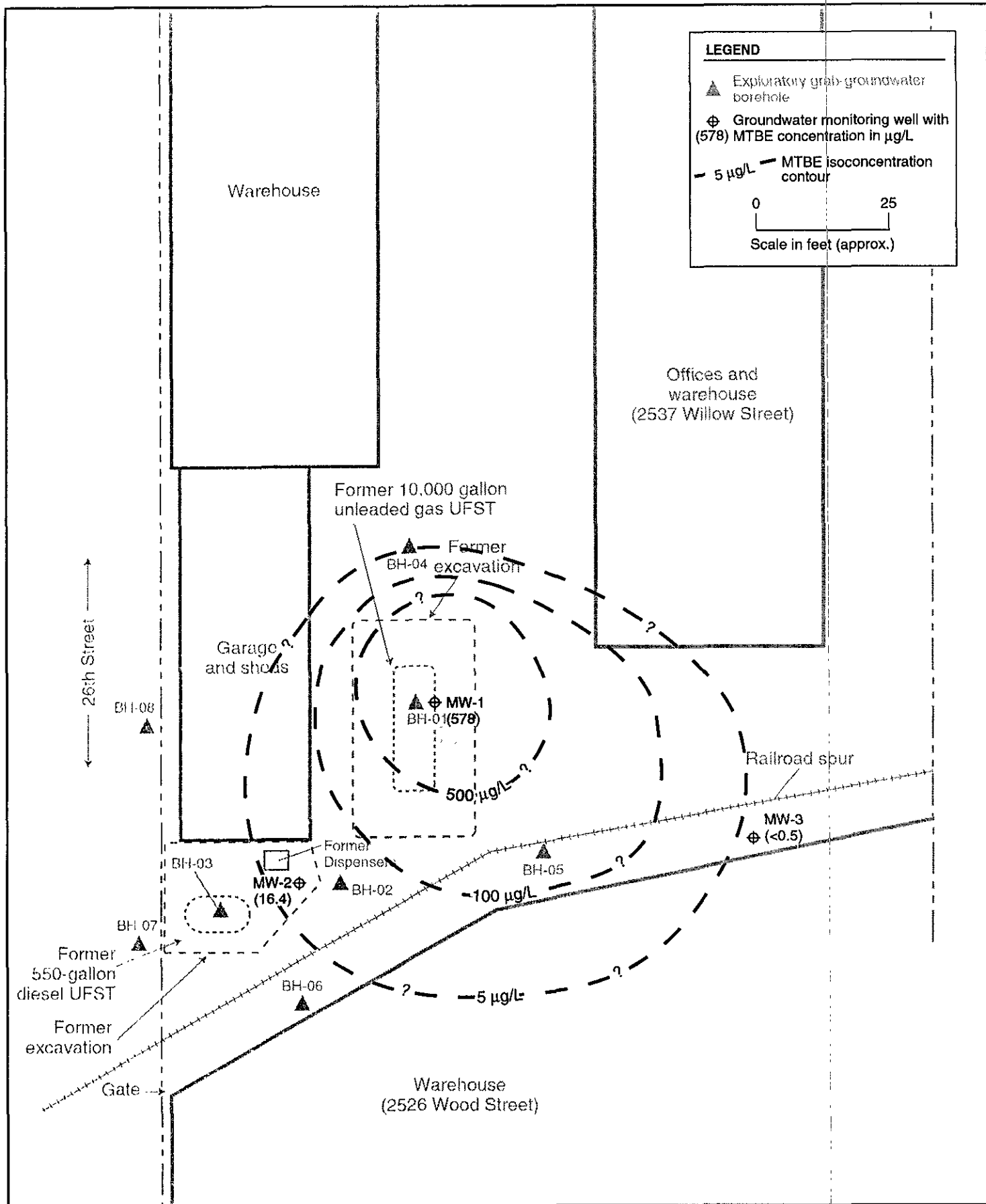
MARCH 2004

★ Stellar Environmental Solutions, Inc.  
Geoscience & Engineering Consulting

**Figure 6**

2003-41-26





**FEBRUARY 2004 MTBE ISOCONCENTRATION CONTOURS**

2526 Wood Street  
Oakland, CA

By: MJC

MARCH 2004

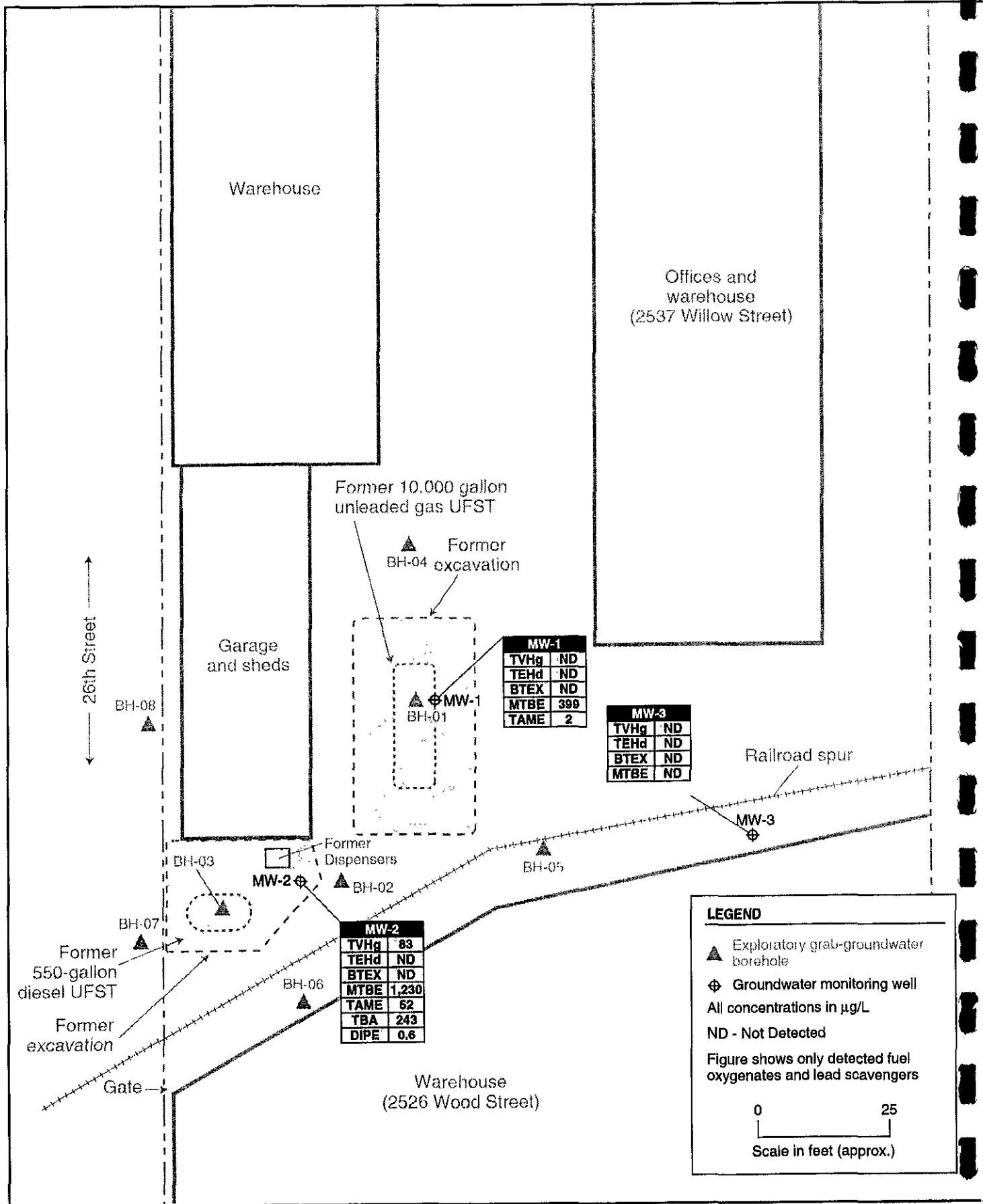
**Figure 7**

★ Stellar Environmental Solutions, Inc.  
Geoscience & Engineering Consulting

2003-41-27







**MAY 2004 GROUNDWATER ANALYTICAL RESULTS**

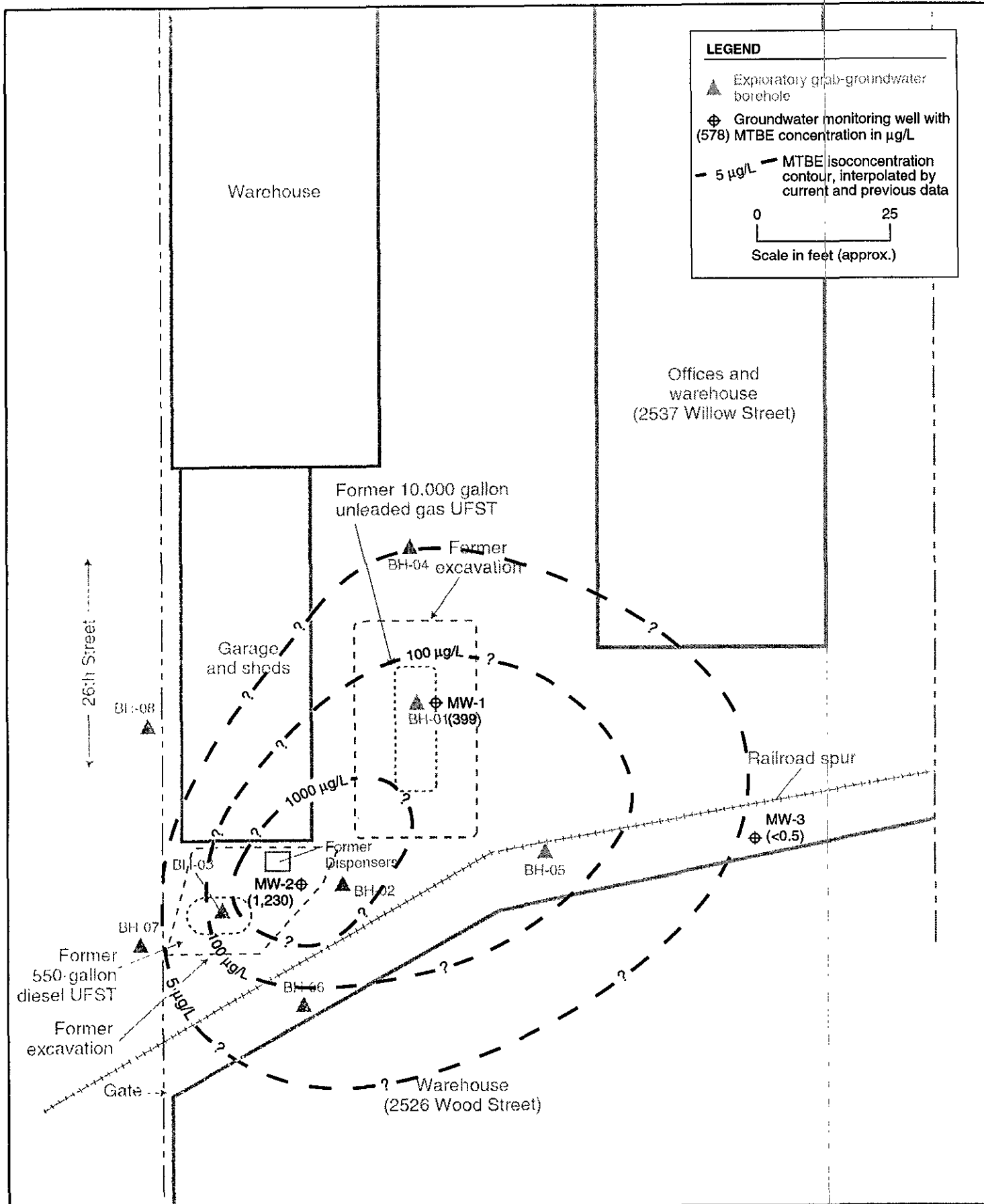
**2526 Wood Street  
Oakland, CA**

By: **MJC**

**JUNE 2004**

**Figure 4**

**★ Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting



**LEGEND**

- ▲ Expioratory grab-groundwater borehole
- ⊕ Groundwater monitoring well with (578) MTBE concentration in µg/L
- 5 µg/L - MTBE isoconcentration contour, interpolated by current and previous data

0 25  
Scale in feet (approx.)

**MAY 2004 MTBE ISOCONCENTRATION CONTOURS**

2526 Wood Street  
Oakland, CA

By: MJC

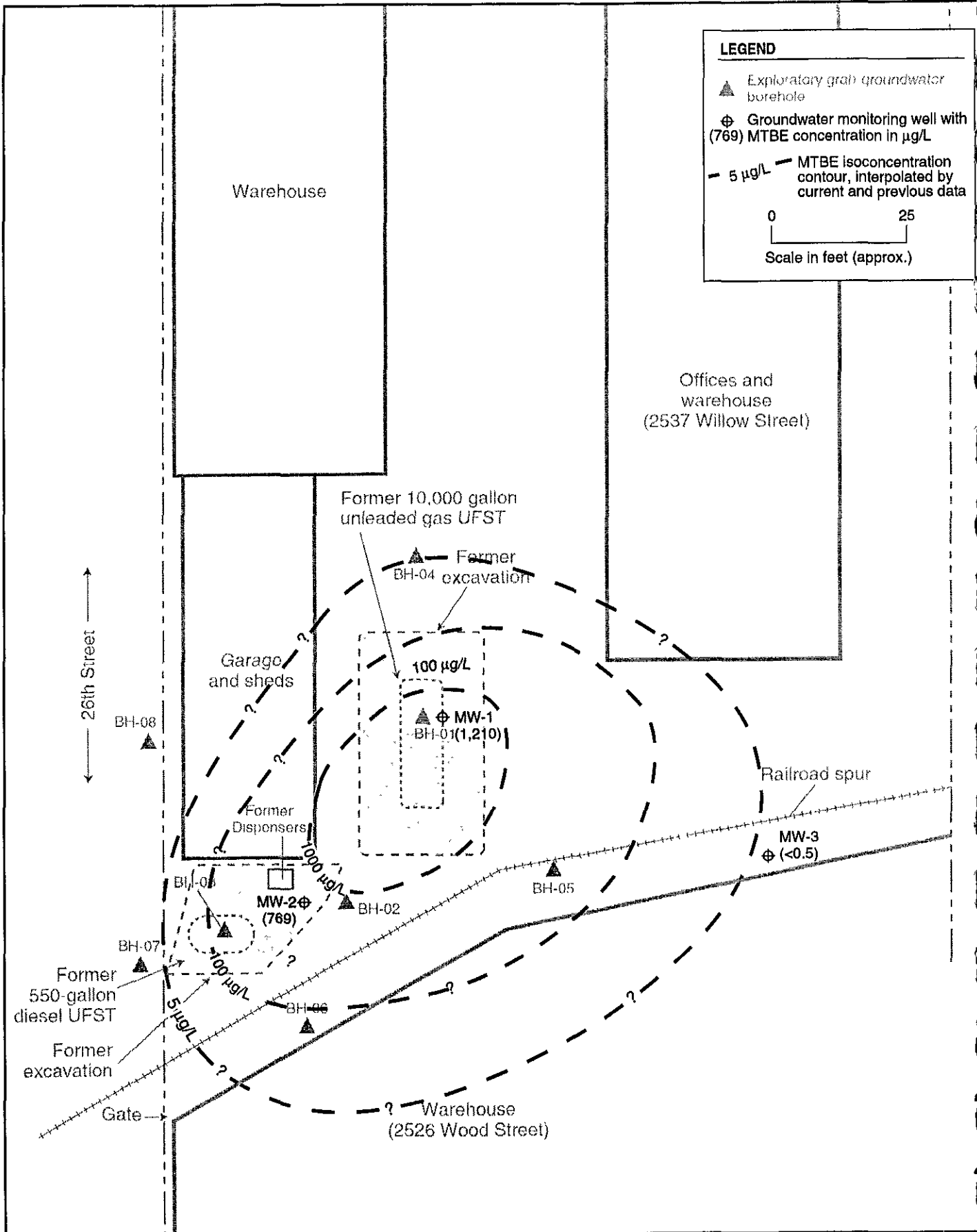
JUNE 2004

**Figure 5**

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Geoscience & Engineering Consulting

2003-41-31





**AUGUST 2004 MTBE ISOCONCENTRATION CONTOURS**

2526 Wood Street  
Oakland, CA

By: MJC

AUGUST 2004

**Figure 5**

★ Stellar Environmental Solutions, Inc.  
Geoscience & Engineering Consulting





# NORTH STATE LABS

## WELL PURGING/SAMPLING DATA

Project Number: 2003-41 Date: 11-22-04  
 Project / Site Location: 2526 WOOD ST.  
OAKLAND, CA

**Sampler/Technician:** SC

Casing Diameter (inches)	0.75	<u>2</u>	4	6
Casing Volumes (gallons)	0.02	<u>0.2</u>	0.7	1.52

**Well No.** MW-1

A. Total Well Depth	15.75
B. Depth To Water	4.11
C. Water Height (A-B)	11.64
D. Well Casing Diameter	2
E. Casing Volume	0.2
F. Single Case Volume (Cx E)	2.33
G. Case Volume(s) (Cx Ex 3)	6.99
H. 80% Recharge Level	6.44

**Well No.** MW-2

A. Total Well Depth	15.22
B. Depth To Water	3.91
C. Water Height (A-B)	11.31
D. Well Casing Diameter	2
E. Casing Volume	0.2
F. Single Case Volume (Cx E)	2.26
G. Case Volume(s) (Cx Ex 3)	6.78
H. 80% Recharge Level	6.17

**Purge Event**

Start Time: 1550  
 Finish Time: 1605

**Post Purge Measurement**

Depth to Water 4.20  
 Time Measured: 1610

**Recharge/Sample Time**

Depth to Water: 4.14  
 Time Measured: 1700

**Purge Event**

Start Time: 1525  
 Finish Time: 1540

**Post Purge Measurement**

Depth to Water 5.30  
 Time Measured: 1545

**Recharge/Sample Time**

Depth to Water: 4.20  
 Time Measured: 1640

**Well Fluid Parameters:**

Gals.	0	2.5	5.0	7.0
pH	7.53	7.45	7.46	7.45
T (°C)	18.1	18.6	18.3	18.4
Cond.	1518	1582	1568	1627
DO mg/L				3.02
DO %				26.4
Turbidity	55.4	17.04	15.48	15.64
ORP				

**Well Fluid Parameters:**

Gals.	0	2.5	5.0	6.8
pH	7.20	7.10	7.22	7.11
T (°C)	17.6	16.8	16.5	17.1
Cond.	781	785	743	823
DO mg/L				5.97
DO %				68.6
Turbidity	144.2	146.6	+200	164.8
ORP				

**Summary Data:**

Total Gallons Purged: 7.0  
 Purge device: DC-60  
 Sampling Device: DISP. BAILER  
 Sample Collection Time: 1705  
 Sample Appearance/Odor: CLEAR/H.C. ODOR

**Summary Data:**

Total Gallons Purged: 6.8  
 Purge device: DC-60  
 Sampling Device: DISP. BAILER  
 Sample Collection Time: 1645  
 Sample Appearance/Odor: CLEAR/H.C. ODOR

# NORTH STATE LABS

## WELL PURGING/SAMPLING DATA

Project Number: 2003-41 Date: 11-22-04  
 Project / Site Location: 2526 WOOD ST.  
OAKLAND, CA

Sampler/Technician: SC

Casing Diameter (inches)	0.75	2	4	6
Casing Volumes (gallons)	0.02	0.2	0.7	1.52

<p>Well No. <u>MW-3</u> MS/MSD</p> <table border="1"> <tr><td>A. Total Well Depth</td><td>18.20</td></tr> <tr><td>B. Depth To Water</td><td>4.35</td></tr> <tr><td>C. Water Height (A-B)</td><td>13.85</td></tr> <tr><td>D. Well Casing Diameter</td><td>2</td></tr> <tr><td>E. Casing Volume</td><td>0.2</td></tr> <tr><td>F. Single Case Volume (CxE)</td><td>2.77</td></tr> <tr><td>G. 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North State Labs

CA ELAP# 1753

90 South Spruce Avenue, Suite V • South San Francisco, CA 94080 • (650) 266-4563 • FAX (650) 266-4560

## Case Narrative

Client: Stellar Environmental Solutions

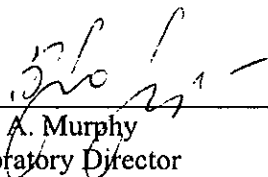
Project: FORMER RUSS ELLIOT/2526 WOOD ST

Lab No: 04-1843

Date Received: 11/23/2004

Date reported: 12/02/2004

Three water samples were received under chain of custody control for the analysis of gasoline and diesel by method 8015M, BTEX by method 8021B and fuel oxygenates by GC/MS method 8260B. All QC/QA results met the requirements and no errors occurred during the analyses. The LCS/LCSD results were reported for the analysis of gasoline and BTEX because there was not enough sample to analyze a MS/MSD.

  
\_\_\_\_\_  
John A. Murphy  
Laboratory Director

# Chain of Custody Record

04-1843

Laboratory North State Environmental  
 Address 80 South Spire Suite V  
50. San Francisco CA  
650-266-4563  
 Project Owner Mrs. Jeanette Elliott  
 Site Address 2526 Wood Street  
Oakland CA  
 Project Name Former Russ Elliott, Inc  
 Project Number 2003-41

Method of Shipment hand delivered  
 Shipment No. —  
 Airbill No. —  
 Cooler No. —  
 Project Manager Bruce Rucker  
 Telephone No. (510) 644-3123  
 Fax No. (510) 644-3859  
 Samplers: (Signature) SCOTT CASSADY

Lab job no. \_\_\_\_\_  
 Date 11-22-04  
 Page 1 of 1

Filtered	No. of Containers	Analysis Required				Remarks
		TVN-galvnlc (80ISM)	TEH-diesel (80ISM)	BTEX (EPA 8031)	Fuel Oxygenics (Lead Scavengers + MTBE (EPA 8060))	
		X	X	X	X	
		X	X	X	X	
		X	X	X	X	

	Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		
							Cooler	Chemical	
1	MW-1	—	11/22/04	1705	H <sub>2</sub> O	VOAs + 1-L Amber	Yes	HCl in VOAs	No
2	MW-2	—	↓	1645	↓	" "	↓	↓	↓
3	MW-3	—	↓	1625	↓	" 3-L Amber	↓	↓	↓

Provide a  
 COELT document  
 (EDD) as  
 well as hard-  
 copy report.

Relinquished by: Signature <u>Scott Cassidy</u> Printed <u>SCOTT CASSADY</u> Company <u>N.S.E.</u>	Date <u>11/23/04</u> Time <u>0900</u>	Received by: Signature <u>Eric Kim</u> Printed <u>Eric Kim</u> Company <u>NS Labs</u>	Date <u>11/23/04</u> Time <u>1500</u>	Relinquished by: Signature _____ Printed _____ Company _____	Date _____ Time _____	Received by: Signature _____ Printed _____ Company _____	Date _____ Time _____		
Turnaround Time: <u>2 week</u> Comments: <u>* Fuel Oxygenics to include: TAME, ETBE, DIPE + TSA (only)</u> <u>* Lead Scavengers include EDB + EDC (only)</u>				Relinquished by: Signature _____ Printed _____ Company _____				Received by: Signature _____ Printed _____ Company _____	

2000-00-01





SAMPLE RECEIPT CHECKLIST

Client Name: Stellar

Date 11/23/04

Ref/Subm No: 04-1843

Checked By: EK

Matrix: Soil:      Water: X Other:      Carrier Name:     

Shipping Container/Cooler In Good Condition? Yes:      No:      NA X

Custody Seals Intact on Container? Yes:      No:      NA X

Custody Seals intact on sample bottles/tubes? Yes:      No:      NA X

Chain of present? Yes: X No:     

Chain of Custody Signatures present and correct? Yes: X No:     

Chain of custody agrees with sample labels? Yes: X No:     

Samples in proper containers? Yes: X No:     

Sample containers Intact? Yes: X No:     

Sufficient sample volume for indicated tests? Yes: X No:     

All Samples received within holding times? Yes: X No:     

Container/Temp Blank temperature in compliance? Yes:      No:      N/A

Water - VOA vials have zero headspace? Yes: X No:     

Water- pH acceptable on receipt? Yes:      No:      N/A

pH adjusted - Preservative used: HNO3:      HCl: X H2SO4:      NaOH:       
Lot:      NA     

Corrective Action Record:

Client Contacted:      Date Contacted:      Person Contacted:     

Contacted by:      Regarding:      NA     

Comments:     

Corrective Action:



C E R T I F I C A T E O F A N A L Y S I S

Lab Number: 04-1843
Client: Stellar Env. Solutions
Project: FORMER RUSS ELLIOT/2526 WOOD ST

Date Reported: 12/02/2004

Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

Table with 6 columns: Analyte, Method, Result, Unit, Date Sampled, Date Analyzed. Contains three sections of data for samples 04-1843-01, 04-1843-02, and 04-1843-03.



C E R T I F I C A T E O F A N A L Y S I S

Quality Control/Quality Assurance

Lab Number: 04-1843
Client: Stellar Env. Solutions
Project: FORMER RUSS ELLIOT/2526 WOOD ST

Date Reported: 12/02/2004
Gasoline and BTEX by Methods 8015M/8021B
Diesel Range Hydrocarbons by Method 8015M

Table with 7 columns: Analyte, Method, Reporting Unit Limit, Blank, Avg MS/MSD Recovery, RPD. Rows include Gasoline Range Organics, Benzene, Toluene, Ethylbenzene, Xylenes, Diesel Fuel #2.

ELAP Certificate NO:1753

Reviewed and Approved

Signature of John A. Murphy, Laboratory Director



C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1843
Client : Stellar Env. Solutions
Project : FORMER RUSS ELLIOT/2526 WOOD ST

Date Sampled : 11/22/2004
Date Analyzed: 11/30/2004
Date Reported: 12/02/2004

Fuel Oxygenates by Method 8260B

Table with 4 columns: Laboratory Number, Client ID, Matrix, Analyte, and three columns of numerical data corresponding to samples 04-1843-01, 04-1843-02, and 04-1843-03.



C E R T I F I C A T E O F A N A L Y S I S

Job Number: 04-1843 Date Sampled : 11/22/2004
Client : Stellar Env. Solutions Date Analyzed: 11/30/2004
Project : FORMER RUSS ELLIOT/2526 WOOD ST Date Reported: 12/02/2004

Fuel Oxygenates by Method 8260B
Quality Control/Quality Assurance Summary

Table with columns: Laboratory Number, Client ID, Matrix, Analyte, Results, MS/MSD Recovery, %Recoveries, RPD, Recovery Limit, RPD Limit. Lists various compounds like Methyl-tert-butyl ether, Di-isopropyl ether, etc.

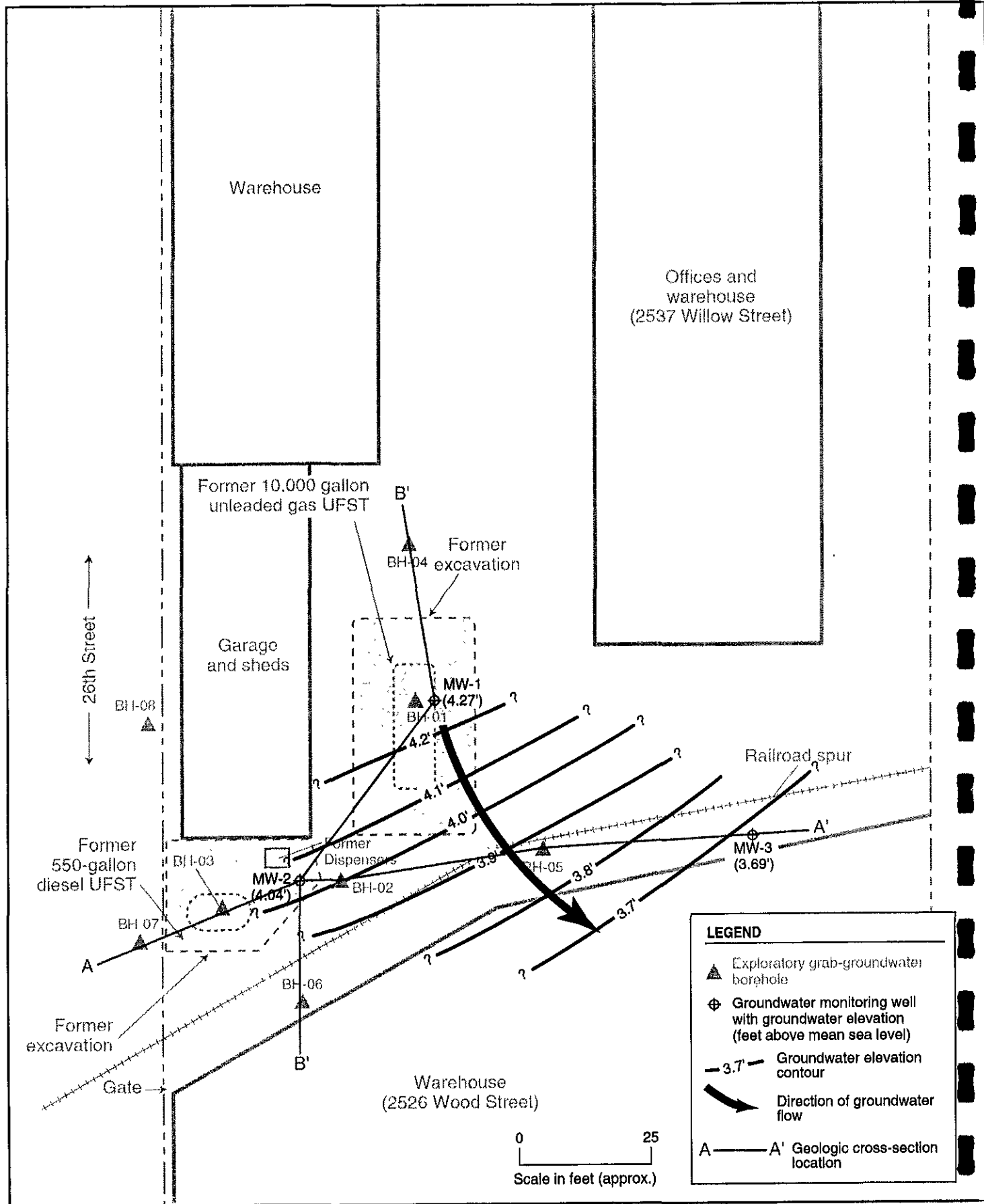
Reviewed and Approved

Signature of John A. Murphy
John A. Murphy
Laboratory Director

**Historical Groundwater Elevations in Monitoring Wells  
2526 Wood Street, Oakland, California**

(all elevations are in feet above mean sea level)

<b>Measurement Date</b>	<b>MW-1</b>	<b>MW-2</b>	<b>MW-3</b>
Feb-04	4.27	4.04	3.69
May-04	2.57	1.79	2.53
Aug-04	1.97	-1.51	1.99
Dec-04	2.76	2.38	2.59



**GROUNDWATER ELEVATION MAP — FEBRUARY 20, 2004**

**2526 Wood Street  
Oakland, CA**

By: **MJC**

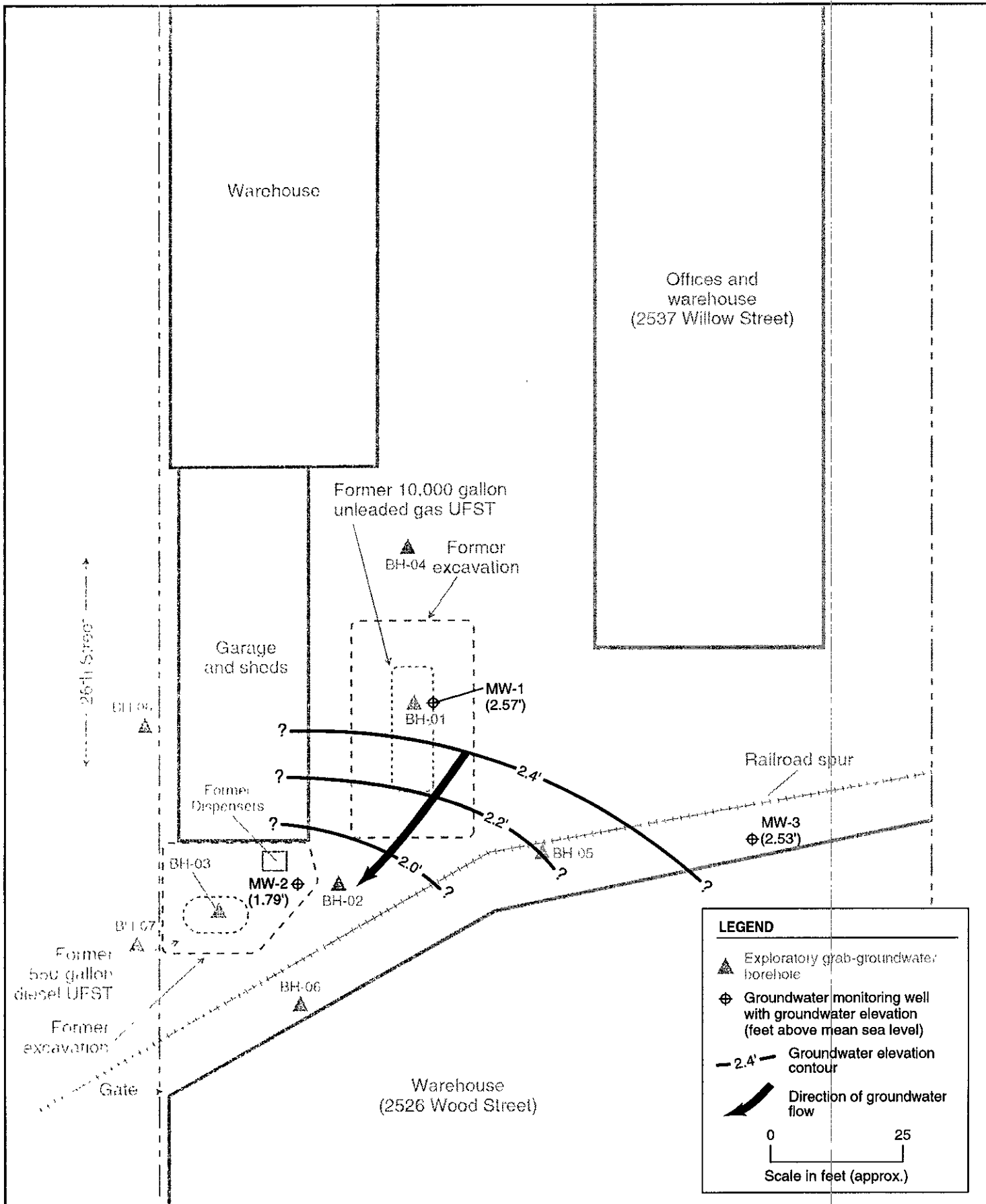
**MARCH 2004**

**Figure 3**

**★ Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting

2003-41-25





**GROUNDWATER ELEVATION MAP — MAY 18, 2004**

2526 Wood Street  
Oakland, CA

By: MJC

JUNE 2004

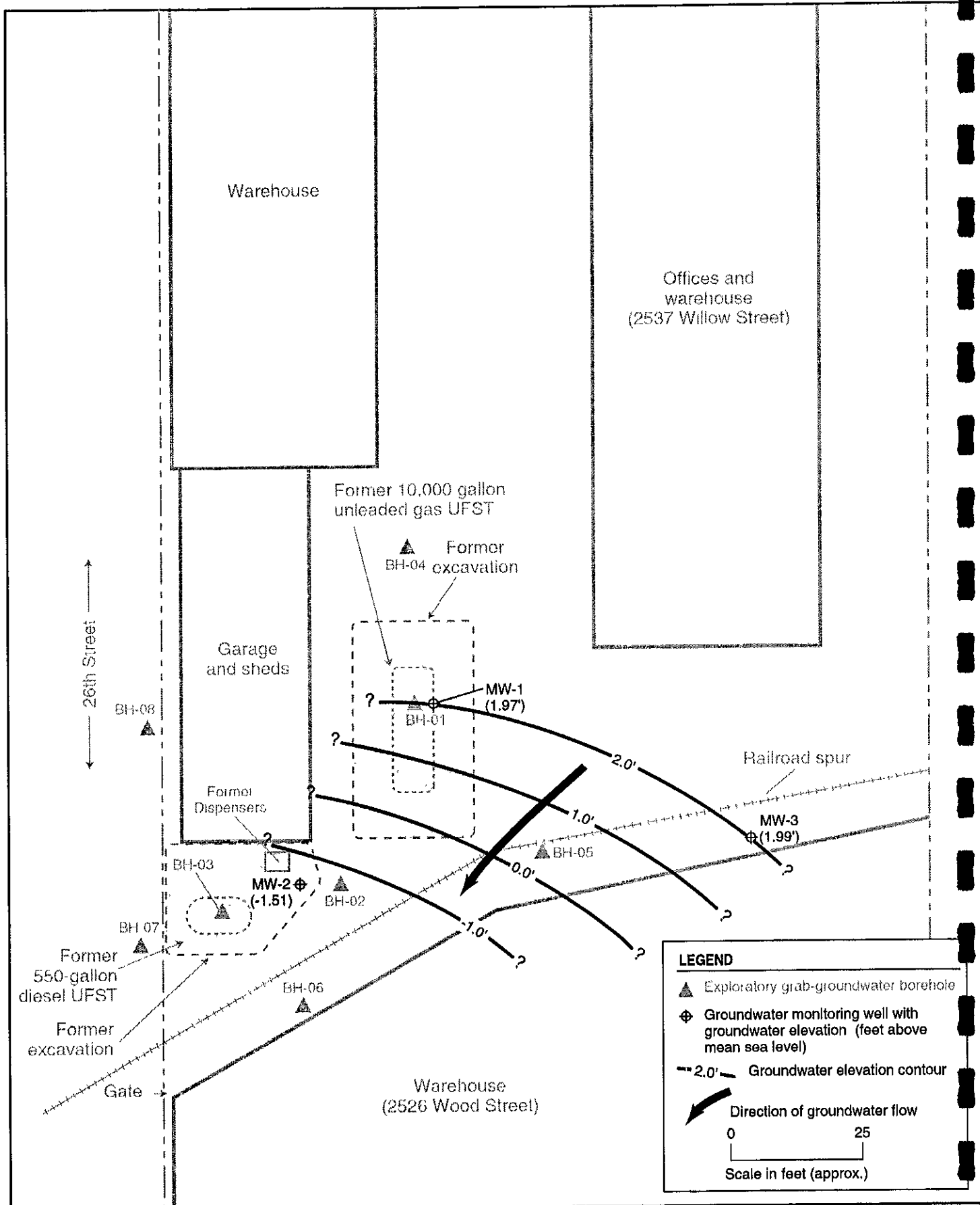
**Figure 3**

★ **Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting

2008-41-30







**GROUNDWATER ELEVATION MAP — AUGUST 12, 2004**

2526 Wood Street  
Oakland, CA

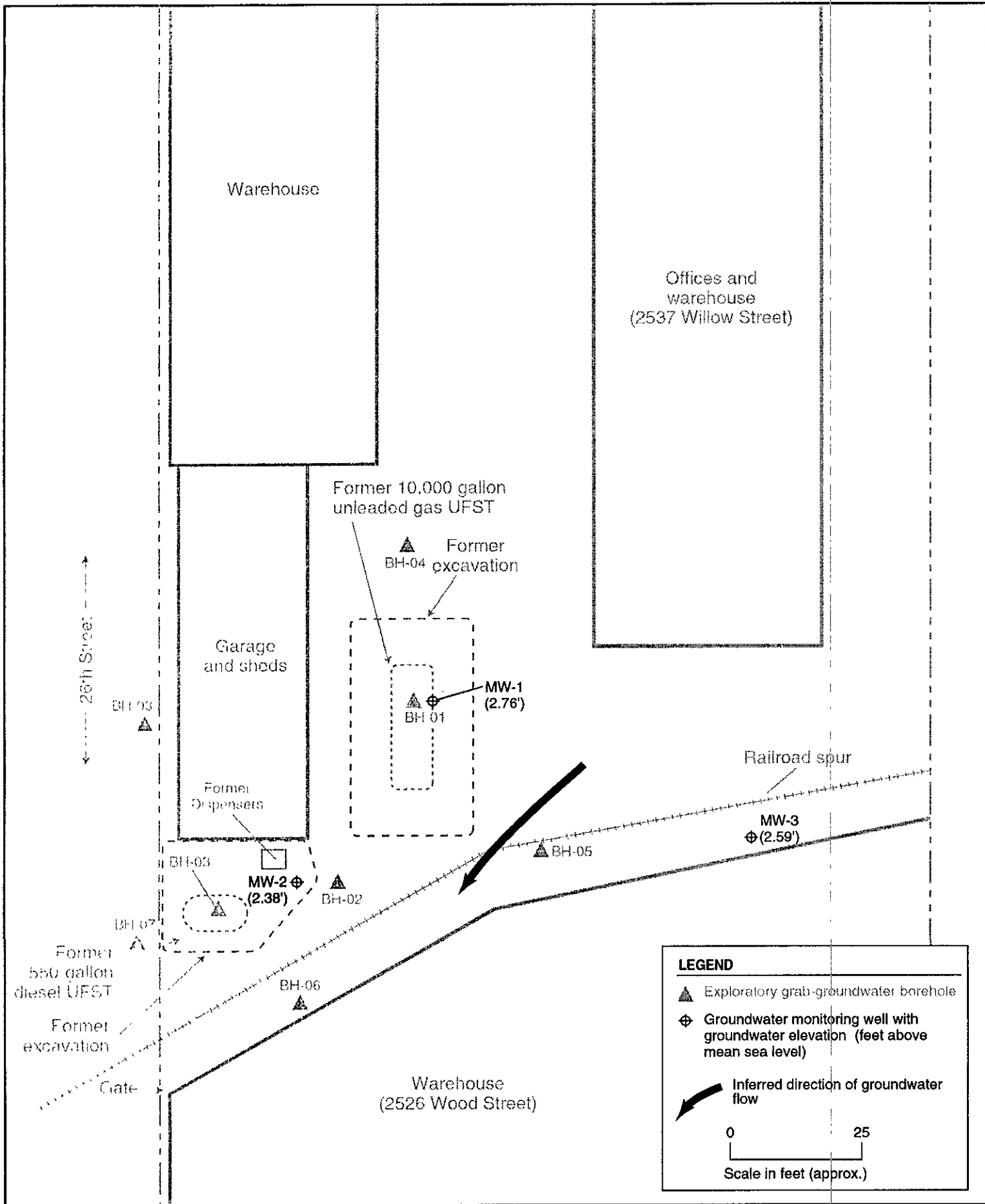
By: MJC

AUGUST 2004

★ Stellar Environmental Solutions, Inc.  
Geoscience & Engineering Consulting

**Figure 3**

2003-41-82



**GROUNDWATER ELEVATION MAP — NOVEMBER 22, 2004**

2526 Wood Street  
Oakland, CA

By: MJC

DECEMBER 2004

**Figure 3**

**Stellar Environmental Solutions, Inc.**  
Geoscience & Engineering Consulting

2003-41-36

