Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 9502-6577

Subject: Former Val Strough Chevrolet Site
327 34th Street, Oakland, CA
Site ID #3035, RO#0000134

Dear Ms. Jakub:

This letter is to accompany the *IRAP Soil and Groundwater Investigation Report* for the above-referenced site prepared by LRM Consulting, Inc. of Burlingame, CA.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions, please contact Mr. Mehrdad Javaherian of LRM Consulting, Inc. at 650-343-4633.

Sincerely,

Linda L. Strough
Trustee

cc: Mehrdad Javaherian, LRM Consulting, Inc., 1534 Plaza Lane, #145, Burlingame, CA 94010
Greggory Brandt, Wendel Rosen Black & Dean, 1111 Broadway, 24th Floor, Oakland, CA 94607

IRAP SOIL ANDGROUNDWATER INVESTIGAITON REPORT

Former Val Strough Chevrolet Site
327 34th Street, Oakland, California
Fuel Leak Case No. RO0000134

`Prepared by
LRM Consulting, Inc.
1534 Plaza Lane, #145
Burlingame, CA 94010

January 2009

LRM
consulting inc.

January 29, 2009

Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: **IRAP Soil and Groundwater Investigation Report**
Former Val Strough Chevrolet
327 34th Street, Oakland, California
Site ID #3035, RO #0000134

Dear Ms. Jakub:

LRM Consulting, Inc. (LRM) is pleased to present this *IRAP Soil and Groundwater Investigation Report* for the above-referenced site to the Alameda County Health Care Services Agency (ACHCSA). As described in the Interim Remedial Action Plan (IRAP) report prepared for the site (LRM, 2008a)[1], the primary sources of petroleum hydrocarbons (i.e., gasoline underground storage tank [UST], former fuel dispenser, and former waste-oil UST) have been removed. In addition, previous remedial activities at the site included 1.5 years of dual-phase extraction (DPE) operations, which removed an estimated 9,000 pounds of petroleum hydrocarbons, reaching asymptotic levels for both the magnitude and rate of mass removal. Despite these remediation efforts, as recent as December of 2007, elevated total petroleum hydrocarbon (TPH) as gasoline (TPH-g) concentrations (as high as 75,000 ug/L) remained at two onsite wells (MW2 and MW3) located within a residual source area at the site. This residual area was accordingly the subject of a December 2007 soil and grab groundwater investigation to define the extent of remaining hydrocarbons (LRM, 2008b)[2]; this investigation revealed localized, but elevated TPH-g levels (approximately 100,000 ug/L) consistent with those detected within the two onsite wells. These findings warranted further vertical definition of hydrocarbons within this residual source area and an evaluation of remedial alternatives. In response to these needs, LRM prepared an IRAP (LRM, 2008a), which proposed both characterization and remedial pilot testing activities for the site. In reviewing the IRAP, the ACHCSA approved the field investigation components of the proposed IRAP, which were performed in December 2008 and are the subject of this report (ACHCSA, 2008)[3].

Importantly, since the elevated hydrocarbon levels detected in December 2007/March 2008 within the residual source area, these concentrations have declined measurably over the past three quarters of routine groundwater monitoring, reaching significantly lower TPH-g levels (29,000 ug/L in MW2 and 11,000 ug/L in MW3) without a distinct change in groundwater level elevations. These observations, together with the distribution of dissolved oxygen (DO) oxygen

[1] LRM Consulting, Inc. (2008a). Interim Remedial Action Plan, Former Val Srough Chevrolet, 327 34th Street, Oakland, CA. August.
[2] LRM Consulting, Inc. (2008b). Supplemental Source Area Investigation Report, 327 34th Street, Oakland, California, February 29th.
[3] ACHCSA (2008). Comments on IRAP, 327 34th Street, Oakland, CA. December 5th.

in groundwater suggest that natural aerobic biodegradation has in large part been responsible for the observed decline in hydrocarbon concentrations. As such, the remedial alternative proposed as part of the IRAP focused on pilot testing using in-situ oxygen curtain (iSOC) technology, which enhances DO levels in groundwater in an effort to further aid and expedite aerobic biodegradation of hydrocarbons already taking place at the site. In reviewing the proposed IRAP pilot testing activities, ACHCSA requested additional information regarding the proposed pilot testing (ACHCSA, 2008); this information has since been provided by LRM via a formal response to comments (LRM, 2008c)[4], which is once again included herein as Appendix A.

Corresponding to the above activities, this report summarizes the activities associated with the soil and groundwater investigation portion of the IRAP approved by the ACHCSA and performed by LRM in December 2008. This information, together with the response to ACHCSA's comments on the pilot testing will allow for a final evaluation by the ACHCSA of the proposed iSOC pilot testing activities (Personal communication with Barbara Jakub of ACHCSA).

SITE BACKGROUND

Site Description

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

The site is situated approximately two miles east of San Francisco Bay at approximately 61 feet above mean sea level (msl) (EDR, 2003). The land surface in the vicinity slopes toward the south. The nearest surface water body is Lake Merritt, located approximately 1 mile south of the site (Figure 1).

Site Features: The site consists of a multi-level building and an adjacent parking lot (Figure 2). Two USTs, one gasoline and one waste-oil, were located beneath the sidewalk on the northern side of the property. A fuel dispenser was located inside the building (Figure 2). These primary sources of petroleum hydrocarbons were removed from the site in 1993. Eight groundwater monitoring wells are located at the site.

Underground Utilities: A box culvert for a former tributary of Glen Echo Creek is located approximately 17 feet below ground surface (bgs) in the eastern portion of the site (Figure 2). The culvert consists of a reinforced concrete box measuring 5 feet by 6 feet. During the winter of 1983, a section of the culvert collapsed and was replaced with a 5-foot-diameter pipeline.

[4] LRM Consulting, Inc. (2008c). Response to Comments on the IRAP, 327 34th Street, Oakland, CA, December 5th.

Sanitary sewer, electrical, and natural gas utilities are generally present at depths less than 2 feet bgs at the site. Approximately 40 feet north of the site, along the northern edge of 34th Street, a storm sewer pipeline flows toward the east and into the box culvert. Sanitary sewer lines run parallel to both 34th Street and Broadway, north and east of the site, respectively. A lateral pipeline located along the western edge of the site connects to the sanitary sewer line below 34th Street. Natural gas service is located on the east side of the property. Water service appears to enter the site from the north.

Water Supply Well Search: A 2003 report compiled by EDR indicates that there are no federal U.S. Geological Survey wells and no public water supply wells located within a 1-mile radius of the site. No water supply wells were identified by the Alameda County Department of Public Works within a ½-mile radius of the site (ETIC, 2003).

Summary of Previous Investigations and Monitoring Activities

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

Site Hydrogeology: In general, the site is underlain by silt and clay to depths ranging from approximately 15 to 20 feet bgs. Silty sand and fine-grained sand interbedded with thin clay intervals are encountered from approximately 20 feet bgs to the total explored depth of 35 feet bgs.

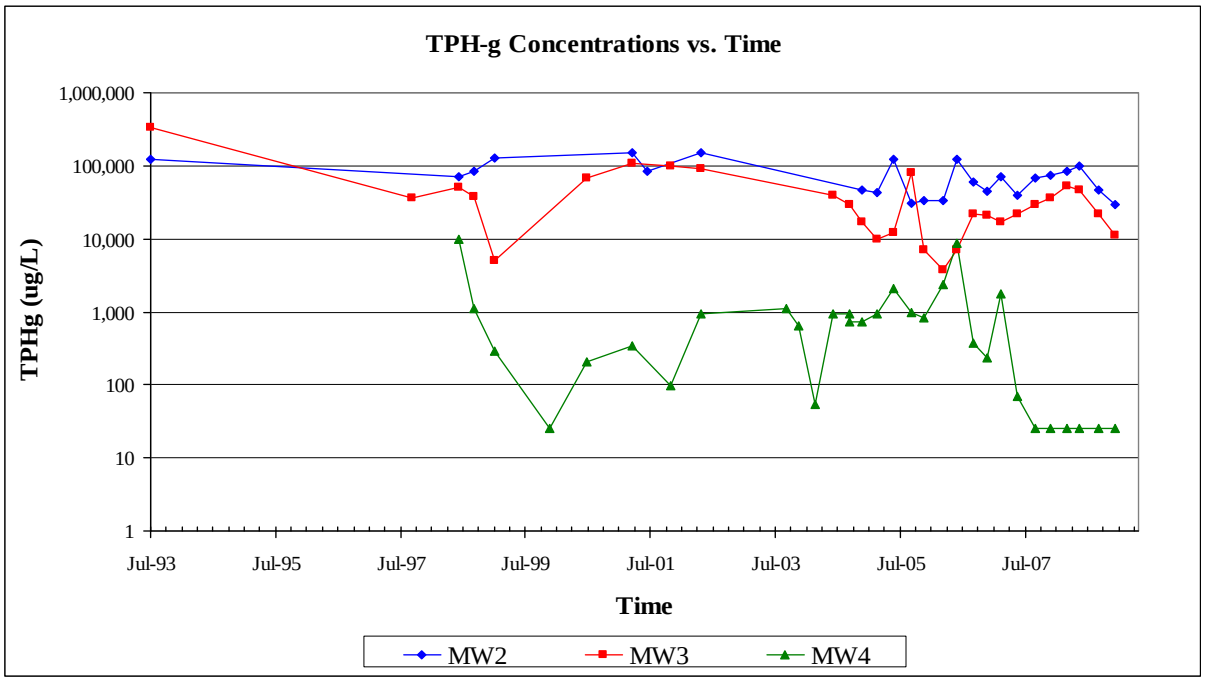
The depth to groundwater beneath the site has ranged from approximately 12.5 to 23 feet bgs. As shown in the modified rose diagram on Figure 2, the direction of groundwater flow is generally toward the southwest to south-southeast, with average hydraulic gradients ranging from approximately 0.01 to 0.03 foot/foot.

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

Petroleum Hydrocarbon Distribution in Groundwater: The highest concentrations of petroleum hydrocarbons have been detected in samples collected from wells MW2 and MW3, located within a localized residual source area (see Table 1). Correspondingly, separate phase petroleum hydrocarbons (SPH) were historically and intermittently detected in these two wells; however, no SPHs have been detected at the site since March 2004 in MW3 and June 2006 in MW2 (see Table 1).

In December 2007, TPH-g concentrations in MW2 and MW3 approximated 75,000 ug/l and 36,000 ug/L, respectively, later increasing to as much as 98,000 ug/L (see Table 2). To laterally define the extent of these concentrations within the residual source area, LRM (2008b) performed a soil and grab groundwater investigation in the immediate vicinity of MW2 and MW3 during December 2007; this investigation, included depth-discrete soil (see Table 2) and grab groundwater (see Table 3) sampling, encountering elevated levels of dissolved TPH-g in depth-discrete grab groundwater samples at concentrations as high as 110,000 ug/L in the immediate vicinity of MW2 (see Figure 3 and Table 3). In addition, the investigation revealed that at select locations near MW2, TPH-g concentrations were greater with depth (i.e, 40 feet bgs) than at the water table (SB4, SB6-see Figure 3 and Table 3), and/or otherwise exist at elevated levels at a depth of 40 feet bgs (SB7-see Figure 3); based on this finding, the IRAP for the site (LRM, 2008a) recommended additional vertical characterization within the residual source area, which was performed in December 2008 and documented later herein.

Importantly, since the December 2007 observation of elevated hydrocarbons in both wells (MW2 and MW3) and grab groundwater samples within the residual source area, routine quarterly groundwater monitoring results indicate a distinct declining trend in hydrocarbons within the residual source area. The figure below depicts TPH-g concentration trends over time for wells MW2 and MW3 within the residual source area, and MW4 located immediately downgradient of this location.



As indicated on the graph, for the last three quarters, TPH-g concentrations in MW2 and MW3 have exhibited a distinct declining trend. Specifically, at MW2, TPH-g has reduced from 98,000 µg/L to 29,000 µg/L over this time frame, while TPH-g concentrations at MW3 have declined

from 47,000 µg/L to 11,000 µg/L over the past three quarters. Worth noting is that these concentration declines have occurred while groundwater level elevations have risen back to within approximately 0.5 to 0.75 foot of the elevations measured in the March 2008 monitoring event, when the post-remediation peak concentration occurred in each well. Moreover, as shown on Table 1, benzene concentrations for both wells exhibit a similar trend to TPH-g concentrations, declining significantly over the past several rounds of monitoring. These observations suggests that natural attenuation within the residual source area is occurring and is consistent with suppression of DO levels in both MW2 and MW3 (see Table 1) in comparison with wells that are not impacted or are less impacted by hydrocarbons (e.g., MW1, MW5, MW7- see Table 1). This finding is consistent with the proposed pilot testing of iSOC technology in the IRAP (LRM, 2008b), which would significantly increase the DO levels in the residual source area and help enhance aerobic biodegradation of hydrocarbons in the residual source area.

Away from the residual source area, TPH-g levels in MW4 have also continued their observed decline over time and remain below detection limits over the past several rounds of monitoring (see above graph). Data from wells MW5 and MW6 also indicate the general absence of TPH-g and petroleum hydrocarbon compounds above detection limits over the past several years, with recent detections limited to sporadic and low levels of TPH-g (71 µg/L in MW5), benzene (0.77 µg/L in MW6), and MTBE (44 µg/L in MW6). Also worth noting is that cross-gradient well MW7 remains, as it has for the last several years, below detection limits for all compounds analyzed. Lastly, the first sample at newly installed well MW8[5] at the downgradient site boundary reported the absence of TPH-g, TPH-d, TPH-mo, and benzene. With the only detections in this well limited to negligible levels of toluene (0.64 µg/L), xylenes (0.78 µg/L), and MTBE (1.5 µg/L), the results from this well suggest that the extent of the hydrocarbon plume is essentially confined to locations within the site boundary.

In summary, in the absence of SPHs over the past several years, petroleum hydrocarbon concentrations within the residual source area wells have begun to decline over time, exhibiting a distinct declining trend over the past three quarters despite no significant changes in water level elevations. Away from the residual source area, hydrocarbon detections in wells remain largely undetected, with sporadic detections over time typically well below Environmental Screening Levels (ESLs) for groundwater used as a drinking water resource (Regional Water Quality Control Board San Francisco Bay Region, 2008). The hydrocarbon plume is largely confined to locations within the site boundaries and is stable. To the extent that higher levels of hydrocarbons have been detected in localized, depth-discrete grab groundwater samples within the residual source area (LRM, 2008a), proposed pilot testing activities for enhancing degradation of hydrocarbons within the residual source area (via an IRAP) are under review by the ACHCSA

Previous Interim Remediation Activities: In March 2004, ETIC performed a DPE pilot test at the site. As summarized in the June 2004 *Dual Phase Extraction Pilot Test and Interim Remedial Action Plan* (DPE and IRAP Report), vacuum was applied to source area wells MW2

[5] Installation of this well was part of the IRAP soil and groundwater investigation documented herein.

and MW3 while water and vacuum levels were measured in nearby monitoring wells. The DPE pilot test induced more than 1 foot of drawdown up to 50 feet from the extraction wells and an estimated radius of vacuum influence of 55 to 70 feet. Based on vapor flow rates and petroleum hydrocarbon concentrations in the vapor stream during the short-term pilot test, removal rates of approximately 90 pounds of petroleum hydrocarbons per day were estimated.

Based on the pilot test result, a DPE system was designed to consist of a knockout vessel to be used for separation of the soil vapor and water streams. A thermal oxidizer (with propane as a supplemental fuel) was proposed for treatment of extracted vapor, and aqueous-phase granular activated carbon was proposed for treatment of extracted groundwater. Between February 2005 and June 2006, ETIC operated the DPE system on site. Vacuum was applied to remove groundwater and soil vapor from up to two wells (MW2 and/or MW3). The system was temporarily shutdown on 30 January 2006 for conversion of vapor treatment from thermal oxidation to carbon filtration, and remained offline until 22 May 2006, when it was restarted. Because the mass removal rates by the DPE system had reached asymptotic levels and high petroleum hydrocarbon concentrations continued to exist in extraction wells MW2 and MW3 despite the DPE operation, the benefit of continuation of DPE in its current configuration was considered to be low and the DPE operation was ceased on 30 June 2006. ETIC estimated removal of approximately 9,000 pounds of petroleum hydrocarbons, reaching asymptotic levels for both the magnitude and rate of mass removal. The remediation system was subsequently dismantled and the skid-mounted DPE unit was from the site.

Proposed Additional IRAP Activities: In a August 25, 2008 IRAP report, LRM, in response to a request by the ACHCSA, proposed a series of site investigation and pilot testing activities to address the residual source area at the site. These activities included: 1) additional soil and grab groundwater sampling to vertically characterize the extent of hydrocarbons within the residual source area previously encountered during the supplemental investigation referenced above; 2) grab groundwater sampling along the existing culvert at the site to evaluate the potential for preferential migration of hydrocarbons along the culvert backfill; 3), placement of a groundwater monitoring well (MW8) at the downgradient site boundary to define the downgradient extent of hydrocarbons; and 4) pilot testing activities including injection and observation well installation and pilot testing protocols for implementation of iSOC technology within the residual source area.

In a letter dated December 5, 2008, the ACHCSA approved the proposed site investigation activities with select modifications listed. Additional information was also requested for the iSOC pilot testing, which were provided by LRM in its response to ACHCSA comment dated December 5, 2008 (see Appendix A). The investigation activities associated with the IRAP were completed in December 2008 and are accordingly the subject of the sections below.

IRAP SOIL AND GROUNDWATER INVESTIGATION ACTIVITIES

The scope of work performed for the soil and groundwater investigation activities related to the IRAP followed the approved portions of the IRAP (LRM, 2008a), incorporating the comments outlined by the ACHCSA (2008) and LRM's related responses (LRM, 2008c). This scope may be categorized as follows:

1. Oxygen diffusion well installation
2. Vertical soil and groundwater characterization within the residual source area;
3. Groundwater characterization along box culvert; and
4. Monitoring well installation at downgradient site boundary.

Per the request of the ACHCSA, these activities were supplemented by resurveying of all existing site wells to the NAVD 88 datum. The remaining activities proposed in the IRAP (LRM, 2008a) are awaiting final approval from the ACHCSA. Pre-field and field activities associated with the four above-referenced IRAP investigation activities are summarized below.

Pre-Field Activities

Prior to drilling, the ACHCSA was notified of the drilling schedule (more than 72-hours prior to drilling) and drilling permits were obtained from Alameda County Department of Public Works (ACDPW) (permits W2008 0901-0903). A Health and Safety Plan (HSP) was also prepared, while boring locations were marked, cleared by a utility contractor, and Underground Service Alert (USA) was notified.

Oxygen Diffusion Well Installation

On December 12, 2008, one well, designated as well O-1 and proposed for oxygen diffusion in the IRAP, was installed within the residual source area targeted for the iSOC pilot test (see Figure 4). This well was installed using hollow stem augers and a dril rig provided by RSI Drilling of Woodland, California, a state-licensed driller. After hand augering the first five feet to avoid utility conflicts, the well was completed to a depth of 40 feet bgs (see Appendix A for boring log). The drill cuttings were examined for lithologic information and evidence of contamination. After completion of drilling, the well was completed. The screened interval was 0.020 inch slotted PVC casing, two inches in diameter, and extending from approximately 15 to 40 feet bgs. Number 3 Monterey sand was placed in the annular space from the total depth to approximately 13 feet bgs. Approximately two feet of bentonite was placed over the sand pack and hydrated. Neat cement grout was used to complete the well seal to near the surface. A three-by-three-foot Christy box was installed over the well. Ms. Vicky Hamlin of ACDPW witnessed

the well seal placement. Once the ACHCSA has approved the proposed iSOC pilot testing, a baseline sampling of oxygen diffusion well O-1 and those immediately around it (i.e, wells within the zone of influence of the proposed pilot test), will be performed as outlined in the IRAP (LRM, 2008a).

Vertical Soil and Groundwater Characterization within Residual Source Area

Consistent with the approved portions of the IRAP, during the period of December 15 through 16, 2008, three deep soil borings (SB14 through SB16) were completed within the residual source area and directly adjacent to previously drilled shallow borings SB5, SB7, and SB8 (see Figure 4). The borings were completing using a Geoprobe dual casing system provided by Vironex of Pacheco, California, a stated-licensed driller. At these locations, the borings were completed with a dual casing system with 3.25-inch outer rods, and inner drive rods fitted with a sampler. The borings were continuously cored and all of the liners opened and logged for lithologic information and examined for evidence of contamination. Due to the diameter of the outer casing, the borings reached drilling refusal at approximately 55 feet bgs.

In all of these borings, a soil sample was collected at the capillary fringe and at approximately 50 and 55 feet bgs. Per the approved portions of the IRAP, grab groundwater samples were collected at first encountered groundwater and at depths corresponding to the bottom of the borings, where groundwater entered the borings. Specifically, in the first boring advanced (i.e, SB14), after reaching the total depth of 55 feet bgs, the outer casing was retracted to 50 feet, exposing the interval from 50 to 55 feet. A one-inch slotted PVC casing was placed in the borehole (five feet of screen). No groundwater entered the borehole within 30 minutes, and the boring was grouted through the casing with neat cement grout; however, soil samples were collected at depths of 23.3 feet bgs (capillary fringe), and in saturated soils at 50 and 55 feet bgs where groundwater did not enter the boring.

In subsequent borings SB15 and SB16, capillary fringe (23 feet bgs) and deep soil samples (50 feet bgs and 55 feet bgs) were accompanied by grab groundwater samples collected by leaving the borings open overnight, with the concurrence of Alameda County Public Works. Groundwater depth was measured at approximately 31 feet bgs in SB15, and at approximately 29 feet bgs in SB16 the next morning, when groundwater samples were collected. The borings were then sealed by installing neat cement grout through the casings. Boring SB15 dewatered during sampling after 8 VOAs were collected.

The subsurface samples selected for analyses were cut from the plastic liner sleeves and the ends were covered with teflon tape and plastic caps. The samples were labeled, entered on a chain of custody form, placed within individual ziplock bags, and then placed in a cooler, on ice, prior to delivery to the analytical laboratory. The grab groundwater samples were collected by inserting small diameter tubing into the one-inch PVC casing. The tubing was fitted with a stainless steel chuck ball tip which enabled the tubing to be used as a bailer and to surge groundwater to the

surface where it was decanted into sample containers. The samples were then handled as described above.

The subsurface conditions in borings SB14 and SB15 were relatively similar and consisted predominantly of clayey to sandy silt, with lesser amounts of silty sand. In SB14, the silty sand intervals, interbedded with silt, occurred between approximately 17 and 33 feet bgs, and in SB15, between 20 and 30 feet bgs. Below these depths, only silt was encountered (see boring logs in appendix A). Importantly, the silt would be expected to act as an aquitard, and no obvious signs of contamination were observed in SB14 beneath 33 feet bgs, and in SB15, beneath 30.5 feet bgs.

In SB16, slightly more permeable soils were encountered over a greater interval. Specifically, the subsurface conditions included predominantly silty sand between 17 and 42 feet below grade, underlain by silt to the total depth explored (55 feet bgs). In this boring, an additional soil sample was collected at 18.5 feet bgs because a moderate odor of hydrocarbons and green staining was observed. The odor and staining was limited to that area and the area of the water table, at approximately 24 feet bgs. Once again, the low permeability silts at depth in this boring would be expected to significantly inhibit the migration of hydrocarbons, and to function as an aquitard.

Groundwater Characterization at Box Culvert

To evaluate the potential for the Box Culvert to serve as a potential conduit for preferential migration of petroleum hydrocarbons in groundwater emanating from the residual source area, the IRAP field investigation set forth to install three shallow borings along the culvert; however, only one boring, SB17, was advanced on December 16, 2008 due to the inability to confirm the subsurface extent of the culvert and concerns over encountering/damaging the culvert during drilling.

As shown on Figure 4, boring SB17 targeted the backfill of the culvert, who's approximate extent is shown on Figure 4. While the soils encountered in this boring were generally similar to other borings advanced, the color of the soils was distinctly different from all of the other borings. Specifically, a predominantly dark grayish brown clayey to sandy silt was encountered to an approximate depth of 22 feet bgs. This material was interpreted to be backfill material, based on the distinctly different color. Tan to greenish brown native silts were encountered below approximately 23 feet bgs, which was interpreted as native soil. The boring was completed to 25 feet bgs, noting that shallow groundwater occurred at approximately 19 feet bgs and above the bottom of the culvert. Accordingly, a grab groundwater and capillary fringe soil sample were collected at the approximate depth of the water table (approximately 18.5 feet bgs). No obvious indications of hydrocarbon impacts were observed.

Monitoring Well Installation at Downgradient Site Boundary

On December 17, 2008, monitoring well MW-8 was completed inside the existing site building, along the downgradient site boundary adjacent to former exploratory boring SB13 (see Figure 4). The well was advanced using a Geoprobe drilling rig provided by Vironex. At this location, after coring through the concrete slab and hand-augering to avoid utility conflicts, the uppermost five feet of the borehole was completed with eight-inch diameter augers, per ACDPW well seal requirements. The remainder of the boring was competed to a depth of 28 feet bgs using a 3.25-inch diameter outer casing with an inner drive rod and sampling device. The hole was continuously cored for the total depth and the liners opened and examined for lithology and evidence of contamination. No obvious evidence of contamination was observed. Based on the well construction of nearby well MW6, in which groundwater was measured at approximately 18.5 feet bgs, the well was completed to 26 feet bgs, with the 0.010 inch slotted interval extending from 11 to 26 feet below grade. The well casing consisted of a one-inch inside diameter with a prepack well screen. Additional sand was placed around the prepack casing and the sand in the annular space was brought up to nine feet bgs. About two feet of bentonite was placed above the sandpack and hydrated. Neat cement grout was used to complete the well seal to the surface. A monitoring well box was placed at the surface and a locking cap was used to secure the casing. Groundwater was measured at approximately 18 feet below grade after completion. This well was later developed and sampled on December 29th, 2008 as part of the routine 4th Quarter 2008 groundwater monitoring event (LRM, 2009)[6].

IRAP Soil and Groundwater Investigation Results

Logs for the borings advanced are included as Appendix B, Tables 4, and 5 summarize the results of the soil and grab groundwater samples collected during this investigation. Figures 6 through 9 summarize both lithologic and historical hydrocarbon concentrations in soil and groundwater detected along key cross-sections across the site, with cross-section locations shown on Figure 5. The laboratory results for all samples are included as Appendix C. The following sections summarize the field observations and analytical results.

Geologic Conditions: As shown on boring logs in Appendix B, soils encountered within the residual source area were similar to those encountered in the previous investigation and included clayey to sandy silts, with lesser amounts of silty sand. In SB14, the silty sand intervals, interbedded with silt, occurred between approximately 17 and 33 feet bgs, and in SB15, between 20 and 30 feet bgs. Below these depths, only silt was encountered to the total explored depth of 55 feet bgs (see boring logs in appendix A). Importantly, the silt would be expected to act as an aquitard, and no obvious signs of contamination were observed in SB14 beneath 33 feet bgs, and in SB15, beneath 30.5 feet bgs. In SB16, slightly more permeable soils were encountered over a greater interval. Specifically, the subsurface conditions included predominantly silty sand

[6] LRM Consulting, Inc. (2008). 4th Quarter Groundwater Monitoring Report, Former Val Strough Chevrolet Site, Oakland, CA. January.

between 17 and 42 feet below grade, underlain by silt to the total depth explored (55 feet bgs). Once again, the low permeability silts at depth in this boring would be expected to significantly inhibit the migration of hydrocarbons, and to function as an aquitard. Depth to first encountered groundwater in the residual source area ranged from 23 to 24 feet bgs.

Adjacent to the box culvert, soils encountered consisted predominantly of a dark grayish brown clayey to sandy silt to a depth of approximately 22 feet bgs. This material was interpreted to be backfill material, based on the distinctly different color. Tan to greenish brown native silts were encountered below approximately 23 feet bgs. Depth to groundwater at this location was measured at approximately 18 feet bgs.

At the downgradient site boundary, soils encountered consisted predominantly of brown clayey sits, with evidence of gravels with sandy silts at the 5- to 10-foot depth interval and then again at 15 to 20-foot depth interval. First encountered groundwater at this location occurred at 18 feet bgs.

Soil and Groundwater Quality in Residual Source Area: As reflected in Tables 4 and 5 and on Figures 6 through 9, at SB14, residual levels of hydrocarbons were detected in capillary fringe soils (23.3 feet bgs), including 2.8 mg/kg of benzene and 880 mg/kg of TPH-g. Correspondingly, grab groundwater concentrations at the water table (approximately 24 feet bgs) included benzene at 22 ug/L and TPH-g at 4,300 ug/L. While no groundwater entered the boring at greater depths, the observed soil concentrations declined to non-detect levels in both the 50-foot and 54-foot-bgs soil samples. These results are consistent with the increase in the occurrence of find-grain soils and the transition toward an apparent aquitard at this depth, suggesting that the vertical extent of hydrocarbons at this location is defined. To the extent that SB14 is located adjacent to former borings SB5 and SB6, the previously detected (December 2007) elevated dissolved hydrocarbon concentrations in these two former borings at depths of 24 feet bgs (SB5) and 40 feet bgs (SB6) may be considered vertically defined. Also worth noting is that the hydrocarbon concentrations detected in December 2007 at the water table (24 feet bgs) at SB5 are significantly lower than the December 2008 concentrations at the same depth at boring SB14; this finding is consistent with the previously described decline in hydrocarbon concentrations observed in residual source area monitoring wells (MW2 and MW3) throughout the same time period (see discussion on Page 4 and 5 herein).

At SB15, residual levels of hydrocarbons in soils, including benzene at 1.1 mg/kg and TPH-g at 670 mg/kg, were detected at 23 feet bgs. Correspondingly, low levels of hydrocarbons, including benzene at 0.71 ug/L and TPH-g at 830 ug/L, were detected in the shallow (24 feet bgs) grab groundwater sample form this boring. Importantly, hydrocarbons in deeper soil samples declined to non-detect levels in fine-grained soils encountered at 50 and 55 feet bgs. A corresponding decline in hydrocarbon concentrations in groundwater was also observed via the 55-foot bgs grab groundwater sample, which reported TPH-g at a concentration of 100 ug/L. These results suggest a decline in concentrations with depth and with transition toward finer-grained soils within the residual source area. In close proximity to former boring SB7, where the December 2007 grab groundwater sample indicated the presence of elevated hydrocarbons at 40

feet bgs, the results for SB15 also suggest that the previously encountered concentrations in groundwater at SB7 may be considered vertically defined.

Similar observations were made at SB16, where low-to non-detect levels of hydrocarbons occurred in soils at 23 feet bgs, transitioning to non-detect levels in 50 to 55-foot bgs samples collected from the fine-grained soils beneath the residual source area. Grab groundwater samples from the water table (24 feet bgs) and at depth (55 feet bgs) contained low to non-detect levels of hydrocarbons, including non-detect levels of benzene and TPH-g at 170 ug/L (24 feet bgs) and 140 ug/L (55 feet bgs). Located immediately adjacent to the location of former boring SB8, where elevated hydrocarbons were detected at 40 feet bgs, these results suggest that the extent of concentrated hydrocarbon mass at this location has been vertically defined.

Groundwater Quality at Box Culvert: As shown in Tables 4 and 5, detection of hydrocarbons in capillary fringe soils at SB17, located immediately adjacent to the box culvert, was primarily limited to heavy-end hydrocarbons including TPH-d (41 mg/kg) and TPH-mo (120 mg/kg); gasoline-range hydrocarbons remained below detection limits, with the sole exception of a negligible detection of ethylbenzene (0.014 mg/kg). Consistent with the saturated soil results, which appear to reflect the box culvert backfill, concentrations of dissolved hydrocarbons also remained below detection limits for all compounds, with the exception of TPH-d (170 ug/L) and TPH-mo (760 ug/L). Worth noting is that the closest monitoring well to the culvert, MW6 (located approximately 30 feet south of SB17) has reported non-detect levels of TPH-d and TPH-mo throughout its period of record, including the 4th Quarter of 2008 (see Table 1). Farther upgradient of the culvert, well MW4 has reported non-detect levels of these hydrocarbons since at least 2005. These findings, together with the fact that none of the gasoline-range hydrocarbons detected with the residual source area were encountered in MW6 and SB17, the culvert does not appear to be serving as a preferential migration pathway for chemicals within the residual source area. It is possible that the low levels of heavy-range hydrocarbons detected in SB17 may be a result of sporadic releases from cars parked at the parking lot overlying the culvert.

***Groundwater Quality at Downgradient Site Boundary*:** Monitoring well MW8 was drilled immediately adjacent to former boring SB13, where grab groundwater sampling indicated the presence of MTBE (160 ug/L), TPH-d (3,800 ug/L), and TPH-mo (6,600 ug/L) in December 2007. The initial sampling of MW8 was conducted as part of the routine 4th Quarter 2008 monitoring event on December 29th (LRM, 2009), and later, all site wells were resurveyed to the NAVD 88 datum (see Appendix D). The results of this sampling, shown in Table 1), indicate the absence of TPH-g, TPH-d, TPH-mo, and benzene at above detection limits. With the only detections in this well limited to negligible levels of toluene (0.64 µg/L), xylenes (0.78 µg/L), and MTBE (1.5 µg/L), the results from this well suggest that the extent of the hydrocarbon plume at the site is essentially confined to locations within the site boundary. This well will be incorporated into the routine quarterly groundwater monitoring program for the site.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of this investigation, the following conclusions have been generated:

- In December 2007, the residual source area contained elevated levels of TPH-g and BTEX in groundwater, including 110,000 ug/L of TPH-g and 660 ug/L of benzene at the water table (24 feet bgs) and as much as 35,000 ug/L of TPH-g and 320 ug/L of benzene at a depth of 40 feet bgs. The results of the December 2008 IRAP soil and groundwater investigation indicate that the vertical extent of hydrocarbons within the residual source area have been defined and shown to decline significantly beneath a depth of 40 feet bgs;

- The results of the IRAP soil and groundwater investigation in addition to quarterly monitoring results since December 2007 for wells within the residual source area indicate that the previously observed elevated hydrocarbon levels in grab groundwater and monitoring well samples have exhibited a declining trend over the past few quarters with no significant changes in groundwater elevations; based on bio-indicator parameters, this decline appears to be due to natural attenuation of hydrocarbons. These findings support the proposed pilot testing of enhanced aerobic bioremediation using iSOC technology recommended for the residual source area as part of the IRAP (LRM, 2008a) currently under review by the ACHCSA;

- Groundwater quality adjacent to the box culvert remains free of gasoline-range hydrocarbons. Detections of hydrocarbons in grab groundwater adjacent to the culvert are limited to TPH-d and TPH-mo and appear unrelated to upgradient detections in the residual source area, with no evidence of preferential migration along the culvert backfill. The observed detections may be a result of localized, sporadic releases from cars parked on the parking lot overlying the box culvert;

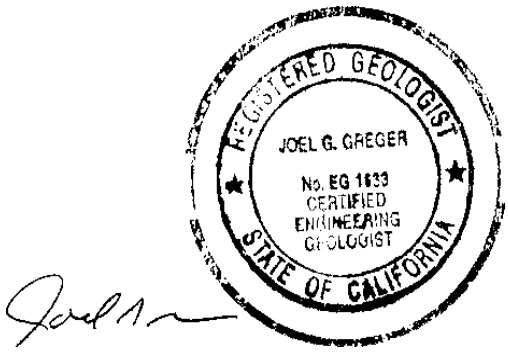
- Groundwater quality at the downgradient site boundary defined by the initial round of quarterly monitoring at newly placed monitoring well MW8 indicates the absence of TPH-g, TPH-d, TPH-mo, and benzene at above detection limits. With the only detections in this well limited to negligible levels of toluene (0.64 µg/L), xylenes (0.78 µg/L), and MTBE (1.5 µg/L), the downgradient extent of the hydrocarbon plume at the site is considered defined. This well has been incorporated into the routine quarterly monitoring program at the site.

- LRM recommends implementation of the iSOC pilot testing as outlined in the IRAP for the site (LRM, 2008a). These activities include implementation of iSOC technology at the newly installed oxygen diffusion well, O-1 (see Figure 4) screened from 15 to 40 feet bgs and located within the residual source area, in addition to specified pilot test monitoring at key residual source area monitoring wells MW2 and MW3. The pilot test will be implemented following approval by the ACHCSA. Should pilot test results suggest expansion of iSOC applications across the residual source area is warranted, additional recommendations will be set forth for both injection locations and a deeper monitoring well.

CLOSING

We appreciate your assistance with this project. If you have any questions or require further information, please contact Mehrdad Javaherian at (650)-343-4633.

Sincerely,
LRM Consulting, Inc.



Joel G. Greger, C.E.G. No EG 1633
Senior Geologist

Mehrdad M. Javaherian, Ph.D/MPH(candidate)
Principal

ATTACHMENTS

Figure 1 – Site Location Map
Figure 2 – Groundwater Contour Map and Rose Diagram- 4th Quarter 2008 Monitoring Event
Figure 3 – Grab Groundwater Analytical Results-December 2007 Investigation
Figure 4 – Site Plan
Figure 5 – Locations of Geologic Cross-Sections
Figure 6 – Geologic Cross-Section A-A'-Historical Hydrocarbon Concentrations in Soil
Figure 7 – Geologic Cross-Section A-A'-Historical Hydrocarbon Concentrations in Groundwater
Figure 8 – Geologic Cross-Section B-B'-Historical Hydrocarbon Concentrations in Soil
Figure 9 – Geologic Cross-Section B-B'-Historical Hydrocarbon Concentrations in Groundwater

Table 1 – Cumulative Groundwater Elevation and Analytical Data
Table 2 – Soil Analytical Data-December 2007 Investigation
Table 3 – Grab Groundwater Analytical Data- December 2007 Investigation
Table 4 – Soil Analytical Data-December 2008 IRAP Investigation
Table 5 – Grab Groundwater Analytical Data-December 2008 IRAP Investigation

Appendix A – Response to IRAP Comments
Appendix B – Boring Logs
Appendix C – Laboratory Analytical Report
Appendix D – Monitoring Well Resurvey Results

cc: Greggory Brandt, Esq., Wendel, Rosen, Black & Dean, 1111 Broadway, 24th Floor, Oakland, California 94607
Strough Family Trust of 1983, 2 Sea View Avenue, Piedmont, California 94611

TABLES

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									Concentration (mg/L)									
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	CO_2 (lab)	DO (field)	ORP (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW1	07/27/93	100.00	a	20.79	79.21	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/02/97	100.00	a	21.22	78.78	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<2.0	--	--	--	--	--	--	--	--	--	--	--
MW1	06/30/98	100.00	a	18.21	81.79	0.00	<0.50	<0.50	2.1	0.6	84	--	--	2.1	--	204	5	--	6.16	0.15	0.046	55	<0.10	<0.10	2
MW1	07/29/98	100.00	a	18.74	81.26	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	08/26/98	100.00	a	19.28	80.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	10/01/98	100.00	a	19.93	80.07	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--	192	3.6	--	6.49	--	--	--	--	--	--
MW1	10/30/98	100.00	a	20.22	79.78	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/30/98	100.00	a	19.99	80.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/28/98	100.00	a	19.81	80.19	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	01/25/99	100.00	a	19.62	80.38	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--	389	3.4	--	6.72	--	--	--	--	--	--
MW1	02/26/99	100.00	a	17.18	82.82	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/24/99	100.00	a	17.28	82.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/12/99	100.00	a	17.91	82.09	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	12/15/99	100.00	a	21.01	78.99	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--	--	3.31	--	6.52	--	--	--	--	--	--
MW1	03/20/00	100.00	a	16.25	83.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	07/20/00	100.00	a	19.63	80.37	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	3.4	--	120	7.37	--	6.66	0.13	<0.01	54	<0.10	3.4	<0.2
MW1	10/11/00	100.00	a	20.80	79.20	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	04/10-11/01	100.00	a	18.81	81.19	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	1.2	--	117	NR	--	NR	<0.10	0.045	57	<0.10	6.6	0.15
MW1	07/10/01	100.00	a	20.51	79.49	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	11/20/01	64.69	b	21.36	43.33	0.00	<0.50	1.3	<0.50	0.81	<50	<50	<300	<2.0	--	--[c]	0.65	--	6.47	0.32	1.8	63	<0.10	--	<0.20
MW1	02/19/02	64.69	b	18.95	45.74	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	05/21/02	64.69	b	19.82	44.87	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	--	120	0.96	--	6.25	<0.10	0.5	58	<0.10	5.5	<0.20
MW1	06/27/03	64.69	b	19.93	44.76	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/03	64.69	b	21.24	43.45	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	--	--	--	--	--	--	--	--	--
MW1	12/12/03	64.69	b	21.27	43.42	0.00	<0.50	<0.50	<0.50	1.1	<50	58	<500	<0.50	--	--	--	--	--	--	--	--	--	--	--
MW1	03/15/04	64.69	b	18.18	46.51	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	0.14	--	--	--	--	--	--	--	--
MW1	06/24/04	64.69	b	20.48	44.21	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	0.15	--	--	--	--	--	--	--	--
MW1	09/29/04	64.69	b	21.37	43.32	0.00	<0.50	0.51	<0.50	<1.0	<50	<50	<500	<0.50	--	--	1.01	--	6.42	--	--	--	--	--	--
MW1	12/13/04	64.69	b	20.63	44.06	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/14/05	64.69	b	18.69	46.00	0.00	<0.50	<0.50	<0.50	<1.0	<50	73	<500	<0.50	--	--	1.96	--	6.04	--	--	--	--	--	--
MW1	06/15/05	64.69	b	20.32	44.37	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/26/05	64.69	b	22.10	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	1.84	317.4	6.43	--	--	--	--	--	--
MW1	12/12/05	64.69	b	22.39	42.30	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/29/06	64.69	b	15.24	49.45	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	74	--	--	1.57	--	6.73	--	--	--	--	--	--
MW1	06/19/06	64.69	b	18.27	46.42	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/29/06	64.69	b	20.06	44.63	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	7.9	--	--	0.43	--	6.40	--	--	--	--	--	--
MW1	12/12/06	64.69	b	20.32	44.37	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	9.4	--	--	0.38	--	6.39	--	--	--	--	--	--
MW1	03/01/07	64.69	b	18.68	46.01	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	3.5	--	--	0.86	--	6.39	--	--	--	--	--	--
MW1	06/12/07	64.69	b	20.28	44.41	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/25/07	64.69	b	21.37	43.32	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	1.8	--	--	16.87	--	6.40	--	--	--	--	--	--
MW1	12/20/07	64.69	b	21.48	43.21	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	03/26/08	64.69	b	20.98	43.71	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--	--	3.1	71.10	6.11	--	--	--	--	--	--
MW1	06/03/08	64.69	b	20.70	43.99	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW1	09/25/08	64.69	b	22.30	42.39	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	0.57	<5.0	--	2.9	46.00	6.00	--	--	--	--	--	--
MW1	12/29/08	64.69	b	21.77	42.92	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0	--	**3.4**	**119.00**	**6.20**	--	--	--	--	--	--
MW2	07/27/93	101.27	a	22.10	79.17	0.00	10,000	27,000	2,900	20,000	120,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/02/97	101.27	a	22.91	78.36	0.43	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2	06/30/98	101.27	a	19.69	81.58	0.45	7,300	18,000	2,500	15,600	72,000	--	--	5,500	--	185	2.2	--	5.98	--	--	--	--	--	--
MW2	07/29/98	101.27	a	20.11	81.16	0.29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	08/26/98	101.27	a	20.54	80.73	0.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	10/01/98	101.27	a	21.52	79.75	0.42	6,400	17,000	2,600	17,000	84,000	--	--	2,000	--	--	2.7	--	6.47	--	--	--	--	--	--
MW2	10/30/98	101.27	a	21.54	79.73	0.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	11/30/98	101.27	a	21.21	80.06	0.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/28/98	101.27	a	21.10	80.17	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	01/25/99	101.27	a	20.80	80.47	0.01	9,000	26,000	3,800	27,500	130,000	--	--	5,800	--	386	0.3	--	6.69	--	--	--	--	--	--
MW2	02/26/99	101.27	a	18.00	83.27	sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	03/24/99	101.27	a	18.27	83.00	trace	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L)									Concentration (mg/L)									
							Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	CO_2 (lab)	DO (field)	ORP (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW2	05/12/99	101.27	a	19.08	82.19	trace	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	12/15-16/99	101.27	a	22.42	78.85	0.025	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2	03/20/00	101.27	a	17.09	84.18	0.026	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	07/20/00	101.27	a	20.86	80.41	0.017	*	*	*	*	*	*	*	*	--	*	0.88	*	6.37	*	*	*	*	*	*
MW2	10/11/00	101.27	a	22.10	79.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	04/10-11/01	101.27	a	19.98	81.29	0.00	8,000	22,000	2,600	23,500	150,000	1,500	<600	3,600	--	168	NR	--	NR	3.1	2.5	16	0.14	0.19	<0.20
MW2	07/10/01	101.27	a	21.85	79.42	0.00	5,900	15,000	2,300	12,100	83,000	5,700	<1,500	2,800	--	--	--	--	--	--	--	--	--	--	--
MW2	11/20/01	65.95	b	22.75	43.20	0.00	--	--	--	--	--	--	--	--	--	120	NR	--	6.15	1.8	2	16	<0.10	--	<0.20
MW2	02/19/02	65.95	b	20.12	45.83	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	05/21/02	65.95	b	21.10	44.85	0.00	8,600	25,000	3,500	26,000	150,000	31,000	<3,000	4,800	--	160	0.88	--	5.99	3.9	1.7	13	<0.10	0.54	<0.20
MW2	06/27/03	65.95	b	21.48	44.47	0.35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW2	09/29/03	65.95	b	23.04	42.91	0.48	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2[e]	12/12/03	65.95	b	22.75	43.31	0.16	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2[e]	03/15/04	65.95	b	19.24	46.72	0.01	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2[e]	06/24/04	65.95	b	22.10	44.06	0.31	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2[e]	09/29/04	65.95	b	22.81	43.14	sheen	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW2[e]	12/13/04	65.95	b	22.06	43.95	0.08	3,700	12,000	1,900	10,000	47,000	2,600	<500	1,200	--	*	0.27	*	6.63	*	*	*	*	*	*
MW2[j]	03/14/05	65.95	b	25.00	40.95	0.00	780	3,700	920	6,400	43,000	43,000	<5,000	<200	--	*	*	*	*	*	*	*	*	*	*
MW2	06/15/05	65.95	b	21.14	44.81	0.00	2,900	15,000	2,400	22,000	120,000	13,000	<2,500	810	--	--	3.05	-147.6	--	--	--	--	--	--	--
MW2	07/18/05	65.95		NM	NC	NM	2,700	13,000	1,800	15,000	120,000	17,000	--	530	--	--	--	--	--	--	--	--	--	--	--
MW2	09/26/05	65.95		22.93	43.02	0.00	570	4,000	620	6,200	31,000	63,000	28,000	<50	--	--	--	--	--	--	--	--	--	--	--
MW2	12/12/05	65.95		25.40	40.55	0.00	670	5,300	1,100	9,800	34,000	2,800	<500	65	--	--	--	--	--	--	--	--	--	--	--
MW2	03/29/06	65.95		15.66	50.29	sheen	620	2,800	540	4,700	33,000	<4,000	<100	37	--	--	7.59	--	6.9	--	--	--	--	--	--
MW2	06/19/06	65.95		19.14	46.81	sheen	680	5,200	990	16,000	120,000	<30,000	1,900	170	--	--	1.78	--	6.21	--	--	--	--	--	--
MW2	09/29/06	65.95	b	21.16	44.79	0.00	1,200	5,100	1,200	9,300	59,000	<8000	300	230	--	--	1.71	--	6.66	--	--	--	--	--	--
MW2	12/12/06	65.95	b	21.46	44.49	0.00	850	4,400	1,100	8,900	45,000	<10000	360	110	--	--	1.5	--	6.61	--	--	--	--	--	--
MW2	03/01/07	65.95	b	19.48	46.47	0.00	1,400	5,200	980	9,500	71,000	<18000	460	160	--	--	1.2	--	6.7	--	--	--	--	--	--
MW2	06/12/07	65.95	b	20.98	44.97	0.00	1,300	4,900	1,200	8,900	40,000	<3000	<100	130	--	--	1.12	--	6.7	--	--	--	--	--	--
MW2	09/25/07	65.95	b	22.57	43.38	0.00	1,400	6,500	1,900	13,000	68,000	<12000	250	240	--	--	2.52	--	6.57	--	--	--	--	--	--
MW2	12/20/07	65.95	b	22.70	43.25	0.00	1,400	7,000	2,400	16,000	75,000	<5000	650	270	--	--	1.1	--	6.47	--	--	--	--	--	--
MW2	03/26/08	65.95	b	22.51	43.44	0.00	1,400	6,200	1,800	16,000	83,000	<10000	360	480	--	--	4.13	-5.7	6.18	--	--	--	--	--	--
MW2	06/03/08	65.95	b	21.85	44.10	0.00	1,900	11,000	2,500	18,000	98,000	<12000	500	660	--	--	0.91	-24.6	6.43	--	--	--	--	--	--
MW2	09/25/08	65.95	b	23.30	42.65	0.00	740	3,500	1,700	10,000	46,000	<8000	170	340	180	--	1.3	-146	6.1	--	--	--	--	--	--
MW2	12/29/08	65.95	b	22.95	43.00	0.00	**260**	**1,500**	**1,100**	**6,400**	**29,000**	<4000	<100	**110**	<50	--	**1.2**	**-80**	**6.4**	--	--	--	--	--	--
MW3	07/27/93	101.29	a	22.28	79.01	0.02	9,100	24,000	5,300	33,000	330,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/02/97	101.29	a	22.71	78.58	0.03	4,200	11,000	1,800	10,600	36,000	--	--	3,500	--	--	--	--	--	--	--	--	--	--	--
MW3	06/30/98	101.29	a	19.47	81.82	0.00	4,800	11,000	1,200	7,100	51,000	--	--	3,900	--	300	2	--	6.03	1.4	9.8	13	1.4	<0.10	2.4
MW3	07/29/98	101.29	a	20.01	81.28	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	08/26/98	101.29	a	20.62	80.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	10/01/98	101.29	a	21.33	79.96	0.00	3,900	8,500	1,200	6,000	38,000	--	--	2,300	--	240	2	--	6.65	--	--	--	--	--	--
MW3	10/30/98	101.29	a	21.62	79.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/30/98	101.29	a	21.31	79.98	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/28/98	101.29	a	21.15	80.14	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	01/25/99	101.29	a	20.79	80.50	0.00	4,000	10,000	1200	6700	5,100	--	--	2900	--	238	1	--	7.01	--	--	--	--	--	--
MW3	02/26/99	101.29	a	18.02	83.27	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	03/24/99	101.29	a	18.37	82.92	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/12/99	101.29	a	19.22	82.07	0.0083	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	12/15-16/99	101.29	a	22.43	78.86	0.00	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW3	03/20/00	101.29	a	17.14	84.15	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	07/20/00	101.29	a	20.98	80.31	0.00	5,700	14,000	1,600	9,300	69,000	2,900	<300	3,300	--	128	2.05	--	6.73	3.9	6.6	20	<0.10	0.55	<0.20
MW3	10/11/00	101.29	a	22.24	79.05	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	04/10-11/01	101.29	a	20.70	80.59	0.00	7,200	<0.001	2,300	12,900	110,000	4,700	<1,500	4,300	--	137	NR	--	NR	1	6	8.2	<0.10	0.13	<0.20
MW3	07/10/01	101.29	a	21.97	79.32	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	11/20/01	65.99	b	22.80	43.19	0.00	6,300	16,000	2,400	14,900	100,000	5,900	<900	4,000	--	120	2.93	--	6.67	0.84	12	31	<0.10	--	<0.20
MW3	02/19/02	65.99	b	20.11	45.88	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW3	05/21/02	65.99	b	21.20	44.79	0.00	6,500	17,000	2,200	12,700	91,000	14,000	<3,000	2,200	--	130	1.01	--	6.62	4.2	9.6	25	<0.10	0.77	<0.20
MW3	06/27/03	65.99	b	21.32	44.67	sheen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	Concentration (mg/L) CO_2 (lab)	DO (field)	ORP (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW3	09/29/03	65.99	b	22.79	43.20	sheen	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW3[e]	12/12/03	65.99	b	22.73	43.27	0.01	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW3[e]	03/15/04	65.99	b	19.32	46.67	sheen	*	*	*	*	*	*	*	*	--	*	*	*	*	*	*	*	*	*	*
MW3	06/24/04	65.99	b	21.99	44.00	0.00	3,400	7,700	1,000	4,800	39,000	1,700	<500	1,100	--	--	0.07	--	--	--	--	--	--	--	--
MW3	09/29/04	65.99	b	22.54	43.45	0.00	2,900	6,700	980	4,300	29,000	2,200	<500	1,100	--	--	0.80	--	6.42	--	--	--	--	--	--
MW3	12/13/04	65.99	b	22.06	43.93	0.00	1,700	2,900	790	3,400	17,000	1,300	<500	490	--	--	0.16	--	6.7	--	--	--	--	--	--
MW3[j]	03/14/05	65.99	b	24.00	41.99	0.00	680	1,700	380	1,600	10,000	670	<500	67	--	--	--	--	--	--	--	--	--	--	--
MW3	06/15/05	65.99	b	21.13	44.86	0.00	260	960	330	1,400	12,000	1,200	<500	31	--	--	1.93	-150.4	--	--	--	--	--	--	--
MW3	07/18/05	65.99	b	NM	NC	NM	1,000	5,600	1,100	4,300	23,000	1,700	--	81	--	--	--	--	--	--	--	--	--	--	--
MW3	09/26/05	65.99	b	22.92	43.07	0.00	4,000	17,000	1,900	17,000	79,000	5,100	540	270	--	--	--	--	--	--	--	--	--	--	--
MW3	12/12/05	65.99	b	23.30	42.69	0.00	200	710	450	1,400	7,000	550	<500	<10	--	--	--	--	--	--	--	--	--	--	--
MW3	03/29/06	65.99	b	15.70	50.29	0.00	110	300	130	490	3,800	<200	<100	13	--	--	1.23	--	6.89	--	--	--	--	--	--
MW3	06/19/06	65.99	b	19.11	46.88	0.00	160	500	320	840	7,000	<300	<100	3.1	--	--	2.30	--	6.40	--	--	--	--	--	--
MW3	09/29/06	65.99	b	21.15	44.84	0.00	1,300	2,300	720	2,900	22,000	<1500	<100	110	--	--	1.05	--	6.78	--	--	--	--	--	--
MW3	12/12/06	65.99	b	21.38	44.61	0.00	1,400	2,200	670	2,600	21,000	<1500	<100	130	--	--	0.6	--	6.72	--	--	--	--	--	--
MW3	03/01/07	65.99	b	19.50	46.49	0.00	1,100	2,500	510	2,200	17,000	<600	<100	51	--	--	1.11	--	6.76	--	--	--	--	--	--
MW3	06/12/07	65.99	b	21.00	44.99	0.00	1,800	4,000	800	3,300	22,000	<1500	<100	150	--	--	0.97	--	6.74	--	--	--	--	--	--
MW3	09/25/07	65.99	b	22.59	43.40	0.00	2,400	5,000	1,000	4,600	29,000	<500	<100	220	--	--	1.62	--	6.63	--	--	--	--	--	--
MW3	12/20/07	65.99	b	22.59	43.40	0.00	2,400	4,900	1,100	4,700	36,000	<2000	<100	240	--	--	0.9	--	6.62	--	--	--	--	--	--
MW3	03/26/08	65.99	b	22.13	43.86	0.00	4,500	11,000	1,700	7,800	54,000	<1500	<100	340	--	--	2.2	3.1	6.35	--	--	--	--	--	--
MW3	06/03/08	65.99	b	21.81	44.18	0.00	3,900	8,700	1,500	7,000	47,000	<1500	<100	470	--	--	0.88	-29.2	6.64	--	--	--	--	--	--
MW3	09/25/08	65.99	b	23.30	42.69	0.00	1,600	3,700	700	3,300	22,000	<3000	<100	220	180	--	1.5	-176	6.00	--	--	--	--	--	--
MW3	12/29/08	65.99	b	22.92	43.07	0.00	**310**	**910**	**320**	**1,300**	**11,000**	<1500	<100	**35**	**23**	**--**	**1.6**	**-112**	**6.50**	--	--	--	--	--	--
MW4	06/30/98	98.65	a	16.93	81.72	0.00	2,200	930	850	2,100	10,000	--	--	1,800	--	222	2.6	--	6.18	0.14	4.3	14	0.8	0.8	1.5
MW4	07/29/98	98.65	a	17.48	81.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	08/26/98	98.65	a	18.65	80.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	10/01/98	98.65	a	18.74	79.91	0.00	570	46	130	36	1,100	--	--	1,300	--	320	3.4	--	<0.001	--	--	--	--	--	--
MW4	10/30/98	98.65	a	19.02	79.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/30/98	98.65	a	18.74	79.91	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/28/98	98.65	a	18.60	80.05	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	01/25-26/99	98.65	a	18.32	80.33	0.00	230	<8.3	<8.3	<8.3	290	--	--	1,300	--	475	6.7	--	7	--	--	--	--	--	--
MW4	02/26/99	98.65	a	15.81	82.84	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	03/24/99	98.65	a	16.01	82.64	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/12/99	98.65	a	17.71	80.94	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	12/15-16/99	98.65	a	19.83	78.82	0.00	5.8	<0.50	<0.50	<0.50	<50	--	--	1,400	--	--	1.75	--	7.02	--	--	--	--	--	--
MW4	03/20/00	98.65	a	14.9	83.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	07/20/00	98.65	a	18.38	80.27	0.00	91	4.6	19	12.9	210	<50	<300	1,500	--	126	3.88	--	6.67	9.5	5.3	11	<0.10	0.04	<0.20
MW4	10/11/00	98.65	a	19.61	79.04	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	04/10-11/01	98.65	a	17.55	81.10	0.00	110	<5.0	<5.0	<5.0	350	<50	<300	1,100	--	107	NR	--	NR	0.8	6.3	10	<0.10	<0.05	<0.20
MW4	07/10/01	98.65	a	19.34	79.31	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	11/20/01	63.35	b	20.16	43.19	0.00	<2.5	4	<2.5	3.7	96	<50	<300	2,500	--	130	0.83	--	6.51	1.6	10	11	<0.10	--	<0.20
MW4	02/19/02	63.35	b	17.34	46.01	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	05/21/02	63.35	b	18.57	44.78	0.00	340	5.7	70	<1.0	940	83	<300	1,600	--	150	1.65	--	6.32	3.1	8.4	9	<0.10	0.06	<0.20
MW4	06/27/03	63.35	b	18.72	44.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW4	09/29/03	63.35	b	20.11	43.24	0.00	<5.0	<5.0	<5.0	<10	1,100	<50	<500	1,700	--	--	--	--	--	--	--	--	--	--	--
MW4	12/12/03	63.35	b	20.06	43.29	0.00	<13	<13	<13	<25	<1,300	<50	<500	1,000	--	--	--	--	--	--	--	--	--	--	--
MW4	03/15/04	63.35	b	16.89	46.46	0.00	1.5	<0.50	<0.50	<1.0	54	<50	<500	41	--	--	0.16	--	--	--	--	--	--	--	--
MW4	06/24/04	63.35	b	19.31	44.04	0.00	69	<5.0	<5.0	<10	920	<50	<500	1,100	--	--	0.15	--	--	--	--	--	--	--	--
MW4	09/29/04	63.35	b	20.20	43.15	0.00	<5.0	<5.0	<5.0	<10	940	<50	<500	1,200	--	--	0.13	--	6.63	--	--	--	--	--	--
MW4	12/13/04	**	b	20.44	NC	0.00	<5.0	<5.0	<5.0	<10	740	<50	<500	860	--	--	0.58	--	6.84	--	--	--	--	--	--
MW4	03/14/05	**	b	18.30	NC	0.00	20	<5.0	<5.0	<10	930	<50	<500	930	--	--	0.28	--	6.34	--	--	--	--	--	--
MW4	06/15/05	**	b	20.03	NC	0.00	350	6.1	<5.0	<10	2100	89	<500	1,100	--	--	0.46	-98.9	--	--	--	--	--	--	--
MW4	07/18/05	**		NM	NC	NM	11	<5.0	<5.0	<10	540	<50	--	1,100	--	--	--	--	--	--	--	--	--	--	--	--
MW4	09/26/05	**		21.79	NC	0.00	<5.0	<5.0	<5.0	<10	960	<50	<500	660	--	--	2.20	210.4	6.73	--	--	--	--	--	--
MW4	12/12/05	**		21.89	NC	0.00	<5.0	<5.0	<5.0	<10	820	<50	<500	1,000	--	--	2.05	--	6.62	--	--	--	--	--	--
MW4	03/29/06	**		14.85	NC	0.00	49	160	120	300	2,400	<100	<100	130	--	--	1.07	--	6.82	--	--	--	--	--	--
MW4	06/19/06	**		17.96	NC	0.00	100	940	540	1,800	8,800	<400	<100	55	--	--	2.49	--	5.76	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	Concentration (mg/L) CO_2 (lab)	DO (field)	ORP (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW4	09/29/06	63.35	b	19.85	43.50	0.00	18.0	2.6	1.5	3.5	370.0	<50	<100	180	--	--	0.25	--	6.66	--	--	--	--	--	--
MW4	12/12/06	63.35	b	20.03	43.32	0.00	11.0	0.77	<0.5	<0.5	230.0	<50	<100	260	--	--	0.90	--	6.61	--	--	--	--	--	--
MW4	03/01/07	63.35	b	18.33	45.02	0.00	63.0	7.10	40.0	190.0	1,800.0	<50	<100	130	--	--	0.76	--	6.6	--	--	--	--	--	--
MW4	06/12/07	63.35	b	19.70	43.65	0.00	9.3	<0.5	<0.5	<0.5	70.0	<50	<100	150	--	--	1.06	--	6.9	--	--	--	--	--	--
MW4	09/25/07	63.35	b	21.27	42.08	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	300	--	--	6.67	--	6.59	--	--	--	--	--	--
MW4	12/20/07	63.35	b	21.30	42.05	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	370	--	--	1.45	--	6.57	--	--	--	--	--	--
MW4	03/26/08	63.35	b	20.89	42.46	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	260	--	--	4.56	65	6.35	--	--	--	--	--	--
MW4	06/03/08	63.35	b	20.51	42.84	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	190	--	--	1.34	101.3	6.49	--	--	--	--	--	--
MW4	09/25/08	63.35	b	22.03	41.32	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	380	<5.0	--	2.2	-134	6.1	--	--	--	--	--	--
MW4	12/29/08	63.35	b	21.62	41.73	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	<100	**230**	<5.0	--	**2.9**	**-7**	**6.4**	--	--	--	--	--	--
MW5	06/30/98	100.9	a	20.60	80.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	23	--	220	4.3	--	6.1	--	--	--	--	--	--
MW5	07/29/98	100.9	a	21.52	79.38	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	08/26/98	100.9	a	22.21	78.69	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	10/01/98	100.9	a	22.95	77.95	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--	256	4.8	--	6.71	--	--	--	--	--	--
MW5	10/30/98	100.9	a	23.23	77.67	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/30/98	100.9	a	23.12	77.78	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/28/98	100.9	a	23.18	77.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	01/25-26/99	100.9	a	22.61	78.29	0.00	<1.0	<1.0	<1.0	<1.0	<50	--	--	<2.0	--	305	9.7	--	7.04	--	--	--	--	--	--
MW5	02/26/99	100.9	a	19.78	81.12	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/24/99	100.9	a	20.25	80.65	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/12/99	100.9	a	21.06	79.84	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/15-16/99	100.9	a	24.19	76.71	0.00	<0.50	<0.50	<0.50	<0.50	<50	--	--	<0.50	--	--	2.72	--	7.19	--	--	--	--	--	--
MW5	03/20/00	100.9	a	19.15	81.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	07/20/00	100.9	a	21.84	79.06	0.00	<0.50	0.98	<0.50	<0.50	<50	<50	<300	1.9	--	134	5.58	--	6.35	0.11	0.017	49	<0.10	3.9	<0.20
MW5	10/11/00	100.9	a	23.4	77.50	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	04/10-11/01	100.9	a	22.3	78.60	0.00	<0.50	2.6	<0.50	0.6	<50	<50	<300	1.5	--	183	66	--	NR	<0.10	0.042	45	<0.10	2.9	0.11
MW5	07/10/01	100.9	a	23.64	77.26	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	11/20/01	65.59	b	24.65	40.94	0.00	0.83	12	1.2	11	140	860	2,500	10	--	--[c]	66	--	6.01	0.2	2.5	42	<0.10	--	<0.20
MW5	02/19/02	65.59	b	22.37	43.22	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	05/21/02	65.59	b	23.10	42.49	0.00	<0.50	<0.50	<0.50	<0.50	<50	2,200	<300	<2.0	--	140	66	--	6.3	<0.1	0.22	44	<0.10	3	<0.20
MW5	06/27/03	65.59	b	23.07	42.52	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/29/03	65.59	b	24.38	41.21	0.00	<0.50	0.52	7.1	35	100	<50	<500	1.4	--	--	--	--	--	--	--	--	--	--	--
MW5	12/12/03	65.59	b	23.90	41.69	0.00	<0.50	<0.50	<0.50	<1	<50	<50	<500	1.5	--	--	--	--	--	--	--	--	--	--	--
MW5	03/15/04	65.59	b	20.82	44.77	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	6.4	--	--	--	--	--	--	--	--
MW5	06/24/04	65.59	b	23.57	42.02	0.00	<0.50	<0.50	<0.50	<1.0	<50	130	<500	0.79	--	--	5.56	--	--	--	--	--	--	--	--
MW5	09/29/04	65.59	b	24.44	41.15	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/13/04	65.59	b	23.87	41.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/14/05	65.59	b	20.18	45.41	0.00	<0.50	1.3	1.5	8.6	82	<50	<500	<0.50	--	--	3.91	--	5.57	--	--	--	--	--	--
MW5	06/15/05	65.59	b	12.96	52.63	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/26/05	65.59	b	23.60	41.99	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/12/05	65.59	b	23.84	41.75	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/29/06	65.59	b	17.19	48.40	0.00	<0.50	<0.50	<0.50	<0.50	73	<50	<100	<0.50	--	--	2.3	--	6.3	--	--	--	--	--	--
MW5	06/19/06	65.59	b	20.22	45.37	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/29/06	65.59	b	22.80	42.79	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	12/12/06	65.59	b	23.08	42.51	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/01/07	65.59	b	21.02	44.57	0.00	<0.50	<0.50	<0.50	<0.50	54	<50	<100	<0.50	--	--	4.35	--	6.08	--	--	--	--	--	--
MW5	06/12/07	65.59	b	22.78	42.81	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/25/07	65.59	b	24.45	41.14	0.00	<0.50	1.5	<0.50	<0.50	<50	<50	<100	0.64	--	--	18.71	--	6.26	--	--	--	--	--	--
MW5	12/20/07	65.59	b	24.52	41.07	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	03/26/08	65.59	b	24.08	41.51	0.00	<0.50	1.5	<0.50	<0.50	<50	<50	<100	<0.5	--	--	7.93	88	5.86	--	--	--	--	--	--
MW5	06/03/08	65.59	b	23.68	41.91	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW5	09/25/08	65.59	b	25.00	40.59	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	0.66	<5.0	--	2.3	-54	5.5	--	--	--	--	--	--
MW5	12/29/08	65.59	b	24.92	40.67	0.00	<0.50	<0.50	<0.50	<0.50	**71**	<50	<100	<0.5	<5.0	--	**4.8**	**167**	**6.1**	--	--	--	--	--	--
MW6	07/20/00	96.60	a	18.30	78.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	160	--	122	2.72	--	6.66	120	1.9	53	6	0.05	<0.20
MW6	10/11/00	96.60	a	18.69	77.91	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	04/10-11/01	96.60	a	17.85	78.75	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	180	--	142	NR	--	NR	22	2.2	0.69	5.2	<0.05	<0.20

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	Concentration (mg/L) CO_2 (lab)	DO (field)	ORP (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW6	07/10/01	96.60	a	18.43	78.17	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	11/20/01	59.60	b	18.67	40.93	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	450	--	100	2.03	--	6.44	29	5.2	1.1	3.4	--	<0.20
MW6	02/19/02	59.60	b	17.40	42.20	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	05/21/02	59.60	b	17.68	41.92	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	170	--	100	0.76	--	6.6	11	3.4	1.4	8.9	0.65	<0.20
MW6	06/27/03	59.60	b	17.73	41.87	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/29/03	59.60	b	18.48	41.12	0.00	<1.0	<1.0	<1.0	<2.0	230	<50	<500	340	--	--	--	--	--	--	--	--	--	--	--
MW6	12/12/03	59.60	b	17.89	41.71	0.00	<2.5	<2.5	<2.5	<5.0	<250	51	<500	190	--	--	--	--	--	--	--	--	--	--	--
MW6	03/15/04	59.60	b	16.46	43.14	0.00	<1.0	<1.0	<1.0	<2.0	200	<50	<500	220	--	--	0.11	--	--	--	--	--	--	--	--
MW6	06/24/04	59.60	b	17.97	41.63	0.00	<1.0	<1.0	<1.0	<2.0	130	<50	<500	190	--	--	0.05	--	--	--	--	--	--	--	--
MW6	09/29/04	59.60	b	18.55	41.05	0.00	<0.50	0.61	<0.50	1.2	210	<50	<500	190	--	--	0.37	--	6.60	--	--	--	--	--	--
MW6	12/13/04	59.60	b	17.88	41.72	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	03/14/05	59.60	b	16.82	42.78	0.00	<0.50	<0.50	<0.50	1.8	160	<50	<500	190	--	--	0.08	--	5.65	--	--	--	--	--	--
MW6	06/15/05	59.60	b	17.60	42.00	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/26/05	59.60	b	NM	NM	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	12/12/05	59.60	b	18.33	41.27	0.00	0.62	<0.50	<0.50	1.0	81	<50	<500	140	--	--	1.52	--	6.61	--	--	--	--	--	--
MW6	03/29/06	59.60	b	14.53	45.07	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	120	--	--	6.93	--	6.06	--	--	--	--	--	--
MW6	06/19/06	59.60	b	16.46	43.14	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/29/06	59.60	b	17.60	42.00	0.00	0.87	<0.50	<0.50	<0.50	<50	<50	<100	140	--	--	0.16	--	6.49	--	--	--	--	--	--
MW6	12/12/06	59.60	b	16.93	42.67	0.00	0.67	<0.50	<0.50	<0.50	<50	<50	230	89	--	--	0.5	--	6.68	--	--	--	--	--	--
MW6	03/01/07	59.60	b	16.30	43.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	78	--	--	0.83	--	6.66	--	--	--	--	--	--
MW6	06/12/07	59.60	b	17.38	42.22	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/25/07	59.60	b	18.36	41.24	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	89	--	--	8.5	--	6.78	--	--	--	--	--	--
MW6	12/20/07	59.60	b	17.90	41.70	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	03/26/08	59.60	b	17.37	42.23	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	68	--	--	5.57	-35	6.38	--	--	--	--	--	--
MW6	06/03/08	59.60	b	17.11	42.49	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW6	09/25/08	59.60	b	18.82	40.78	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	78	<5.0	--	1.6	-160	6.2	--	--	--	--	--	--
MW6	12/29/08	59.60	b	18.30	41.30	0.00	**0.77**	<0.50	<0.50	<0.50	<50	<50	<100	**44**	<5.0	--	**1.2**	**-60**	**6.5**	--	--	--	--	--	--
MW7	07/20/00	96.75	a	15.93	80.82	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	--	32.2	7.15	--	7.43	<0.1	0.002	7.5	<0.10	2.6	0.13
MW7	10/11/00	96.75	a	16.90	79.85	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	04/10-11/01	96.75	a	15.80	80.95	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	--	77.6	NR	--	NR	0.18	0.048	49	<0.10	2.7	0.31
MW7	07/10/01	96.75	a	16.71	80.04	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	11/20/01	59.47	b	16.17	43.30	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<2.0	--	62	0.96	--	7.11	0.16	1.8	63	<0.10	--	<0.20
MW7	02/19/02	59.47	b	14.92	44.55	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	05/21/02	59.47	b	15.18	44.29	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<300	<0.50	--	68	1.03	--	7.57	0.11	0.35	51	<0.10	2.8	0.11
MW7	06/27/03	59.47	b	16.28	43.19	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/29/03	59.47	b	16.88	42.59	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	0.62	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/03	59.47	b	14.95	44.52	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	--	--	--	--	--	--	--	--	--
MW7	03/15/04	59.47	b	14.77	44.70	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	0.54	--	--	--	--	--	--	--	--
MW7	06/24/04	59.47	b	16.33	43.14	0.00	<0.50	<0.50	<0.50	<1.0	<50	300	<500	<0.50	--	--	0.20	--	--	--	--	--	--	--	--
MW7	09/29/04	59.47	b	16.88	42.59	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/13/04	59.47	b	15.26	44.21	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/14/05	59.47	b	15.00	44.47	0.00	<0.50	<0.50	<0.50	<1.0	<50	<50	<500	<0.50	--	--	0.47	--	6.15	--	--	--	--	--	--
MW7	06/15/05	59.47	b	15.32	44.15	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/26/05	59.47	b	NM	NM	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/05	59.47	b	15.99	43.48	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/29/06	59.47	b	12.65	46.82	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--	--	0.72	--	5.81	--	--	--	--	--	--
MW7	06/19/06	59.47	b	14.49	44.98	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/29/06	59.47	b	16.67	42.80	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	12/12/06	59.47	b	15.21	44.26	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/01/07	59.47	b	14.68	44.79	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--	--	0.92	--	6.84	--	--	--	--	--	--
MW7	06/12/07	59.47	b	16.2	43.27	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/25/07	59.47	b	16.72	42.75	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--	--	6.11	--	6.78	--	--	--	--	--	--
MW7	12/20/07	59.47	b	15.02	44.45	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	03/26/08	59.47	b	15.95	43.52	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	--	--	3.3	23	6.46	--	--	--	--	--	--
MW7	06/03/08	59.47	b	14.24	45.23	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW7	09/25/08	59.47	b	17.07	42.40	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0	--	1.5	-186	6.3	--	--	--	--	--	--
MW7	12/29/08	59.47	b	15.64	43.83	0.00	<0.50	<0.50	<0.50	<0.50	<50	<50	<100	<0.50	<5.0	--	**6.4**	**-50**	**6.9**	--	--	--	--	--	--

TABLE 1 CUMULATIVE GROUNDWATER ELEVATION AND ANALYTICAL DATA
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

Well Number	Date	Casing Elevation (feet)		Depth to Water (feet)	GW Elevation (feet)	SPH Thickness (feet)	Concentration (µg/L) Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	TPH-mo	MTBE	TBA	Concentration (mg/L) CO_2 (lab)	DO (field)	ORP (mv) (field)	pH (field)	Fe(II)	Mn	SO_4	$N\text{-}NH_3$	$N\text{-}NO_3$	$o\text{-}PO_4$
MW8	12/29/08	NS	b	15.71	NC	0.00	<0.50	**0.64**	<0.50	**0.78**	<50	<50	<100	**1.5**	<5.0	--	**1.5**	**-3**	**6.6**	--	--	--	--	--	--

SPH Separate-phase hydrocarbons.
CO_2 Carbon dioxide.
DO Dissolved oxygen.
Fe(II) Ferrous iron.
Mn Manganese.
SO_4 Sulfate.
$N\text{-}NH_3$ Ammonia.
$N\text{-}NO_3$ Nitrate.
$o\text{-}PO_4$ Ortho-Phosphate.
GW Groundwater.
TPH-g Total Petroleum Hydrocarbons as gasoline.
TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-mo Total Petroleum Hydrocarbons as motor oil.
MTBE Methyl tertiary butyl ether.
NC Not calculated.
NM Not measured.
NR Not reported.
NS Not yet surveyed
µg/L Micrograms per liter.
mg/L Milligrams per liter.
* SPH present; not sampled.
** Well MW4 elevation modified due to site renovation activities. Not Surveyed.
-- Not analyzed or not sampled.
< Less than the laboratory reporting limits.
a Elevations are referenced to monitoring well MW1, with assumed datum of 100.00 feet.
b Elevations based on a survey conducted August 2002 and referenced benchmark with known elevation (NGVD 29) of 60.40 feet above mean sea level.
c Analysis not conducted due to broken sample containers.
d Hydrocarbon reported in the gasoline range does not match laboratory gasoline standard.
e Groundwater elevation in wells with LPH are corrected by multiplying the specific gravity of gasoline (0.69) by the LPH thickness and adding this value to the water elevation.
f Hydrocarbon reported is in the early diesel range, and does not match the laboratory diesel standard.
g Sample contained discrete peak in gasoline range and identified by lab as MTBE.
h Quantity of unknown hydrocarbon(s) in sample based on diesel.
i The concentration reported reflect(s) individual or discrete unidentified peaks not matching a typical fuel pattern.
j Depth to groundwater is based on the depth of the stingers.
k Quantity of unknown hydrocarbon(s) in sample based on mtor oil.

TABLE 2 SOIL ANALYTICAL DATA-DECEMBER 2007 INVESTIGATION
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

			Concentrations (mg/kg)							
Boring ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TPH-g	TPH-d	TPH-mo
SB3	12/26/2007	6	<0.005	<0.005	<0.005	0.0088	<0.005	2.1	7.6	<10
SB3	12/26/2007	10	<0.005	<0.005	<0.005	0.052	0.012	4.5	9.3	<10
SB3	12/26/2007	15	<0.005	<0.005	<0.005	<0.005	**0.21**	<1	2.4	<10
SB3	12/26/2007	23	0.0062	0.03	0.22	3	0.028	140	85	<10
SB4	12/26/2007	7	<0.005	<0.005	<0.005	<0.005	<0.005	<1	1.4	<10
SB4	12/26/2007	24	**1.2**	**12**	**5**	**26**	<0.025	**240**	47	<10
SB5	12/26/2007	11	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB5	12/26/2007	26	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB6	12/26/2007	10	<0.005	<0.005	<0.005	0.17	<0.005	19	250	<10
SB6	12/26/2007	18	<0.005	<0.005	<0.005	0.12	<0.005	7.2	64	<10
SB6	12/26/2007	26	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB7	12/26/2007	6	<0.005	<0.005	<0.005	<0.005	<0.005	<1	1.7	<10
SB7	12/26/2007	20	<0.005	<0.005	<0.005	0.048	<0.005	3.5	**720**	<10
SB7	12/26/2007	26	<0.005	<0.005	<0.005	0.0073	<0.005	<1	<1	<10
SB7	12/26/2007	35	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB8	12/26/2007	14	<0.005	<0.005	<0.005	<0.005	<0.005	<1	5	<10
SB8	12/26/2007	24	0.044	0.03	0.098	0.36	<0.005	1.9	2.7	<10
SB9	12/26/2007	8	<0.005	<0.005	<0.005	<0.005	<0.005	<1	47	<10
SB9	12/26/2007	22	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10

TPH-g Total Petroleum Hydrocarbons as gasoline.

TPH-d Total Petroleum Hydrocarbons as diesel.

TPH-mo Total Petroleum Hydrocarbons as motor oil.

720 Bold values reflect maximum detected concentrations

< Less than the laboratory reporting limits.

TABLE 3 GRAB GROUNDWATER ANALYTICAL DATA-DECEMBER 2007 INVESTIGATION
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

			Concentrations (µg/L)							
Boring ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TPH-g	TPH-d	TPH-mo
SB3	12/26/2007	24	0.75	28	35	180	0.59	1800	<1000	<100
SB3	12/26/2007	40	<0.50	1.1	5.3	33	1	240	<400	<100
SB4	12/26/2007	23	160	120	200	240	1.8	3500	<1500	<100
SB4	12/26/2007	40	250	1400	280	2000	3.2	9900	<1500	<100
SB5	12/26/2007	24	**660**	**11000**	**4200**	**20000**	34	**110000**	<100000	310
SB5	12/26/2007	40	74	1000	380	2400	31	13000	<3000	<100
SB6	12/26/2007	25	<0.5	6.6	3.6	27	1.2	210	<100	<100
SB6	12/26/2007	40	85	1500	620	6900	15	35000	<18000	<100
SB7	12/26/2007	40	120	1100	470	2900	7.9	20000	<6000	<100
SB8	12/26/2007	40	320	1300	920	3100	100	17000	<3000	<100
SB9	12/26/2007	34	<0.5	<0.5	<0.5	<0.5	92	<50	69	<100
SB10	12/26/2007	21.3	<0.5	<0.5	<0.5	<0.5	30	<50	2200	5000
SB11	12/26/2007	17	<0.5	<0.5	<0.5	<0.5	<50	<50	200	220
SB12	12/26/2007	20	<0.5	<0.5	<0.5	<0.5	43	67	950	1200
SB13	12/26/2007	26	<0.5	<0.5	<0.5	<0.5	**160**	<50	**3800**	**6600**

TPH-g Total Petroleum Hydrocarbons as gasoline.

TPH-d Total Petroleum Hydrocarbons as diesel.

TPH-mo Total Petroleum Hydrocarbons as motor oil.

< less than the laboratory reporting limits.

660 Bold values reflect maximum detected concentrations

TABLE 4 SOIL ANALYTICAL DATA-DECEMBER 2008 IRAP INVESTIGATION
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

			Concentrations (mg/kg)							
Boring ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TPH-g	TPH-d	TPH-mo
SB14	12/15/2008	23.3	**2.8**	**29**	**11**	**98**	0.12	**880**	160	<10
SB14	12/15/2008	50	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB14	12/15/2008	54	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB15	12/16/2008	18.5	<0.005	<0.005	<0.005	<0.005	<0.005	<1	2.2	<10
SB15	12/16/2008	23.3	1.1	14	9.5	56	**0.19**	670	**220**	<10
SB15	12/16/2008	50	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB15	12/16/2008	55	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB16	12/15/2008	23.3	0.016	<0.005	0.013	<0.005	0.0065	<1	1.3	<10
SB16	12/15/2008	50	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<10
SB16	12/15/2008	55	<0.005	<0.005	<0.005	<0.005	<0.005	<1	3	<10
SB17	12/16/2008	18.5	<0.005	<0.005	0.014	<0.005	<0.005	<1	41	**120**

TPH-g Total Petroleum Hydrocarbons as gasoline.

TPH-d Total Petroleum Hydrocarbons as diesel.

TPH-mo Total Petroleum Hydrocarbons as motor oil.

720 Bold values reflect maximum detected concentrations

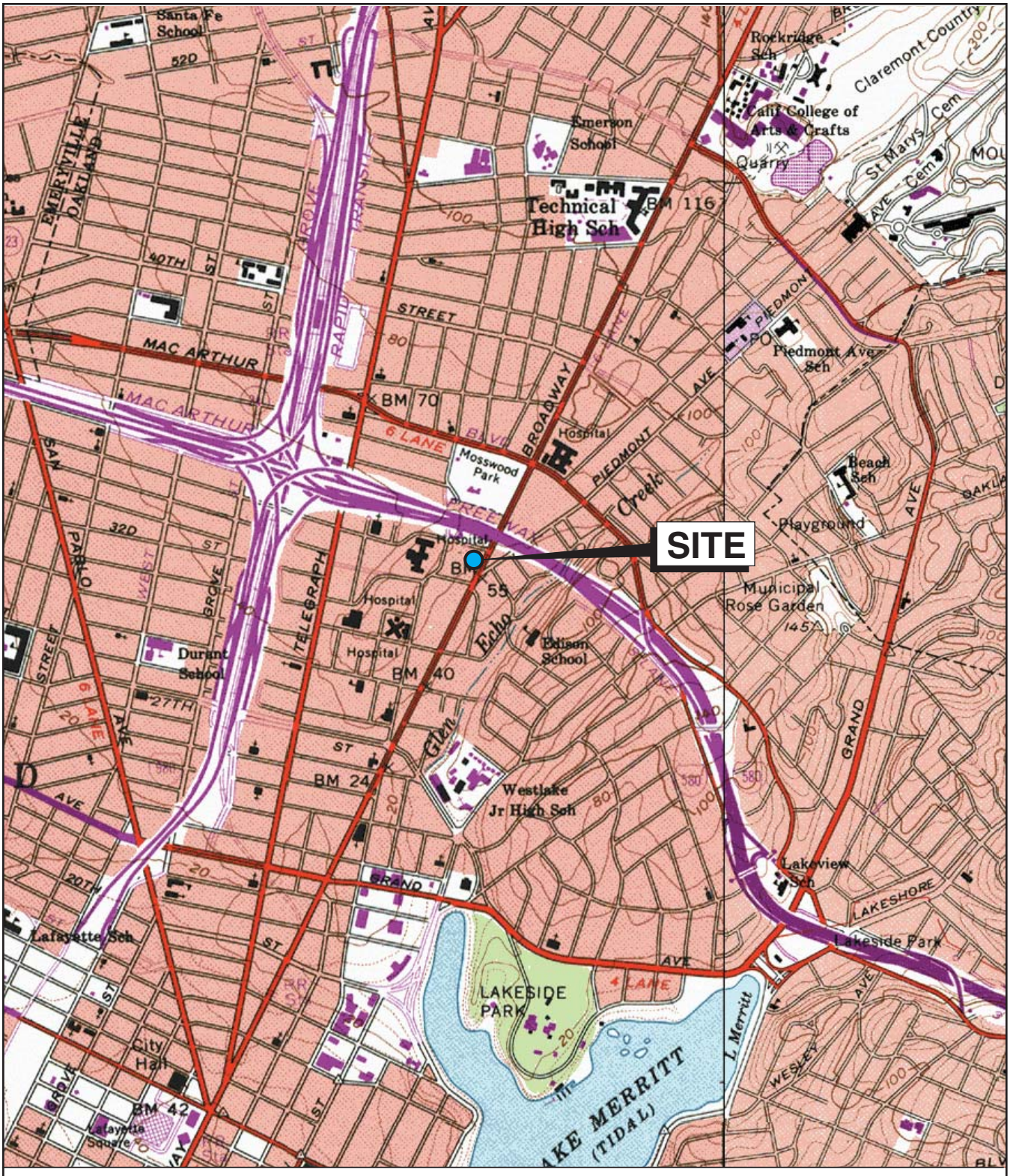
< Less than the laboratory reporting limits.

TABLE 5 GRAB GROUNDWATER ANALYTICAL DATA-DECEMBER 2008 IRAP INVESTIGATION
FORMER VAL STROUGH CHEVROLET, 327 34th STREET OAKLAND, CALIFORNIA

			Concentrations (µg/L)							
Boring ID	Date	Depth (feet)	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	TPH-g	TPH-d	TPH-mo
SB14	12/15/2008	23.8	**22**	**300**	**96**	**640**	2.1	**4300**	<400	<100
SB15	12/16/2008	24.1	0.71	6.7	5.7	28	<0.5	830	<50	<100
SB15	12/16/2008	55	1.1	5.2	1.7	13	<0.5	100	<200	300
SB16	12/15/2008	23.8	<0.5	3.4	3.8	23	**3.8**	170	<50	<100
SB16	12/16/2008	55	<0.5	5.6	3.7	21	0.72	140	<50	<100
SB17	12/16/2008	18.8	<0.5	<0.5	<0.5	<0.5	<0.5	<50	**170**	**760**

TPH-g Total Petroleum Hydrocarbons as gasoline.
TPH-d Total Petroleum Hydrocarbons as diesel.
TPH-mo Total Petroleum Hydrocarbons as motor oil.
< less than the laboratory reporting limits.
660 Bold values reflect maximum detected concentrations

FIGURES



Base map: Maptech Inc., 2001

N

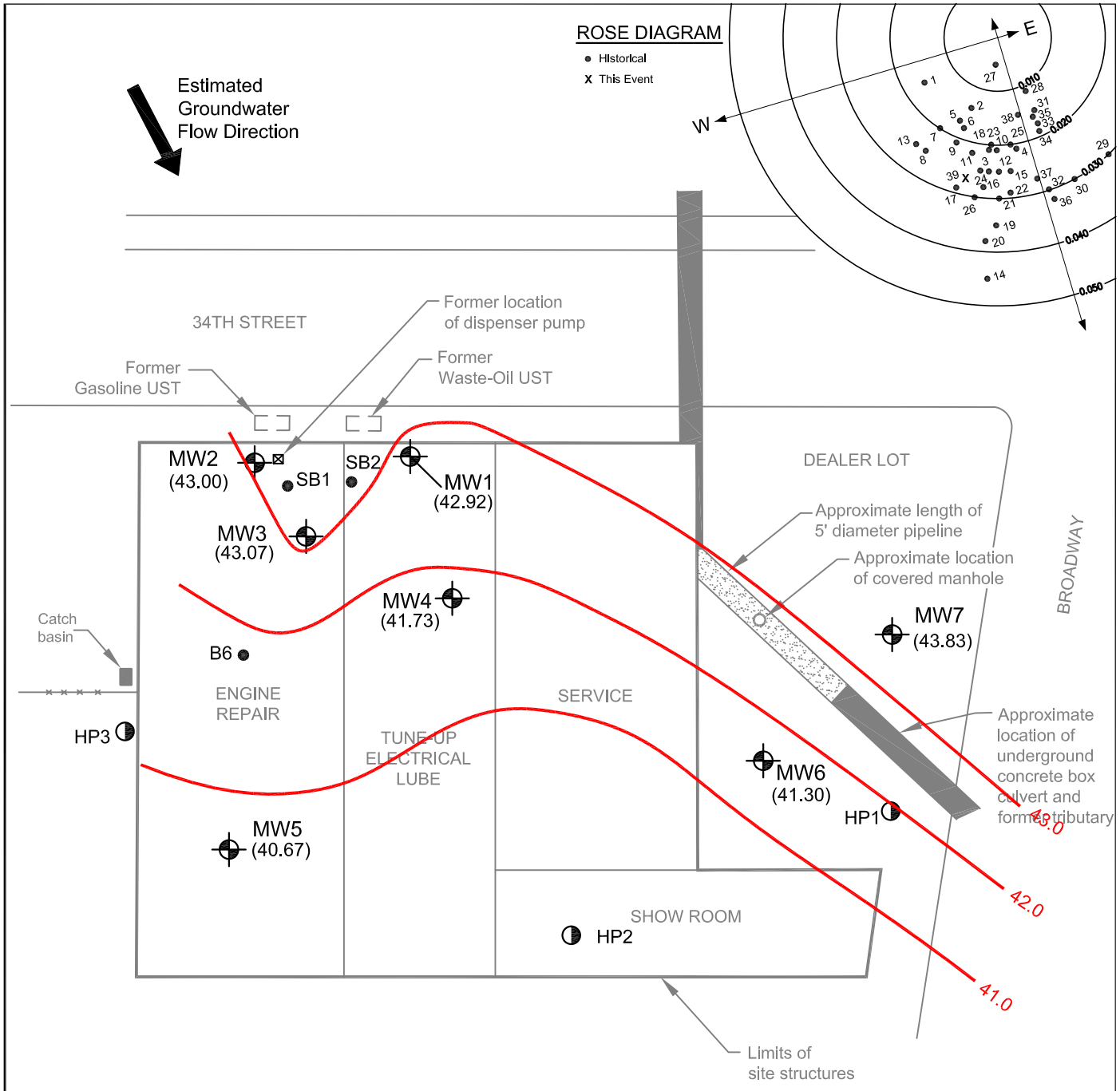
0 2,000

Scale (feet)

LRM consulting inc.

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

FIGURE: **1**



LEGEND:

SB1 ●	Soil boring
HP2 ◑	Grab groundwater sampling location
MW3 ⊕	Groundwater monitoring well
(43.07)	Groundwater elevation (feet above mean sea level)
43.0 ~	Groundwater elevation contour (feet above mean sea level)

N

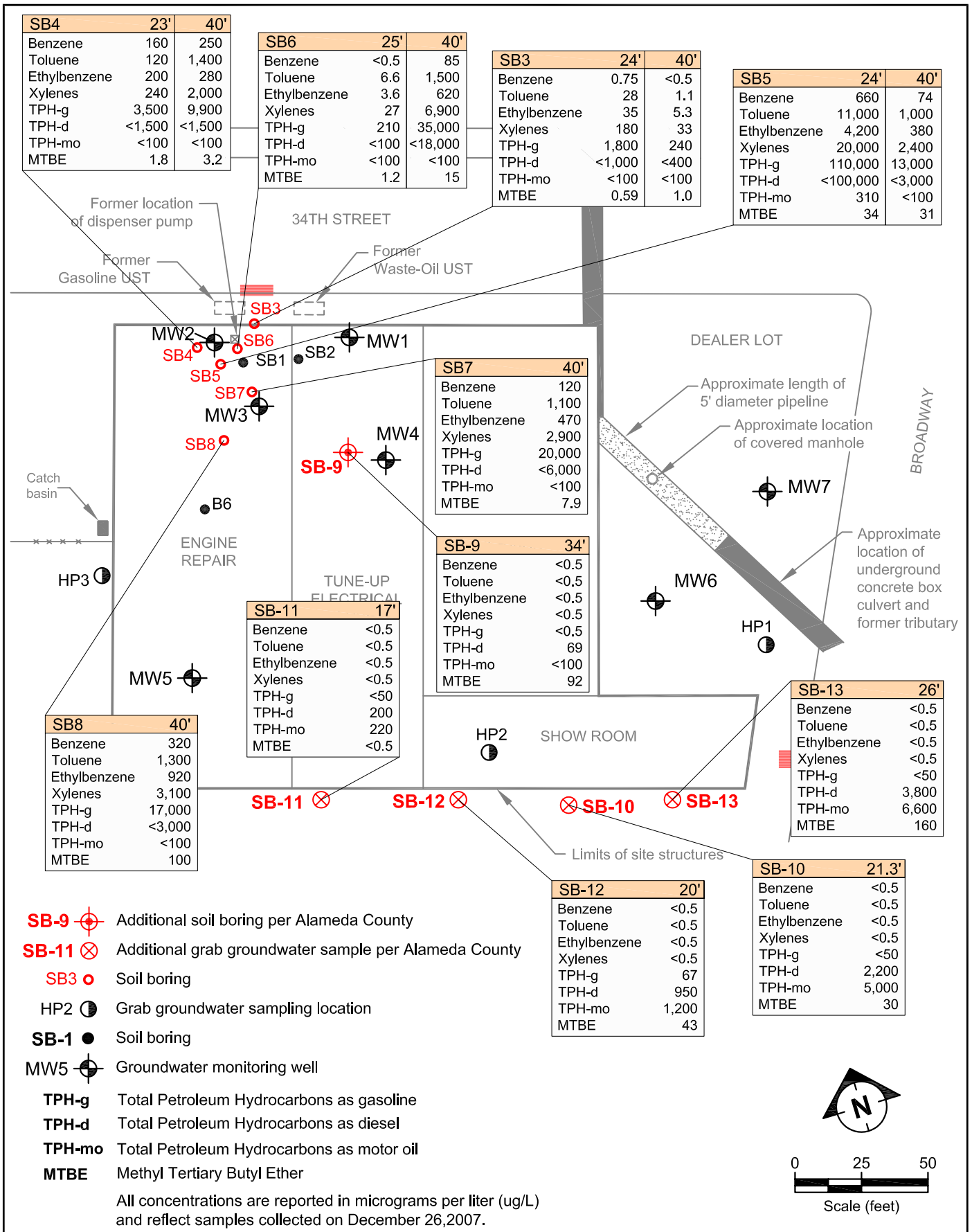
0 25 50

Scale (feet)

LRM consulting inc.

GROUNDWATER CONTOUR MAP AND ROSE DIAGRAM
4TH QUARTER 2008 MONITORING EVENT
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA
DECEMBER 2008

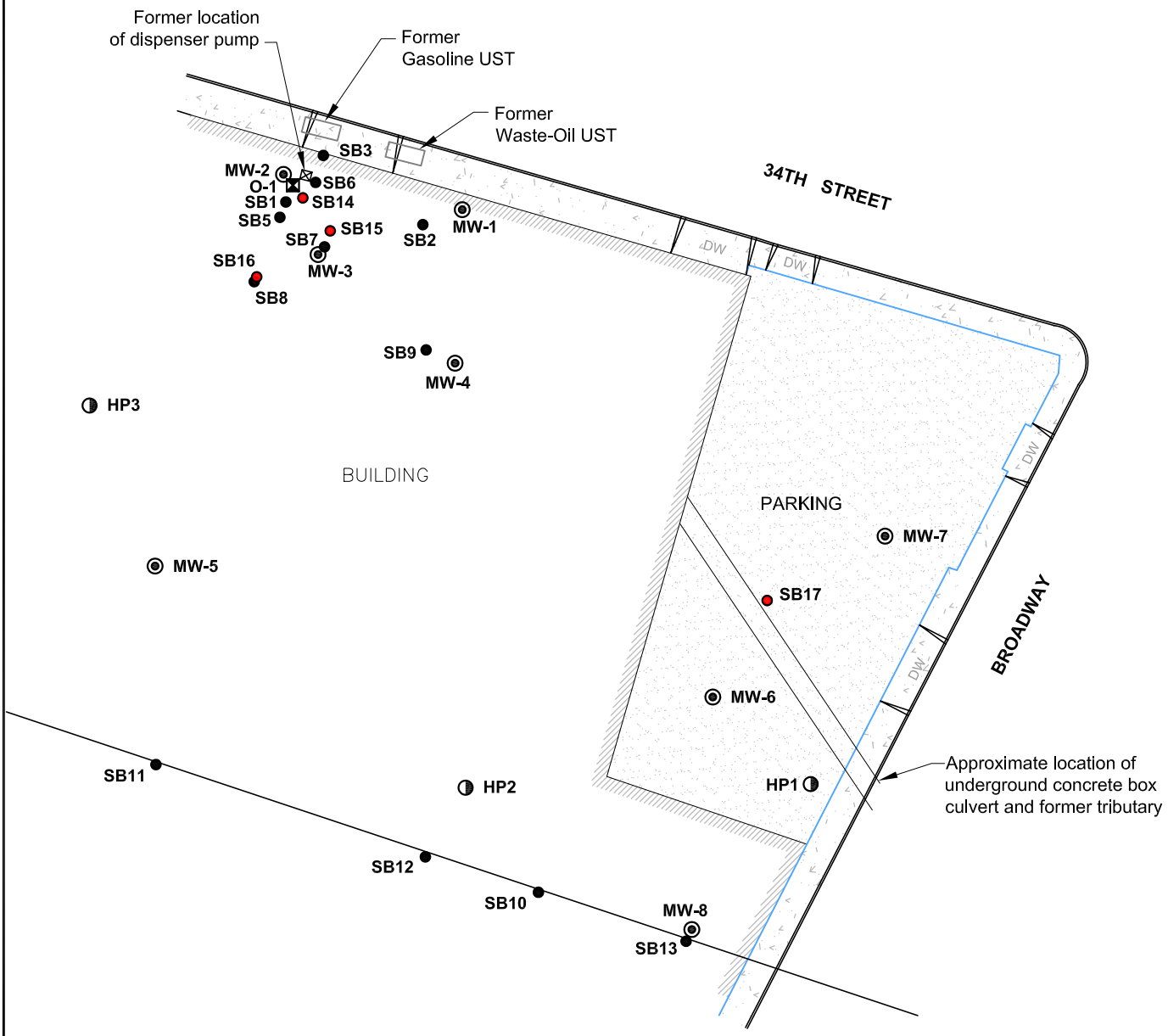
FIGURE: **2**



LRM consulting inc.

GRAB GROUNDWATER ANALYTICAL RESULTS
DECEMBER 2007 INVESTIGATION
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA
JANUARY 2009

FIGURE: **3**



LEGEND:

- Monitoring Well
- Past Exploratory Boring
- December 2008 Exploratory Boring
- Oxygen Injection Well
- Grab Groundwater Sampling Location

N

0 25 50

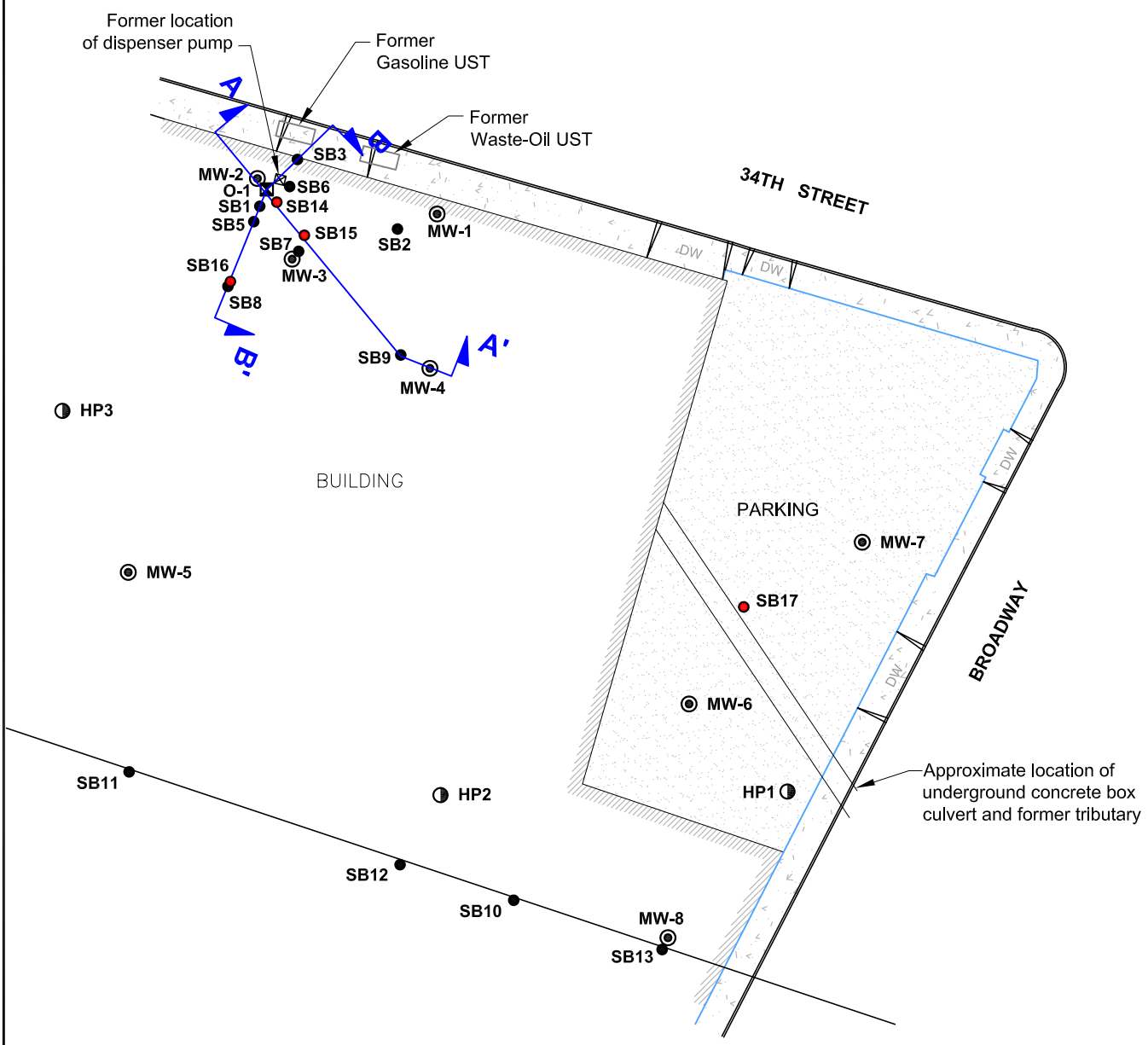
Scale (feet)

Base Map: Virgil Chavez Land Surveying, dated January 2009.

LRM consulting inc.

SITE PLAN
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA
JANUARY 2009

FIGURE: **4**



LEGEND:

- Monitoring Well
- Past Exploratory Boring
- December 2008 Exploratory Boring
- Oxygen Injection Well
- Grab Groundwater Sampling Location
- A A' Location of Geologic Cross-Section

Base Map: Virgil Chavez Land Surveying, dated January 2009.

N

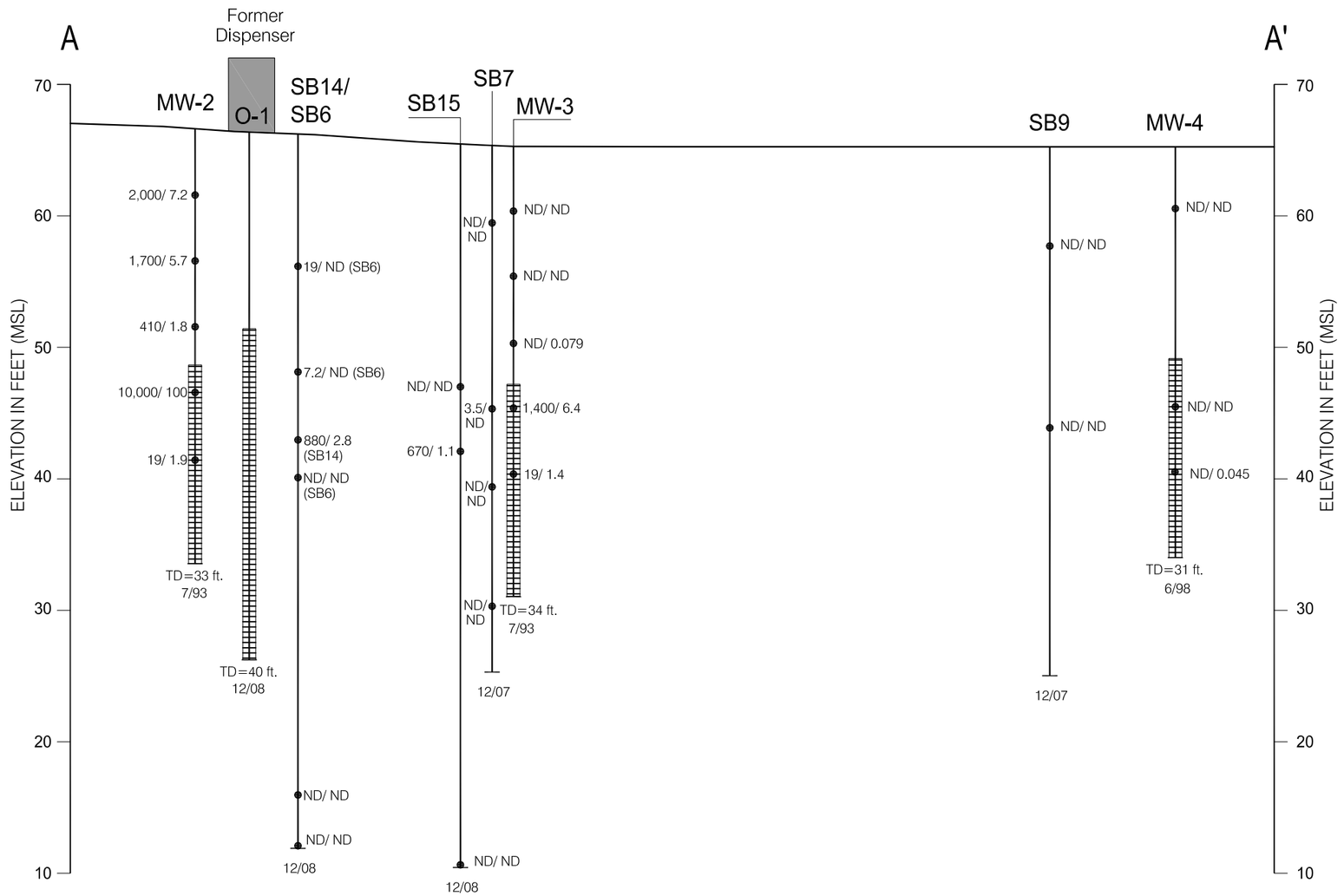
0 25 50

Scale (feet)

LRM consulting inc.

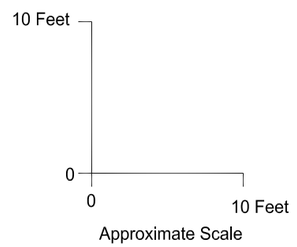
LOCATIONS OF GEOLOGIC CROSS-SECTIONS
FORMER VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA
JANUARY 2009

FIGURE: **5**



LEGEND

- Potentiometric surface (12-29-08)
- Groundwater sample (date shown)
- 880/ 2.8 Concentrations of TPHg/ Benzene in soil (mg/kg)
- ND Not detected
- MSL Mean Sea Level
- TD Total depth



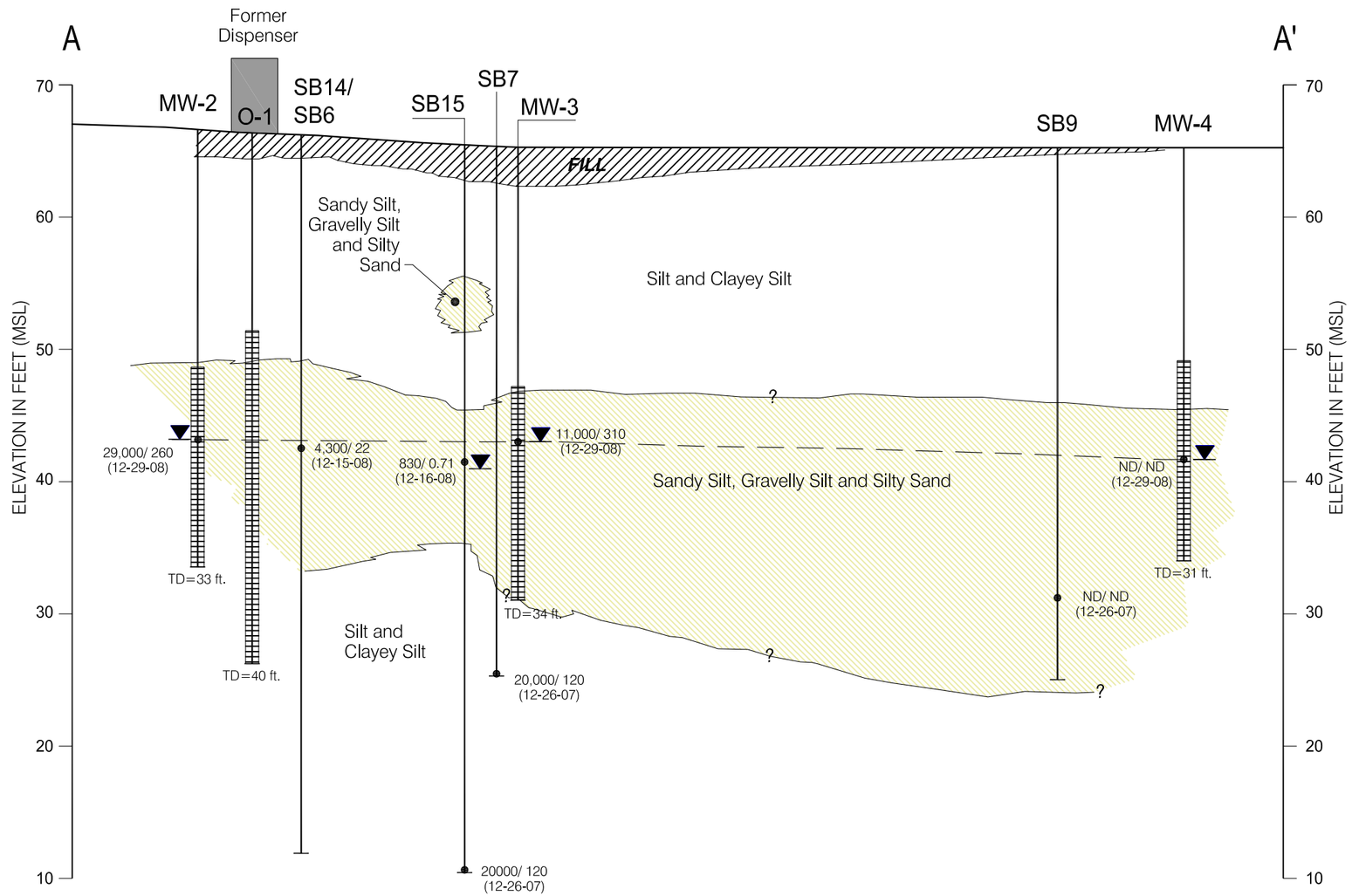
GEOLOGIC CROSS-SECTION A-A'
HISTORICAL HYDROCARBON CONCENTRATIONS IN SOIL

FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

LRM consulting inc.

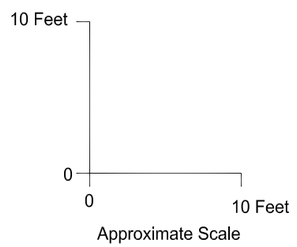
Date: 1/28/2009

Figure: 6



LEGEND

- Potentiometric surface (12-29-08)
- Groundwater sample (date shown)
- 1,800/ 0.75 Concentrations of TPHg/ Benzene in groundwater (μgL)
- ND Not detected
- MSL Mean Sea Level
- TD Total depth



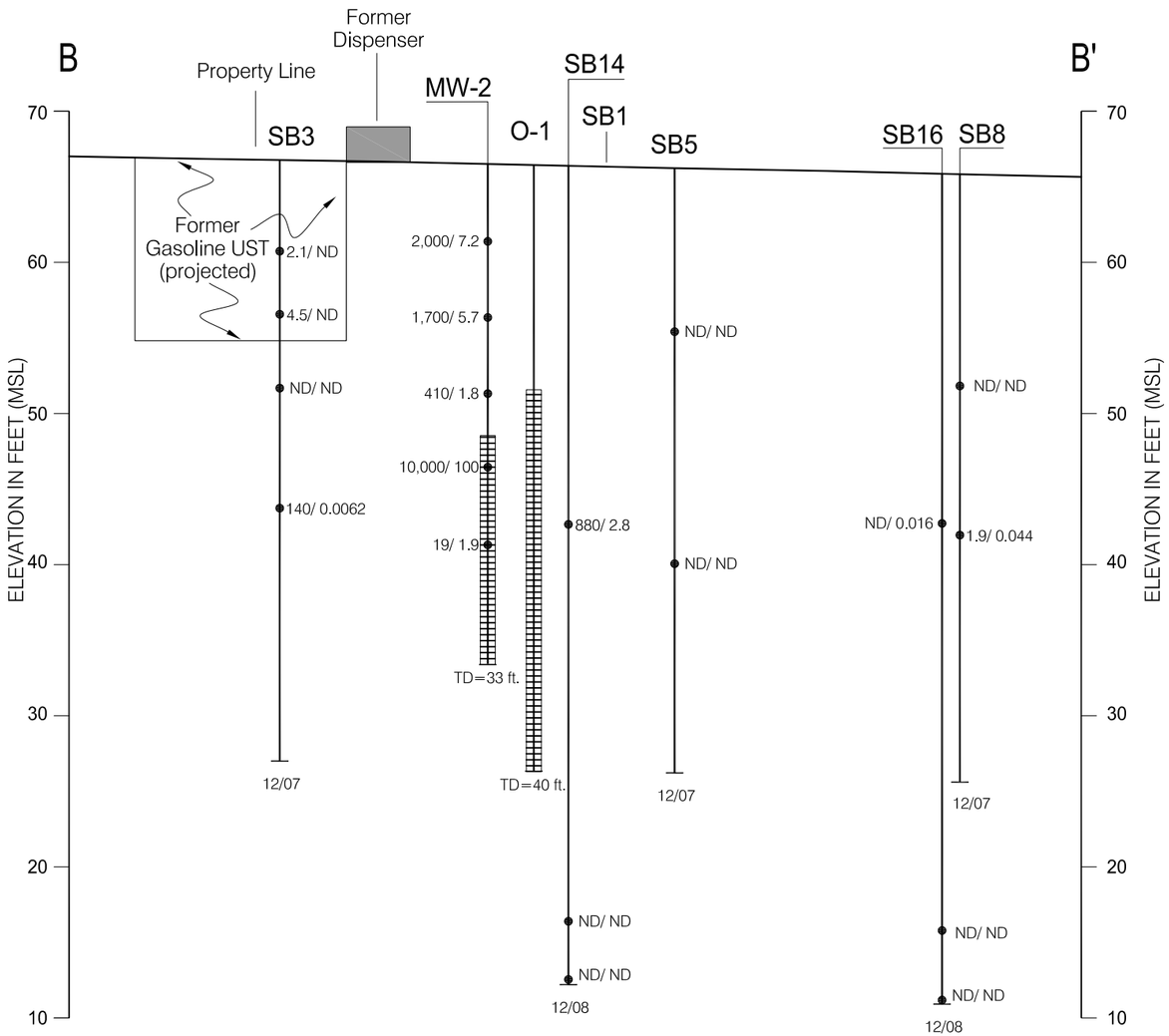
GEOLOGIC CROSS-SECTION A-A'
HISTORICAL HYDROCARBON CONCENTRATIONS IN GROUNDWATER

FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

LRM consulting inc.

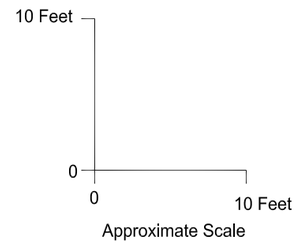
Date: 1/28/2009

Figure: 7



LEGEND

- ▼ Potentiometric surface (12-29-08)
- ● Groundwater sample (date shown)
- 880/ 2.8 Concentrations of TPHg/ Benzene in soil (mg/kg)
- ND Not detected
- MSL Mean Sea Level
- TD Total depth



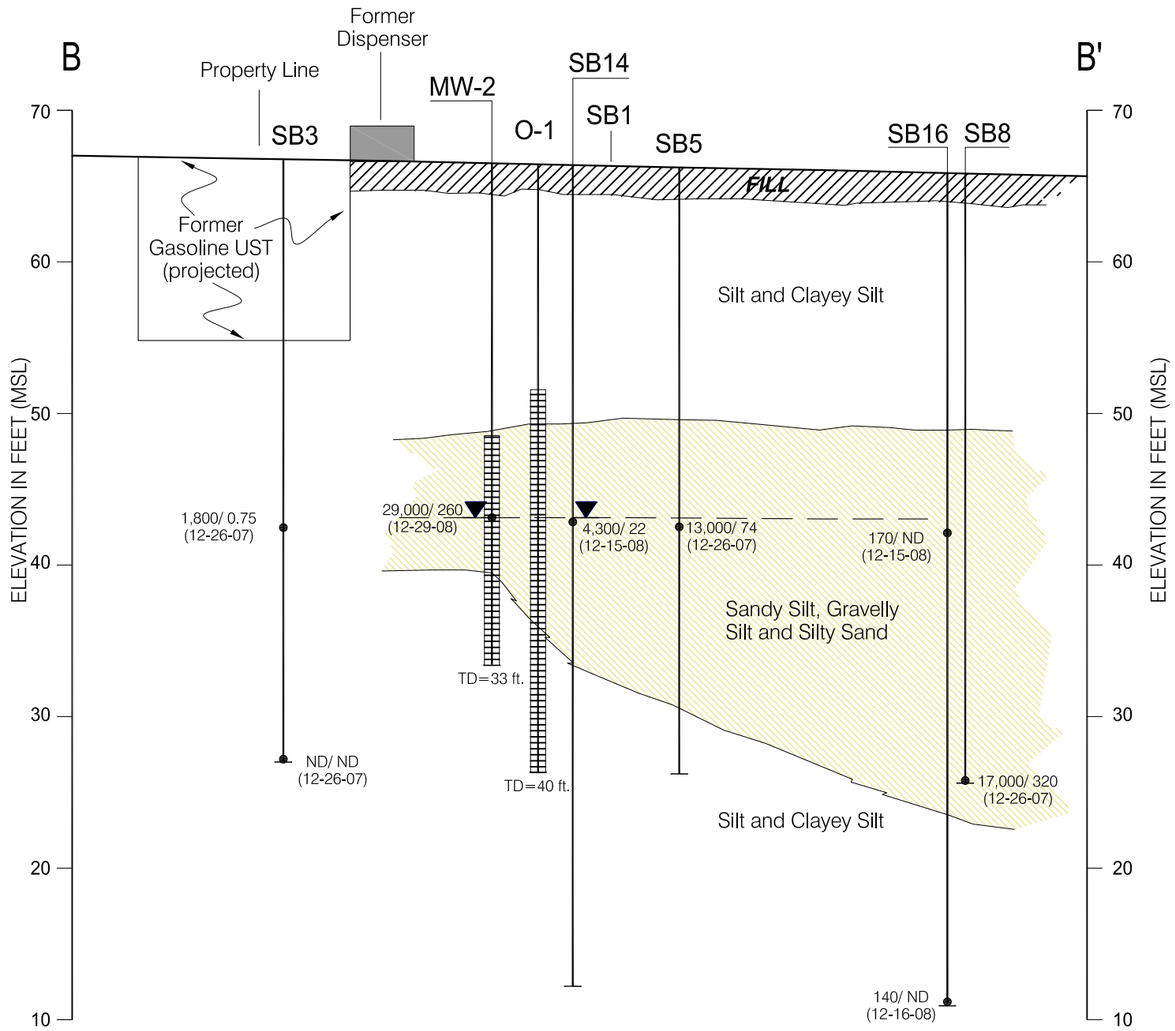
GEOLOGIC CROSS-SECTION B-B'
HISTORICAL HYDROCARBON CONCENTRATIONS IN SOIL

FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

LRM consulting inc.

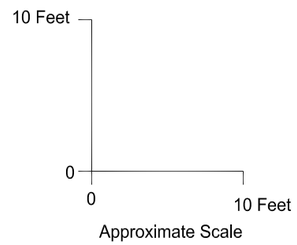
Date: 1/28/2009

Figure: 8



LEGEND

- ▼ Potentiometric surface (12-29-08)
- • Groundwater sample (date shown)
- 1,800/ 0.75 Concentrations of TPHg/ Benzene in groundwater (μgL)
- ND Not detected
- MSL Mean Sea Level
- TD Total depth



GEOLOGIC CROSS-SECTION B-B'
HISTORICAL HYDROCARBON CONCENTRATIONS IN GROUNDWATER

FORMER VAL STROUGH CHEVROLET
327 34TH STREET
OAKLAND, CALIFORNIA

LRM consulting inc.

Date:	Figure:
1/28/2009	9

APPENDIX A

RESPONSE TO IRAP COMMENTS

Ms. Barbara Jakub
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 9502-6577

Subject: Former Val Strough Chevrolet Site
327 34th Street, Oakland, CA
Site ID #3035, RO#0000134

Dear Ms. Jakub:

This letter is to accompany the *Interim Remediation Action Plan* response to comments for the above-referenced site prepared by LRM Consulting, Inc. of Burlingame, CA.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions, please contact Mr. Mehrdad Javaherian of LRM Consulting, Inc. at 650-343-4633.

Sincerely,

Linda L. Strough
Trustee

cc: Mehrdad Javaherian, LRM Consulting, Inc., 1534 Plaza Lane, #145, Burlingame, CA 94010
Greggory Brandt, Wendel Rosen Black & Dean, 1111 Broadway, 24th Floor, Oakland, CA 94607

December 5, 2008

Barbara Jakub, P.G.
Alameda County Environmental Health (ACEH)
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 9502-6577

Re: Response to Comments on the Interim Remedial Action Plan (IRAP)
327 34th Street, Oakland, CA, Site ID #3035, RO#0000134

Dear Ms. Jacobs:

Thank you for your email dated December 4th, 2008 summarizing ACEH's technical comments on the above-referenced document prepared by LRM Consulting, Inc. (LRM). LRM's understanding form your comments is that the ACEH is conditionally approving the proposed scope of work in the IRAP, with specific changes to be implemented based on the comments you've provided. LRM further understands that that the ACEH is requiring submittal of an investigation report by February 5, 2009, documenting additional information requested and the results of the proposed boring/well installations prior to initiation of the pilot testing.

LRM's responses and clarifications related to each of the ACEH's comments are outlined below. Per the ACEH comments, many of these clarifications will be further documented in the soil and groundwater investigation report requested by the ACEH in February 2009. LRM has scheduled the soil and groundwater investigation components of the IRAP for December 12th, and December 15th through December 18th, 2008.

RESPONSE TO COMMENTS

Comment 1. Source Area Borings. As per the e-mail modification to the work plan, you recommend advancing a Geoprobe boring to 60 feet to collect soil samples, then advancing two additional borings and using a hydropunch tool, collect water at 50 feet bgs and 60 feet bgs. ACEH is concerned that a Geoprobe rig will not be able to advance the borings to a depth of 60 feet and that another mobilization will need to be performed. We request that you consider using a CPT rig instead of a Geoprobe rig. If you use a Geoprobe rig and are unable to advance it to the required depth, the UST Fund may not reimburse you for a second mobilization. Also, CPT can provide continuous coring logs. Additionally, since groundwater samples collected at 40 feet contained elevated petroleum hydrocarbons, Installation of wells in the deeper zone may be required at a future date. Please update your cross-sections with the information obtained during this investigation. Include plots of the contaminant plumes on your maps, cross-sections, and diagrams in the report requested below.

Response to Comment 1: Following your comment, we checked further with Vironex whom we had scoped to perform the drilling. They, together with LRM's senior geologist, Joel Greger,

CEG, both confirmed the ability to drill borings down to the defined depth using Geoprobe at other locations near the subject site. Moreover, we don't think there will be a re-mobilization issue since we have scoped several shallow borings, enough for at least one day of drilling, at depths which we've previously drilled using Geoprobe technology at the site; hence, a Geoprobe rig, even if challenged, will be used to complete those borings. Lastly, we have worked out an arrangement with Vironex that should there be any challenges with the Geoprobe rig, we would not be charged an extra mobilization fee. While we agree that the CPT can provide better logs, we intend to perform continuous coring within at least one deep boring within the source area, and in all shallow borings in the vicinity of the box culvert, so the geology should be adequately defined using the drilling as proposed.

Comment 2. Box Culvert Borings. As shown on the ETIC cross-section, the top of the box culvert is at 17 feet bgs and the bottom is approximately at 23 ft bgs. The depths of the borings you propose only go to the top of the box culvert. Groundwater is typically below this interval. Please advance each of your proposed borings to at least 25 feet to obtain groundwater samples at each location. The box culvert is only drawn to the edge of the site. Please expand the map to include the location of the culvert offsite.

Response to Comment 2: We will deepen the culvert borings to a depth of 25 feet bgs as requested.

Comment 3. Downgradient Monitoring Well. As stated in the IRAP, the contamination in this area may be coming from a different source. Please include an evaluation of whether the contamination in this area is coming from a separate source or if it is related to the USTs in the northern portion of the site in the report requested below.

Well permitting is performed through Alameda County Public Works Department. Please notify them as required before grouting the well. In addition to this, please notify ACEH 72 hours in advance and in writing (preferably e-mail), prior to initiating work at the site. Please allow at least 48 hours before developing the well to allow the grout to cure. Survey the well in accordance with Geotracker regulations and resurvey all of the wells to the NAVD 88 datum as specified in Geotracker. Wells are said to be surveyed to NAVD 29. When new well is surveyed, resurvey all wells to NAVD 88.

Response to Comment 3 The well permitting with Alameda County Public Works Department has already been performed. We will also notify you of the drilling 72 hours prior to initiation. We will resurvey the site wells per your guidelines.

Additionally, please note that following further discussions with the site tenant and the adjacent site, we intend to place the downgradient monitoring well within the onsite building, which extends to the property line. Due to the ceiling height limitations, we will need to use a small, rubber track-mounted Geoprobe rig to drill and install a 1", pre-packed well. Given the use of this well for monitoring only, we do not see any limitations with a smaller well than originally intended. In short, we have no other options at this location inside the building. Going outside the building will necessarily place this well offsite, requiring various rigorous agreements to be in place.

Comment 4. Proposed Interim Remediation. Interim remediation has already been performed at this site. At this point, ACEH requests that you perform a pilot test of the iSOC technology for three months rather than 6 months to determine if iSOC is effective and if scaling up the system would be an effective remediation solution or if another technology would be more effective in reducing separate phase hydrocarbons (SPH) at the site. Please provide the criteria you will evaluate to determine if iSOC is effective in the report requested below and submit it to this office for concurrence.

LRM proposes installing the iSOC oxygen diffusion well screen from 35 to 20 feet bgs. Setting the well screen at this interval will not intercept the top of groundwater or SPH in the rainy season. We are also concerned that dispersion of oxygen over 15 feet of screen will not effectively target the areas needing remediation. Also please specify the length of the microporous hollow-fiber membrane, at what depth it will be set and the oxygen flow rate. Please provide manufacturer's information on how oxygen is expected to move through the screened area to the formation to backup your proposal for the well screen intervals and iSOC placement. Please submit this information in the report requested below for concurrence.

LRM states that after the pilot test is completed, they will submit a work plan to scale-up the system. However, after the pilot test is evaluated, submittal of a CAP will be required. The CAP must be prepared in accordance with Title 23, California Code of Regulations, Section 2725 and evaluate at least three active remediation alternatives for remedying or mitigating the actual or potential adverse effects of the unauthorized release(s) besides the 'no action' and 'monitored natural attenuation' remedial alternatives. Each alternative shall be evaluated for cost-effectiveness and the Responsible Party must propose the most cost-effective corrective action and shortest timeframes for both active remediation and to reach water quality objectives (cleanup goals). The CAP should also include, but is not limited to, a detailed description of site lithology, including soil permeability, and most importantly, contamination cleanup levels for active remediation and final cleanup goals. These can be applicable and justified ESLs or calculated, site-specific risk-based cleanup goals and water quality objectives.

Response to Comment 4. Given the relatively high initial hydrocarbon concentrations, we are concerned that three months will probably not be a long enough time frame to make decisions regarding alternative feasibility, which is why we selected a 6-month time frame. Please note that decisions regarding scaling up the system are relatively simple based on determining the effective radius of influence exhibited by the pilot test. We have noted the need for a formal CAP and are familiar with your related requirements to be contained within a CAP. We can discuss this further before initiation of pilot testing, and can perhaps further evaluate the need for a longer test once we have performed three months of pilot testing as you've suggested.

With respect to separate phase petroleum hydrocarbons (SPHs), their presence was historically and sporadically recorded in wells MW2 and MW3; however, no SPHs have been detected in routine quarterly monitoring events in any wells, including none in well MW3 since March 2004 and none in well MW2 since June 2006. Moreover, no SPHs were encountered during the most recent soil and groundwater investigation within the immediate vicinity of MW2 and MW3 (i.e, within residual source area). Therefore, we do not believe the reference to addressing SPHs is warranted.

Based on your comment, we will adjust the screen interval for the oxygen injection well to range from 15 feet bgs to 40 feet bgs, covering the measured groundwater elevation of 15.66 feet bgs in March 2006 (MW2) and the depth at which previously detected hydrocarbon mass was encountered in grab groundwater samples (i.e, 40 feet bgs). Please let me know if you have any further concerns about this interval.

As shown in the technology information attached herein, the iSOC unit is one foot long. The diffuser will be set near the bottom of the well to take advantage of the highest possible pressures. The diffuser charges the entire saturated interval of the well casing with oxygen, effectively turning the full length of the well into an oxygen delivery unit. Unlike air or oxygen SPARGE units, the flow of oxygen from the diffuser is not pre-set; rather it is determined by the oxygen demand of the groundwater. Oxygen flows into the well at rates that maintain oxygen concentrations above saturation concentrations determined by the pressure and temperature of the groundwater at the point of the diffuser unit.

Oxygen moves into the groundwater by advection and concentration gradient-driven diffusion. The typical radius of influence for a given well is approximately 10 to 15 feet according to the manufacturer, but has been noted to be both larger and smaller based on hydrogeological factors and chemical/biological oxygen demand characteristics of the aquifer sediments and groundwater. The effectiveness of oxygen distribution will be measured by monitoring groundwater at adjacent well locations, as specified in the IRAP.

Comment 5. Soil Vapor Survey. A soil vapor survey was performed, the results of which were submitted in LRM's investigation report and indicate that vapor intrusion is not a concern based on these results. However, Standard Operating Procedures for collecting these samples were not provided in the investigation report and in particular, no analysis for leak detection appears to have been performed. Please provide your sampling methods or specify where they are located, in the report requested below.

Response to Comment 5. The sampling methods for the soil vapor survey were included as Appendix A in the workplan submitted to Alameda County in December 2006. That appendix, which also contained soil and groundwater sampling methods, was subject to review approximately a year later by Ms. Donna Drogos, who's comments in part led to two addenda to the workplan prior to approval. Please note that there were no comments on the soil vapor sampling methods within Appendix A of the workpan. The soil vapor survey was conducted in accordance to the methods outlined in the approved workplan.

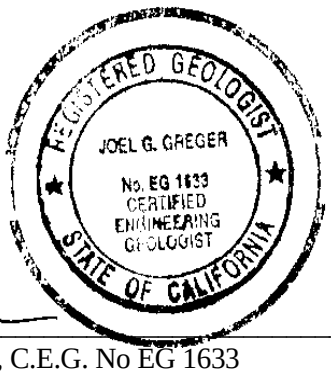
CLOSING

LRM greatly appreciates your review of and input on the IRAP. Should you have any further questions or concerns regarding the proposed plan, please contact Mehrdad Javaherian at mjavaherian@lrm-consulting.com or at 415-706-8935.

Sincerely,

LRM Consulting, Inc.

Mehrdad Javaherian, Ph.D/MPH(candidate)
Principal-in-Charge



Joel G. Greger, C.E.G. No EG 1633
Senior Geologist

iSOC® Technology

iSOC® Technology: A Brief Introduction

Bioremediation:

- Since the mid-1990's pure oxygen to enhance natural attenuation has been growing as a remediation technology.
- Today there are a variety of technologies that can provide low to moderate concentrations (10-20 ppm) of DO.
- As these elevated DO levels mix with contaminated ground water, natural biodegradation occurs (due to existing in situ micro-organisms).
- Unfortunately, technologies such as sparging, chemical oxidation and powdered peroxide compounds are not effective in low permeability sites.

inVentures Technologies Incorporated:

- iSOC® developed inVentures Technologies Incorporated.
- inVentures developed mass transfer technology, where they can transfer any gas into a liquid.
- Offices in Ontario and Fredericton, NB.
- Started by three Professional Engineers (Graduates of University Of Waterloo).

iSOC® History:

- Used at hundreds of sites in the US, Canada, Europe and Asia (Since 2001).
- iSOC® installations are occurring monthly.
- The European And Asian markets are beginning to use iSOC®.
- Many state regulators and national companies are actively using iSOC®.

What is iSOC®?

- It is a gas delivery technology that will infuse any gas into a liquid.
- iSOC®, stands for "in situ submerged oxygen curtain".
- It is a low cost technology for enhancing natural attenuation.

How does it work?

- iSOC® contains over 700 hydrophobic microporous hollow fibers that allow for the mass transfer of oxygen into the ground water.
- The technology supersaturates the ground water with low decay D.O. at concentrations ranging from 40 to 200 ppm depending on aquifer conditions and depth of injection.
- The oxygen transfer efficiency is nearly a 100%.
- The underlying scientific principle for the iSOC® is the equilibrium that exists between the dissolved concentration of a gas in a liquid and the partial pressure of the gas above the liquid. ***Henry's Law states***: the weight of any gas that will dissolve in a given volume of liquid is directly proportional to the pressure that the gas exerts above the liquid.

iSOC® Technology

iSOC® Has Many Advantages

Distinguishing Features:

- Will infuse any gas into a liquid.
- No moving parts and does not require electricity.
- Very low O & M.
- Easily moved to a new injection point or new site.
- Works in a 2-inch (51mm) monitoring well or larger.
- Powered by the pressure of the gas in the cylinder.
- Installation compound above ground or below ground.

Construction:

- The iSOC® unit measures 1.62 inches by 12.5 inches. (41 mm X 318 mm)
- Made of stainless steel.

Connecting Tube:

- 1/4” (6mm) inch polyurethane tube connects iSOC® and iSOC® Distribution Header.

Site Compatibility:

- Primary remediation strategy to attack the source.
- Polish off low level contaminated sites.
- Curtain to stop off-site plume migration.
- Can be used on petroleum or chlorinated solvents.
- Not bothered by high levels of iron, BOD_5 or COD.

Radius of Influence:

- Typically 10-15 feet (3-4.5m) – higher depending upon soil and groundwater flow
- Primarily depends on ground water velocity and the oxygen demands of the aquifer.
- Installs at any depth (deeper the water column the higher the DO level).
- Infuses 4 to 10 times more dissolved gas than any competitive technology.

What Determines DO levels?

- Atmospheric Pressure Determines DO Levels.
- iSOC® will deliver about 41 PPM of dissolved oxygen per atmosphere of head pressure.
- Example: A 33-foot (10 m) column of water would equal about 2 atmospheres. (1 atm = 14.7 psi = I Bar; plus the water head pressure (2.306 ÷ 33) = 14.31 total pressure (1 bar), or 29 psi, or about 2 atmospheres 0r 2 bar. 2 atm x 41 PPM = 82 PPM DO in 33 foot (10 m) column).

iSOC® Technology

iSOC®: An Innovative Technology

Versatile:

- Use to treat source, polish off sites or to stop off-site migration.
- Will infuse any gas (oxygen, propane, methane, hydrogen and ethane).
- Can be used for cometabolic treatment (with alkane gases).

Portable:

- No moving parts and no electricity.
- Easily moved to a new injection point or new site.
- Installs in existing two inch monitoring wells (or larger).

Affordable:

- Annual cost of oxygen for 3-iSOC®s is less than $250.00 a year.
- Lowest annual O & M of any competitive technology.
- True pay-for-performance technology for cleaning up sites.
- Installs in a few hours and is extremely easy to use.
- The iSOC® unit will last for several years.

Effective:

- Can deliver 40-200 ppm of dissolved oxygen into the ground water.
- Is 4-10 times more effective than any competitive technology.
- Oxygen transfer efficiency is nearly a 100%.

- **iSOC® is now operating on hundreds of sites North America, Europe and Asia.**
- **It is the best technology for enhancing natural attenuation.**
- **It has the lowest O & M of any bioremediation technology.**

APPENDIX B

BORING LOGS

BORING LOG

Permit No. W2008-0901	Boring diameter: 3.25"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-15-08
Boring No. SB-14	Drilling Method: geoprobe	Drilling Company: Vironex

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		0		@ 0' 4" of concrete over sand and gravel base. @ 1' - Medium brown clayey silt (ML), sl. moist, stiff.
		5	ML	@ 5' - Medium brown clayey silt (ML), as above, mottled with iron and manganese oxide staining, a few angular gravels to 1/2 inch diameter at 7'.
		10		@ 10' - Greenish brown clayey sandy silt (ML) with abundant angular gravels from 12.5-13', becoming moist at 14', stiff.
		15		@ 15' - Greenish clayey silt and silt (ML), moist, stiff, becoming sandy silt (ML) at 16'. Moderate odor of hydrocarbons at 17'.
			SM	@ 17' - Silty sand (SM), locally with angular gravels 17.7-18', sand v. fine-grained, moist, dense, odor continuing.
			ML	@ 18.8' - Sandy silt (ML), becoming silty sand (SM) at 19.7', moist - v. moist, stiff/dense. Moderate odor.
		20	SM	@ 20.3' - Greenish silt (ML), v. moist, stiff, saturated at 24', moderate odor of hydrocarbons.
SB14 d 23.3' SB14 water d 23.8'	▽		ML	
			SM	@ 24' - Silty sand (SM), sand v. fine-grained, then silt (ML) at 24.8', as above.
		25	ML	@ 25' - Sandy silt (ML), becoming silty v. fine-grained sand (SM) from 26 to 29.6', saturated, dense/stiff, dark green stained 26.7 - 28', moderate odor continuing.
			SM	
		30	ML	
			SM	@ 39' - Greenish brown silty v. fine-grained sand (SM), slight odor, saturated, dense, becoming sandy silt and silt (ML) at 33'. No odor below 33'.
			ML	

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

Figure No: SB-14

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0901	Boring diameter: 3.25"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-15-08
Boring No. SB-14	Drilling Method: geoprobe	Drilling Company: Vironex

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		35	ML	@ 35' - Greenish brown sandy silt (ML) to 39.2' - becoming silt (ML), saturated, stiff, homogenous. Sand v. fine-grained.
		40		@ 40' - Greenish brown silt (ML), as above except silty v. fine-grained sand (SM) 41.3-41.5', saturated, stiff, homogenous. No odor or apparent staining.
		45		@ 45' - Olive green clayey silt and silt (ML), saturated, stiff, homogenous. No odor or obvious staining.
SB14 d 50'		50 x		@ 50' - Olive green clayey silt and silt (ML), except sandy clayey silt 53-53.4', saturated, stiff. No odor or obvious staining.
SB14 d 54'		x		
		55		Refusal at 54.5'. No water collected after 30 minutes. Backfilled using casing as treemie with neat cement grout.
		60		
		65		

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

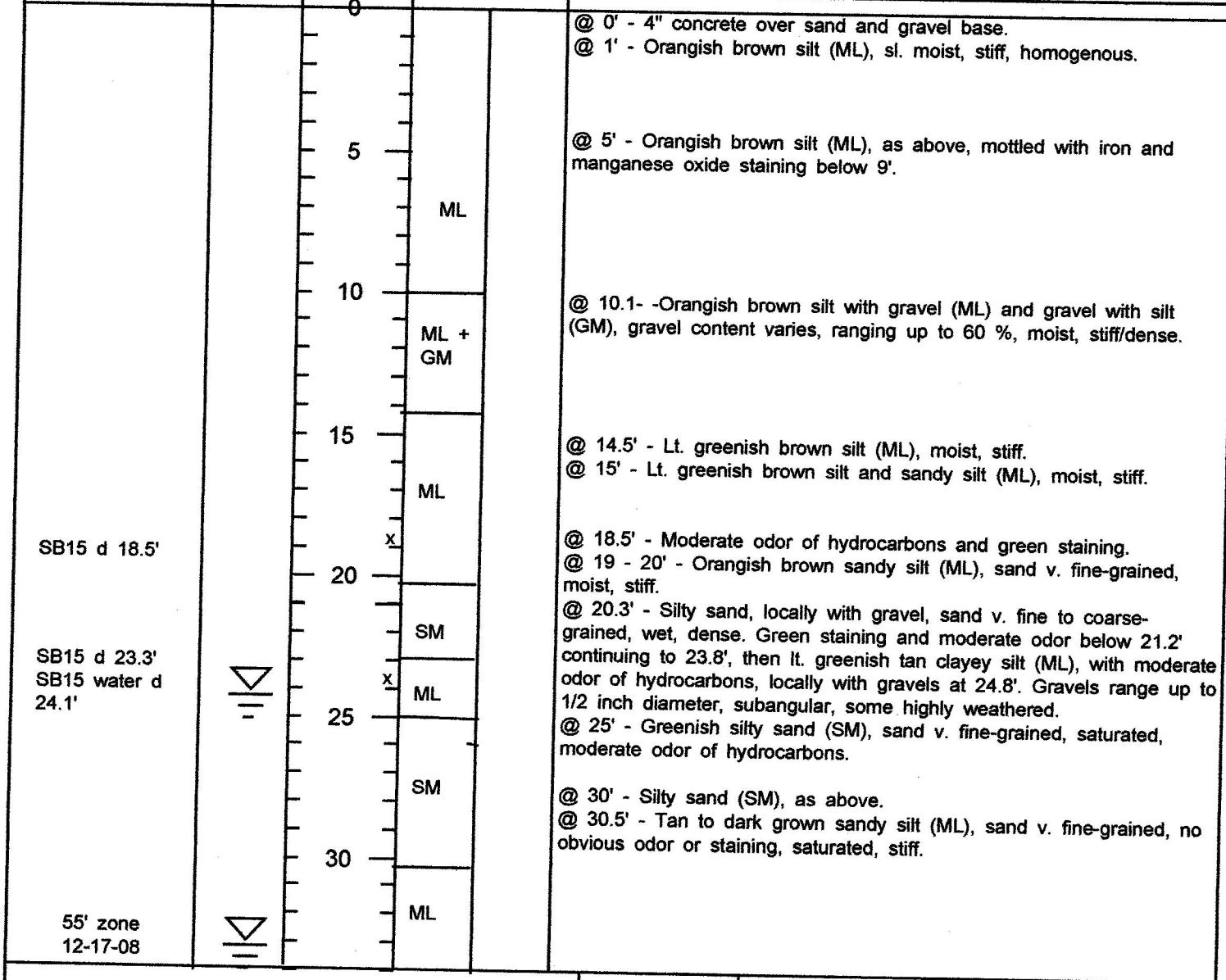
Figure No: SB-14

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0901	Boring diameter: 3.25"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-16-08
Boring No. SB-15	Drilling Method: geoprobe	Drilling Company: Vironex



Former Val Strough Chevrolet 327 - 34th Street Oakland, CA	Figure No: SB-15	Date: 12-19-08 Drawn By: JG

BORING LOG

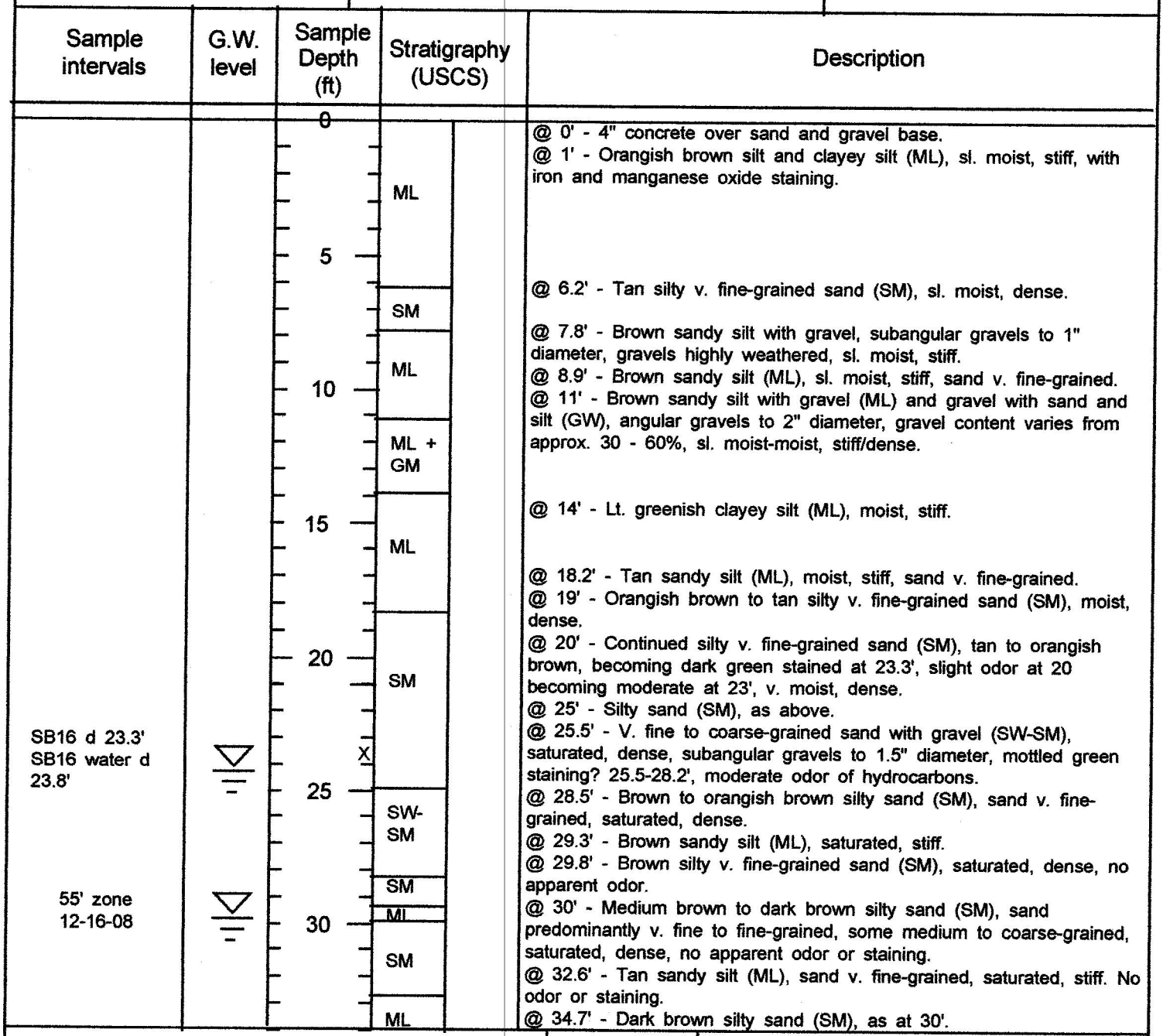
Permit No. W2008-0901	Boring diameter: 3.25"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-16-08
Boring No. SB-15	Drilling Method: geoprobe	Drilling Company: Vironex

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		35	ML	@ @ 34' - Greenish brown clayey silt (ML), saturated, stiff,. @ 35' - As above, homogenous.
		40		@ 40' - As above, homogenous. No observable odor or staining.
		45		@ 45' - Greenish brown clayey silt (ML), saturated, stoff, homogenous. No odor or staining.
SB15 d 50'		50 x		@ 50" - as above.
SB15 d 55' SB15 water d 55'		55 x		Refusal at 55'. Retracted outer casing to 50' and collected water through casing the next morning. Groundwater from this zone at approximately 33' at 7 AM 12-17-08. Backfilled using casing as tremmie with neat cement grout.
		60		
		65		

Former Val Strough Chevrolet 327 - 34th Street Oakland, CA	Figure No: SB-15	Date: 12-19-08 Drawn By: JG

BORING LOG

Permit No. W2008-0901	Boring diameter: 3.25"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-15-08
Boring No. SB-16	Drilling Method: geoprobe	Drilling Company: Vironex



Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

Figure No: SB-16

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0901	Boring diameter: 3.25"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-16-08
Boring No. SB-16	Drilling Method: geoprobe	Drilling Company: Vironex

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		35	SW	@ 35' - Brown silty fine to coarse=-grained sand (SW), saturated, dense, no odor or staining.
			SM	@ 36.6' - Medium brown silty sand (SM), sand v. fine-grained, saturated, dense, no odor or staining.
		40	ML	@ 37.4' - Tan to orangish brown silty sand with gravel (SM), subangular to subrounded gravels to 1" diameter, estimated at 20-25$ gravels, some highly weathered.
			SM	@ 39.9' - Sandy silt with gravel (ML), saturated.
				@ 40 - Tan clayey sandy silt (ML), sand v. fine-grained, occasional gravels, saturated, stiff.
		45		@ 41.7' - Dark brown silty sand (SM), sand v. fine to fine-grained, saturated, dense.
			ML	@ 42.3' - Silty with gravel (ML), gravels highly weathered, saturated, stiff.
				@ 43.8' - Tan silty and clayey silt with gravel (ML), saturated, stiff, estimated at up to 20% gravel.
				@ 45' - Silt and clayey silt (ML), homogenous.
SB16 d 50'		50 x		@ 50' - Lt. greenish brown clayey silt and silt (ML), saturated, stiff.
				@ 53' - Sandy silt and clayey sandy silt (ML), sand v. fine-grained, saturated, stiff.
				@ 54' - Clayey silt and silt (ML), as at 50'.
SB16 d 55'				
SB16 water d 55'		55 x		Refusal at 55'. Retracted outer casing to 50' and collected water through casing the next morning. Groundwater from this zone at approximately 29.9' at 7 AM 12-17-08. Backfilled using casing as tremmie with neat cement grout.
		60		
		65		

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

Figure No: SB-16

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0901	Boring diameter: 2"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-16-08
Boring No. SB-17	Drilling Method: geoprobe	Drilling Company: Vironex

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		0		@ 4" of asphalt over sand and gravel base. @ 1' - Backfill? consisting of brown clayey silt with gravel (ML), v. moist, stiff.
		5		@ 5 -10' - Dark grayish brown clayey silt (ML), highly weathered gravels from 6 to 7.5', v. moist, stiff.
		10	ML (fill?)	@ 10' - Dark grayish brown clayey silt (ML), becoming clayey sand with silt from 12.3 -14', moist, stiff. Still appears to be backfill.
		15		@ 14' - Dark grayish brown sandy silt (ML), sand v. fine-grained, moist, stiff.
SB17 d 18.5'				
SB17 water d 18.8'	▽	x		@ 17.2' - Dark grayish brown clayey silt and clayey sandy silt (ML), v. moist to wet, stiff.
		20		@ 20 - 22.2' - Dark grayish brown clayey sandy silt (ML), saturated, stiff.
			SM	@ 22.2 - 22.9' - Dark greenish gray silty v. fine-grained sand (SM), dense, saturated. Backfill?
			ML	@ 22.9 - 25' - Tan to greenish brown native silt (ML), saturated, stiff.
		25		Total Depth - 25' Backfilled with neat cement grout through casing.
		30		

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

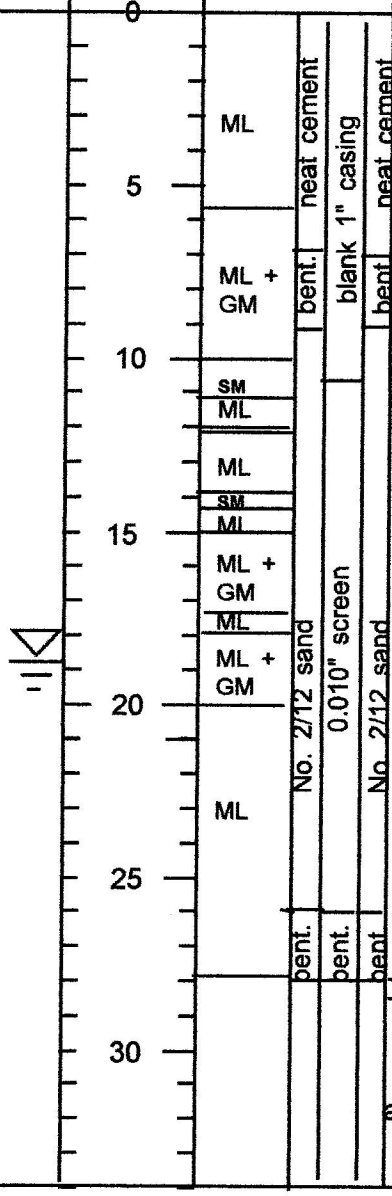
Figure No: SB-17

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0902	Boring diameter: 8" 0-5', 3.25" 5-28'	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-17-08
Boring No. MW-8	Drilling Method: hollow stem, geoprobe	Drilling Company: Vironex



Description

@ 0' - 5" concrete slab underlain by second 5' concrete slab, then sand and gravel base.
@ 2' - Dark brown silt (ML),I fill, slightly moist, stiff.

@ 4' - Orangish brown clayey silt (ML), v. moist, stiff.
@ 5 - 5.8' - Orangish brown sandy silt (ML), sand v. fine-grained, v. moist, stiff.
@ 5.8 - 9.2' - Orangish brown sandy silt with gravel (ML) and gravel with sandy silt (GM), moist, stiff/dense, gravels hightly weathered, to 3/4 inch diameter, subangular.
@ 9.2' - Lt. greenish brown silt (ML), moist, stiff.
@ 10 - 11' - Orangish brown silty sand (SM), sand v. fine-grained, moist, stiff.
@ 11 - 15' - Lt. greenish brown silt and clayey silt (ML), moist, stiff, except silty sand (SM) 12-12.3' and clayey silt with gravel (ML) 13.7-14.1'.

@ 15 - 17.5' - Orangish brown sandy silt with gravel (ML) and gravel with sandy silt (GM), v. moist to wet, stiff/dense.

@ 17.5 - 18' - Lt. greenish brown clayey silt (ML), saturated, stiff.

@ 18.5 - 20.7' - As at 15 - 17.5'.

@ 20.7 - 25' - Lt. greenish brown silt (ML), saturated, stiff.

@ 26.5 - 28' - Clayey sandy silt, otherwise as above.

Constructed well with 0.010" screen (one-inch casing) from 11-26, 2/12 sand from 9-26, bentonite from 7-9, and neat cement grout from 0-7'.Groundwater measured at about 18' below grade upon completion.

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

Figure No: **MW-8**

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0903	Boring diameter: 8"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-12-08
Boring No. MW 0-1	Drilling Method: hollow stem	Drilling Company: RSI

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		0		not sampled. see log for adjacent boring SB14.
		5	neat cement	
		10	bent.	
		15	blank 2" casing	
		20	No. 3 sand	
		25	0.020" screen	
		30	No. 3 sand	
			bent.	
			neat cement	

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

Figure No: 0-1

Date: 12-19-08

Drawn By: JG

BORING LOG

Permit No. W2008-0903	Boring diameter: 8"	Logged By: Joel Greger
Project: 327 - 34th St.	Elevation:	Date drilled: 12-12-08
Boring No. MW 0-1	Drilling Method: hollow stem	Drilling Company: RSI

Sample intervals	G.W. level	Sample Depth (ft)	Stratigraphy (USCS)	Description
		35		Not sampled. See log for adjacent boring SB14.
		40	No. 3 sand	
		45	0.020" screen	
		40	No. 3 sand	
		55		Total Depth - 40'. Constructed well with 2" casing and 0.020 screen from 15-40', #3 sand from 13 - 15', bentonite from 11 - 13', neat cement 0-11'.
		60		
		65		

Former Val Strough Chevrolet
327 - 34th Street
Oakland, CA

Figure No: 0-1

Date: 12-19-08

Drawn By: JG

APPENDIX C

LABORATORY ANALYTICAL REPORT

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Mehrdad Javaherian
LRM Consulting, Inc.
1534 Plaza Lane, #145
Burlingame, CA 94010

Subject : 12 Soil Samples and 6 Water Samples
Project Name : Former Val Shrough Chevrolet
Project Number :

Dear Mr. Javaherian,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Joel Kiff

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB14 d 50** Matrix : Soil Lab Number : 66570-01

Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	93.9		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	96.6		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**< 1.0**	1.0	mg/Kg	M EPA 8015	12/22/2008
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/22/2008
1-Chlorooctadecane (Silica Gel Surr)	88.5		% Recovery	M EPA 8015	12/22/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB14 d 54** Matrix : Soil Lab Number : 66570-02

Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	94.8		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	96.0		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**< 1.0**	1.0	mg/Kg	M EPA 8015	12/22/2008
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/22/2008
1-Chlorooctadecane (Silica Gel Surr)	86.8		% Recovery	M EPA 8015	12/22/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB14 d 23.3** Matrix : Soil Lab Number : 66570-03

Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**2.8**	0.050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**29**	0.050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**11**	0.050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**98**	0.25	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**0.12**	0.050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**880**	25	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	96.4		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	94.1		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**160**	1.0	mg/Kg	M EPA 8015	12/22/2008
(Note: Hydrocarbons are lower-boiling than typical Diesel Fuel.)					
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/22/2008
1-Chlorooctadecane (Silica Gel Surr)	93.0		% Recovery	M EPA 8015	12/22/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB16 d 23.3** Matrix : Soil Lab Number : 66570-04
Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.016**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**0.013**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**0.0065**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**1.3**	1.0	mg/Kg	M EPA 8015	12/22/2008
(Note: Hydrocarbons are lower-boiling than typical Diesel Fuel.)					
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/22/2008
1-Chlorooctadecane (Silica Gel Surr)	94.5		% Recovery	M EPA 8015	12/22/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB16 d 50** Matrix : Soil Lab Number : 66570-05

Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	92.8		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	96.8		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**< 1.0**	1.0	mg/Kg	M EPA 8015	12/23/2008
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/23/2008
1-Chlorooctadecane (Silica Gel Surr)	98.2		% Recovery	M EPA 8015	12/23/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB16 d 55** Matrix : Soil Lab Number : 66570-06
Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/18/2008
1,2-Dichloroethane-d4 (Surr)	93.5		% Recovery	EPA 8260B	12/18/2008
Toluene - d8 (Surr)	96.3		% Recovery	EPA 8260B	12/18/2008
TPH as Diesel (Silica Gel)	**3.0**	1.0	mg/Kg	M EPA 8015	12/22/2008
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/22/2008
1-Chlorooctadecane (Silica Gel Surr)	93.3		% Recovery	M EPA 8015	12/22/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB17 d 18.5'** Matrix : Soil Lab Number : 66570-07

Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**0.014**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/19/2008
(Note: Primarily compounds not found in typical Gasoline)					
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**41**	5.0	mg/Kg	M EPA 8015	12/23/2008
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Motor Oil (Silica Gel)	**120**	40	mg/Kg	M EPA 8015	12/23/2008
1-Chlorooctadecane (Silica Gel Surr)	104		% Recovery	M EPA 8015	12/23/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB15 d 18.5** Matrix : Soil Lab Number : 66570-08

Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/18/2008
1,2-Dichloroethane-d4 (Surr)	97.9		% Recovery	EPA 8260B	12/18/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/18/2008
TPH as Diesel (Silica Gel)	**2.2**	1.0	mg/Kg	M EPA 8015	12/23/2008
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/23/2008
1-Chlorooctadecane (Silica Gel Surr)	103		% Recovery	M EPA 8015	12/23/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB15 d 23.3** Matrix : Soil Lab Number : 66570-09
Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.1**	0.15	mg/Kg	EPA 8260B	12/19/2008
Toluene	**14**	0.15	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**9.5**	0.15	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**66**	0.15	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**0.19**	0.15	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**670**	15	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	96.5		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	97.5		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**220**	1.0	mg/Kg	M EPA 8015	12/23/2008
(Note: Hydrocarbons are lower-boiling than typical Diesel Fuel.)					
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/23/2008
1-Chlorooctadecane (Silica Gel Surr)	97.0		% Recovery	M EPA 8015	12/23/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB15 d 55'** Matrix : Soil Lab Number : 66570-10

Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/18/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/18/2008
1,2-Dichloroethane-d4 (Surr)	90.4		% Recovery	EPA 8260B	12/18/2008
Toluene - d8 (Surr)	95.7		% Recovery	EPA 8260B	12/18/2008
TPH as Diesel (Silica Gel)	**< 1.0**	1.0	mg/Kg	M EPA 8015	12/24/2008
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/24/2008
1-Chlorooctadecane (Silica Gel Surr)	88.8		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB15 d 50** Matrix : Soil Lab Number : 66570-11

Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**< 1.0**	1.0	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	99.0		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**< 1.0**	1.0	mg/Kg	M EPA 8015	12/24/2008
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/24/2008
1-Chlorooctadecane (Silica Gel Surr)	103		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB14 water d 23.8** Matrix : Water Lab Number : 66570-12

Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**22**	0.90	ug/L	EPA 8260B	12/19/2008
Toluene	**300**	0.90	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	**96**	0.90	ug/L	EPA 8260B	12/19/2008
Total Xylenes	**640**	0.90	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**2.1**	0.90	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	**4300**	90	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	97.0		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	98.0		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (w/ Silica Gel)	**< 400**	400	ug/L	M EPA 8015	12/24/2008
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
TPH as Motor Oil (w/ Silica Gel)	**< 100**	100	ug/L	M EPA 8015	12/24/2008
Octacosane (Silica Gel Surr)	90.2		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Sample : **SB16 water d 23.8** Matrix : Water Lab Number : 66570-13

Sample Date :12/15/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	**3.4**	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	**3.8**	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	**23**	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**3.8**	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	**170**	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	97.6		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (w/ Silica Gel)	**< 50**	50	ug/L	M EPA 8015	12/25/2008
TPH as Motor Oil (w/ Silica Gel)	**< 100**	100	ug/L	M EPA 8015	12/25/2008
Octacosane (Silica Gel Surr)	96.9		% Recovery	M EPA 8015	12/25/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB16 water d 55** Matrix : Water Lab Number : 66570-14
Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	**5.6**	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	**3.7**	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	**21**	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**0.72**	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	**140**	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	99.3		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (w/ Silica Gel)	**< 50**	50	ug/L	M EPA 8015	12/24/2008
TPH as Motor Oil (w/ Silica Gel)	**< 100**	100	ug/L	M EPA 8015	12/24/2008
Octacosane (Silica Gel Surr)	93.3		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB17 water d 18.8'** Matrix : Water Lab Number : 66570-15
Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	**< 50**	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	102		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (w/ Silica Gel)	**170**	50	ug/L	M EPA 8015	12/24/2008
(Note: Hydrocarbons are higher-boiling than typical Diesel Fuel.)					
TPH as Motor Oil (w/ Silica Gel)	**760**	100	ug/L	M EPA 8015	12/24/2008
Octacosane (Silica Gel Surr)	88.4		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB15 water d 24.1'** Matrix : Water Lab Number : 66570-16
Sample Date :12/16/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**0.71**	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	**6.7**	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	**5.7**	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	**28**	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	**830**	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	97.4		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	95.4		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (w/ Silica Gel)	**< 100**	100	ug/L	M EPA 8015	12/24/2008
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
TPH as Motor Oil (w/ Silica Gel)	**< 100**	100	ug/L	M EPA 8015	12/24/2008
Octacosane (Silica Gel Surr)	88.8		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **SB15 water d 55'** Matrix : Water Lab Number : 66570-17
Sample Date :12/17/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	**1.1**	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	**5.2**	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	**1.7**	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	**13**	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.50**	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	**100**	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	96.5		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	100		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (w/ Silica Gel)	**< 200**	200	ug/L	M EPA 8015	12/24/2008
(Note: MRL increased due to interference from Gasoline-range hydrocarbons.)					
TPH as Motor Oil (w/ Silica Gel)	**300**	100	ug/L	M EPA 8015	12/24/2008
(Note: Discrete peaks in motor oil range, atypical for Motor Oil.)					
Octacosane (Silica Gel Surr)	104		% Recovery	M EPA 8015	12/24/2008

KIFF Analytical LLC

Report Number : 66570
Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**
Project Number :

Sample : **Drum Sample 1A/1B** Matrix : Soil Lab Number : 66570-18
Sample Date :12/17/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Lead	**4.9**	0.50	mg/Kg	EPA 6010B	12/19/2008
Benzene	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Toluene	**0.011**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Ethylbenzene	**0.014**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Total Xylenes	**0.24**	0.0050	mg/Kg	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	**< 0.0050**	0.0050	mg/Kg	EPA 8260B	12/19/2008
TPH as Gasoline	**4.9**	1.0	mg/Kg	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	99.4		% Recovery	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	12/19/2008
TPH as Diesel (Silica Gel)	**8.3**	1.0	mg/Kg	M EPA 8015	12/23/2008
(Note: Some hydrocarbons lower-boiling, some higher-boiling than Diesel.)					
TPH as Motor Oil (Silica Gel)	**< 10**	10	mg/Kg	M EPA 8015	12/23/2008
1-Chlorooctadecane (Silica Gel Surr)	109		% Recovery	M EPA 8015	12/23/2008

Report Number : 66570

Date : 12/29/2008

QC Report : Method Blank Data

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Lead	< 0.50	0.50	mg/Kg	EPA 6010B	12/19/2008
TPH as Diesel (w/ Silica Gel)	< 50	50	ug/L	M EPA 8015	12/19/2008
TPH as Motor Oil (w/ Silica Gel)	< 100	100	ug/L	M EPA 8015	12/19/2008
Octacosane (Silica Gel Surr)	120		%	M EPA 8015	12/19/2008
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	12/22/2008
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	12/22/2008
1-Chlorooctadecane (Silica Gel Surr)	93.3		%	M EPA 8015	12/22/2008
TPH as Diesel (Silica Gel)	< 1.0	1.0	mg/Kg	M EPA 8015	12/24/2008
TPH as Motor Oil (Silica Gel)	< 10	10	mg/Kg	M EPA 8015	12/24/2008
1-Chlorooctadecane (Silica Gel Surr)	80.3		%	M EPA 8015	12/24/2008
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	12/18/2008
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	12/18/2008
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	12/18/2008
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	12/18/2008
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	12/18/2008
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	12/18/2008
1,2-Dichloroethane-d4 (Surr)	103		%	EPA 8260B	12/18/2008
Toluene - d8 (Surr)	96.2		%	EPA 8260B	12/18/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	104		%	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	100		%	EPA 8260B	12/19/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	96.3		%	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	100		%	EPA 8260B	12/19/2008
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	97.8		%	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	106		%	EPA 8260B	12/19/2008

Report Number : 66570

QC Report : Method Blank Data

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Toluene	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	12/19/2008
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	12/19/2008
1,2-Dichloroethane-d4 (Surr)	100		%	EPA 8260B	12/19/2008
Toluene - d8 (Surr)	96.8		%	EPA 8260B	12/19/2008

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed

Report Number : 66570

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Lead	66490-05	10	50.0	50.0	48.7	49.1	mg/Kg	EPA 6010B	12/19/08	76.5	77.4	0.941	75-125	20
TPH-D (Si Gel)	BLANK	<50	1000	1000	963	1010	ug/L	M EPA 8015	12/19/08	96.3	101	4.55	70-130	25
TPH-D (Si Gel)	66570-06	3.0	20.0	20.0	20.9	22.0	mg/Kg	M EPA 8015	12/22/08	90.7	95.4	5.05	60-140	25
TPH-D (Si Gel)	66570-10	<1.0	20.0	20.0	18.7	18.9	mg/Kg	M EPA 8015	12/24/08	93.4	94.6	1.34	60-140	25
Benzene	66537-04	<0.0050	0.0388	0.0390	0.0358	0.0357	mg/Kg	EPA 8260B	12/18/08	92.3	91.7	0.616	70-130	25
Methyl-t-butyl ether	66537-04	<0.0050	0.0390	0.0392	0.0344	0.0341	mg/Kg	EPA 8260B	12/18/08	88.2	87.0	1.33	70-130	25
Toluene	66537-04	<0.0050	0.0396	0.0397	0.0362	0.0364	mg/Kg	EPA 8260B	12/18/08	91.4	91.7	0.309	70-130	25
Benzene	66526-02	58	39.3	39.3	90.6	90.8	ug/L	EPA 8260B	12/19/08	81.8	82.2	0.467	70-130	25
Methyl-t-butyl ether	66526-02	<0.50	39.6	39.6	38.3	39.4	ug/L	EPA 8260B	12/19/08	96.9	99.5	2.64	70-130	25
Toluene	66526-02	10	40.1	40.1	48.9	48.7	ug/L	EPA 8260B	12/19/08	96.7	96.2	0.421	70-130	25
Benzene	66540-08	<0.50	39.3	39.3	36.2	36.1	ug/L	EPA 8260B	12/19/08	92.0	91.7	0.313	70-130	25
Methyl-t-butyl ether	66540-08	8.6	39.6	39.6	49.6	49.8	ug/L	EPA 8260B	12/19/08	103	104	0.556	70-130	25
Toluene	66540-08	2.2	40.1	40.1	40.5	39.6	ug/L	EPA 8260B	12/19/08	95.5	93.1	2.51	70-130	25
Benzene	66528-17	<0.50	39.3	39.3	38.4	39.0	ug/L	EPA 8260B	12/19/08	97.7	99.0	1.38	70-130	25
Methyl-t-butyl ether	66528-17	<0.50	39.6	39.6	42.3	43.5	ug/L	EPA 8260B	12/19/08	107	110	2.68	70-130	25

Report Number : 66570

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene	66528-17	<0.50	40.1	40.1	45.0	44.3	ug/L	EPA 8260B	12/19/08	112	110	1.63	70-130	25
Benzene	66539-12	<0.50	39.3	39.3	38.3	37.3	ug/L	EPA 8260B	12/19/08	97.4	94.8	2.72	70-130	25
Methyl-t-butyl ether	66539-12	0.67	39.6	39.6	35.2	38.6	ug/L	EPA 8260B	12/19/08	87.2	95.8	9.38	70-130	25
Toluene	66539-12	<0.50	40.1	40.1	40.4	39.4	ug/L	EPA 8260B	12/19/08	101	98.2	2.53	70-130	25

Report Number : 66570

QC Report : Laboratory Control Sample (LCS)

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Lead	50.0	mg/Kg	EPA 6010B	12/19/08	103	85-115
TPH-D (Si Gel)	20.0	mg/Kg	M EPA 8015	12/22/08	90.3	70-130
TPH-D (Si Gel)	20.0	mg/Kg	M EPA 8015	12/24/08	86.8	70-130
Benzene	0.0390	mg/Kg	EPA 8260B	12/18/08	92.8	70-130
Methyl-t-butyl ether	0.0393	mg/Kg	EPA 8260B	12/18/08	92.5	70-130
Toluene	0.0398	mg/Kg	EPA 8260B	12/18/08	92.6	70-130
Benzene	39.3	ug/L	EPA 8260B	12/19/08	99.8	70-130
Methyl-t-butyl ether	39.6	ug/L	EPA 8260B	12/19/08	111	70-130
Toluene	40.1	ug/L	EPA 8260B	12/19/08	101	70-130
Benzene	40.1	ug/L	EPA 8260B	12/19/08	90.1	70-130
Methyl-t-butyl ether	39.7	ug/L	EPA 8260B	12/19/08	93.3	70-130
Toluene	40.1	ug/L	EPA 8260B	12/19/08	93.7	70-130
Benzene	39.3	ug/L	EPA 8260B	12/19/08	94.6	70-130
Methyl-t-butyl ether	39.6	ug/L	EPA 8260B	12/19/08	105	70-130
Toluene	40.1	ug/L	EPA 8260B	12/19/08	110	70-130

Report Number : 66570

QC Report : Laboratory Control Sample (LCS)

Date : 12/29/2008

Project Name : **Former Val Shrough Chevrolet**

Project Number :

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	39.9	ug/L	EPA 8260B	12/19/08	98.0	70-130
Methyl-t-butyl ether	39.5	ug/L	EPA 8260B	12/19/08	88.7	70-130
Toluene	39.9	ug/L	EPA 8260B	12/19/08	99.6	70-130

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No: 66570

Page 1 of 3

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mehrdad Javaheran	California EDF Report? ☒ Yes ☐ No
Company / Address: LRM Consulting	Sampling Company Log Code:
Phone Number: 415 706 8935	Global ID:
Fax Number: 650 6895517	EDF Deliverable To (Email Address): mjavaherian@lrm-consulting.com
Project #:	P.O. #:
Bill to: LRM	
Project Name: Former Val Strough Chevrolet	Sampler Print Name: Joel Greger
	Sampler Signature: Joel G
Project Address: 327 34th St. Oakland CA	

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	Liner	Preservative: HCl	HNO_3	None	Matrix: Water	Soil	Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M) with silicagel	TPH as Motor Oil (EPA 8015M) with silicagel	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)					TAT 12 hr	TAT 24 hr	TAT 48hr	TAT 72hr	TAT 1 wk	For Lab Use Only
SB14 @ 5'	12-15-08	1103Am						X					X		X	X	X							X	X												01
SB14 @ 5'	↓	1125Am						X					X		X	X	X							X	X												02
SB14 @ 23.5	↓	837Am						X					X		X	X	X							X	X												03
SB16 @ 23.5		212Pm						X					X		X	X	X							X	X												04
SB16 @ 5'	↓	325Pm						X					X		X	X	X							X	X												05
SB16 @ 5'	↓	344Pm						X					X		X	X	X							X	X												06
SB17 @ 18.5'	12-16-08	1015Am						X					X		X	X	X							X	X												07
SB15 @ 18.5	12-16-08	1145Pm						X					X		X	X	X							X	X												08
SB15 @ 23.5	12-16-08	1145Pm						X					X		X	X	X							X	X												09
SB15 @ [illegible]5'	↓	315Pm						X					X		X	X	X							X	X												10

Relinquished by:	Date	Time	Received by:
Joel G	12-18-08	1538PM	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	121808	1609	Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm ID #	Coolant Present
1.6	JC	121808	1800	IR1	Yes / No

Distribution: White - Lab Pink - Originator
Rev: 061708

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 66570

Page 2 of 3

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mehrdad Javaherian
Company / Address: LRM Consulting
Phone Number: 415 7068935
Fax Number: 650 6895517
Project #: P.O. #:
Project Name: Former Val Stragh Chevrolet
Project Address: 327 34th St Oakland CA

California EDF Report? ☒ Yes ☐ No
Sampling Company Log Code:
Global ID:
EDF Deliverable To (Email Address): mjavaherian@lrm-consulting.com
Bill to: LRM
Sampler Print Name: Joel Gregor
Sampler Signature: Joel Gregor

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

PLEASE CIRCLE METHOD

Sample Designation	Date	Time	Sampling	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Container: 1 Liter	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air	MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water) with surrogate	TPH as Diesel (EPA 8015M) with silica gel	TPH as Motor Oil (EPA 8015M) with silica gel	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010)	W.E.T. Lead (STLC)	For Lab Use Only
SB14 water @ 23.8'	12-15-08	952AM		3					1	X		X	X			X	X	X							X	X						12
SB16 water @ 23.8'	↓	224PM		7						X		X	X			X	X	X							X	X						13
SB16 water @ 55'	12-16-08	731AM		3					1	X		X	X			X	X	X							X	X						14
SB17 water @ 18.8'	↓	1105AM		3					1	X		X	X			X	X	X							X	X						15
SB15 water @ 24.1'	↓	152PM		3					1	X		X	X			X	X	X							X	X						16
SB15 water @ 55'	12-17-08	841AM		8						X		X	X			X	X	X							X	X						17
* SB15 @ 50	12-16-08	247PM			X									X		X	X	X							X	X						11

Remarks:

Relinquished by:	Date	Time	Received by:
Joel Gregor	12-18-08	353PM	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	121808	1609	K. AF Analytical

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev. 061708

* Please put this sample with other soil data on final report

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 66570

Page 3 of 3

Chain-of-Custody Record and Analysis Request

Project Contact (Hardcopy or PDF To): Mehrdad Javaheriaan

Company / Address: LRM Consulting

Phone Number: 415 706 8935

Fax Number: 650 6895517

Project #: P.O. #:

Project Name: Former Val Strough Chevrolet

Project Address: 327 34th St. Oakland CA

California EDF Report? ☒ Yes ☐ No

Sampling Company Log Code:

Global ID:

EDF Deliverable To (Email Address): mjavaheriaan@lrm-consulting.com

Bill to:

Sampler Print Name: Joel Gregor

Sampler Signature:

Sample Designation	Sampling: Date	Sampling: Time	Container: 40 ml VOA	Container: Sleeve	Container: Poly	Container: Glass	Container: Tedlar	Preservative: HCl	Preservative: HNO_3	Preservative: None	Matrix: Water	Matrix: Soil	Matrix: Air
Drum Sample 1A/1B	12-17-08	10:45 AM		2								X	

Analysis Request

PLEASE CIRCLE METHOD

MTBE @ 0.5 ppb (EPA 8260B)	BTEX (EPA 8260B)	TPH Gas (EPA 8260B)	5 Oxygenates (MTBE, DIPE, ETBE, TAME, TBA) (EPA 8260B)	7 Oxygenates (5 oxy + EtOH, MeOH) (EPA 8260B)	Lead Scav. (1,2 DCA & 1,2 EDB) (EPA 8260B)	Volatile Halocarbons (EPA 8260B)	Volatile Organics Full List (EPA 8260B)	Volatile Organics (EPA 524.2 Drinking Water)	TPH as Diesel (EPA 8015M) with silica gel	TPH as Motor Oil (EPA 8015M) with silica gel	CAM 17 Metals (EPA 200.7 / 6010)	5 Waste Oil Metals (Cd,Cr,Ni,Pb,Zn) (EPA 200.7 / 6010)	Mercury (EPA 245.1 / 7470 / 7471)	Total Lead (EPA 200.7 / 6010) for disposal purposes	W.E.T. Lead (STLC)
X	X	X							X	X				X	

TAT: ☐ 12 hr ☐ 24 hr ☐ 48hr ☐ 72hr ☒ 1 wk

For Lab Use Only: 2

Relinquished by:	Date	Time	Received by:
	12-18-08	3:53 PM	
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by Laboratory:
	121808	1609	KIFF Analytical

Remarks:

For Lab Use Only: Sample Receipt

Temp °C	Initials	Date	Time	Therm. ID #	Coolant Present
					Yes / No

Distribution: White - Lab; Pink - Originator
Rev: 061708

APPENDIX D

MONITORING WELL RESURVEY RESULTS

Benchmark Elevation = 60.40 feet (NGVD 29).

Latitude	Longitude	Northing	Easting	Elev.	Desc.
				65.06	RIM MW-1
37.8218057	-122.2611703	2126486.36	6053001.49	64.71	TOC MW-1
				66.32	RIM MW-2
37.8218326	-122.2613609	2126497.19	6052946.62	65.71	TOC MW-2
				66.24	RIM MW-3
37.8217656	-122.2613226	2126472.58	6052957.22	65.70	TOC MW-3
				65.03	RIM MW-4
37.8216762	-122.2611748	2126439.24	6052999.29	64.37	TOC MW-4
				66.20	RIM MW-5
37.8215005	-122.2614896	2126376.98	6052907.19	65.59	TOC MW-5
				59.86	RIM MW-6
37.8214002	-122.2608921	2126337.21	6053079.04	59.60	TOC MW-6
				59.77	RIM MW-7
37.8215373	-122.2607144	2126386.16	6053131.30	59.49	TOC MW-7
				57.63	RIM MW-8
37.8212027	-122.2609119	2126265.44	6053071.97	57.07	TOC MW-8