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ENVIRONMENTAL
PROTECTION

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HK2, Inc./SEMCO

70 CHEMICAL WAY • REDWOOD CITY, CALIFORNIA 94063 • (650) 261-1968 • (650) 261-0735 FAX
GENERAL ENGINEERING & ENVIRONMENTAL CONTRACTORS • LICENSE NO. 719103 (A, B, C57, C61/D40, HAZ, ASB)

*per Phil Buggs, site at 3530 MacArthur has been
@ 2-5-95.*

July 21, 1998

Mr. Thomas Peacock
Hazardous Materials Supervisor
Alameda County Health Care Services Agency (ACHCSA)
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Subject: Revised Work Plan for Preliminary Site Assessment at Scooter's Auto Repair,
3600 MacArthur Boulevard, Oakland, California (HK2 Project 97-0187)

Dear Mr. Peacock:

This work plan revises and supersedes our May 21, 1997, work plan submitted for site assessment activities at Scooter's Auto Repair located at 3600 MacArthur Boulevard in Oakland, California. The site location is shown in Figure 1. Figure 2 is a site plan. In our opinion, this revised work plan more efficiently evaluates the lateral and vertical extent of hydrocarbon-affected soil and groundwater encountered during tank removal activities. These preliminary assessment activities were requested by the ACHCSA in a letter dated June 3, 1994 (copy attached).

BACKGROUND

In March 1994 SEMCO removed two 8,000-gallon underground gasoline storage tanks, one 6,000-gallon underground diesel storage tank, and one 100 gallon underground waste oil tank from the site (Figure 2). Soil samples collected along the perimeter of the former fuel tank cavity at approximately 7 feet below grade (fbg; Samples A through D of Figure 2) contained up to 5,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline (TPH-G; Sample B), 330 mg/kg TPH as diesel (TPH-D; Sample B), and 1.19 mg/kg benzene (Sample B). A soil sample collected from the perimeter of the waste oil tank cavity at approximately 5 fbg (the depth groundwater was observed at) contained 1.4 mg/kg TPH-G, <10 mg/kg TPH-D, and <0.005 mg/kg benzene. Groundwater samples collected from the fuel tank cavity contained 2 mg/l TPH-G, 75 mg/l TPH-D, and 0.016 mg/l benzene. Groundwater samples collected from the waste oil tank cavity contained 0.6 mg/l TPH-G, 69 mg/l TPH-D, and 0.0006 mg/l benzene. The halogenated volatile organic compound (HVOC) and semi-volatile organic compound (SVOC) concentrations in soil and groundwater samples collected from the waste oil tank cavity were below laboratory reporting limits. The laboratory results of soil and groundwater sample analysis are summarized in Tables 1 through 4. Additional details are in the June 1994 Tank Removal Report prepared by SEMCO.

Based on the concentrations of petroleum hydrocarbons encountered during tank removal activities, the ACHCSA requested a Preliminary Site Assessment to assess the lateral and vertical extent of hydrocarbon-affected soil and groundwater (June 3, 1994 letter). In addition, the ACHCSA requested the removal of any product piping remaining in the ground and the excavation and disposal of the soil placed back into the waste oil tank cavity (former waste oil tank cavity backfill).

On May 21, 1997, HK2 submitted the requested work plan to the ACHCSA, which approved the plan on May 29, 1997. On June 12, 1998, Ms. Wannetta Hall contracted HK2 to implement the approved plan. During site markout activities, HK2 observed that Figure 2 of the approved plan incorrectly showed the location of the waste oil tank cavity and site property lines. Field correction of Figure 2 and subsequent review of the approved plan indicates that the following scope of work would more efficiently evaluate the extent of the hydrocarbons.

PLANNED WORK

Preliminary Site Assessment

HK2 plans to drill five borings and convert three or four of the borings to groundwater monitoring wells to evaluate the lateral and vertical extent of hydrocarbons encountered during tank removal activities. The proposed location of the borings is shown in Figure 2. Borings B1 through B4 will be drilled up to approximately 45 fbg using a hollow-stem auger drilling rig. B5 will be drilled to approximately 6 fbg using a hand auger. The depth to groundwater is estimated at 33 fbg based on groundwater monitoring data collected approximately 600 feet west-southwest of the site (Exxon station at 3450 35th Avenue). *Site at 3580 MacArthur Blvd NW at 2.5 fbg to SW/SE*

Soil samples will be collected from B1 through B4 with a split-spoon sampler at approximately 5 and 7 fbg, every five feet thereafter, and at the capillary fringe and observed changes in lithology. A metal tube-lined slide-hammer will collect soil samples from B5 at approximately 3 and 6 fbg. The samples will be screened with an organic vapor meter (OVM), described using the Unified Soil Classification System, placed in an ice chest chilled to approximately 4°C, and submitted to a state-certified laboratory. Up to three soil samples from each deeper boring and two from B5 will be analyzed for TPH-G (EPA Method 5030/Modified EPA Method 8015), TPH-D and TPH as motor oil (TPH-MO; EPA Method 3550/Modified EPA Method 8015), benzene, toluene, ethylbenzene, and total xylenes (BTEX; EPA Method 8020), and methyl tert-butyl ether (MTBE; EPA Method 8020). In addition, the soil sample containing the highest TPH-D/MO concentration will be analyzed for polycyclic aromatic hydrocarbons (PAHs; EPA Method 8270) if the TPH-D/MO concentration exceeds 1,000 mg/kg, and one sample representative of the lithology of the vadose zone and upper saturated zone (a total of two samples) will be analyzed for bulk density, porosity, moisture content, fraction organic carbon, and grain size distribution. *↓ this should be from a clean boring*

We do not plan to analyze the soil samples for TOG because: 1) TOG does not identify the compounds present (analysis is non-specific), 2) fatty acids or pieces of asphalt in sampled soil could

can do silica gel cleanup.

be measured as TOG by these methods, and 3) TPH-MO would more appropriately quantify hydrocarbons from the former waste oil tank. We are concerned a TOG result exceeding the laboratory reporting limit may lead to a regulatory request for further action when in fact the compound causing the result (if known) may not be of regulatory concern (e.g. asphalt). In addition, we do not plan to analyze any soil samples from B2 for HVOCs, SVOCs, or metals because previous analysis indicates these are not substances of concern in the soil beneath this site (refer to Tables 1 and 2).

Borings B1 through B3 will be converted to 2-inch-diameter PVC monitoring wells and B4 will be converted to a 4-inch-diameter groundwater monitoring well if OVM screening indicates hydrocarbons are present within 10 feet of the water table. Well design will be based on field conditions, but will be in accordance with Alameda County Public Works Agency (ACPWA) guidelines. We estimate the slotted casing interval will be 25 to 45 fbg based on a depth to groundwater of approximately 33 fbg. Based on this groundwater depth the annular space will be constructed as follows: filter pack (No. 3 to 2/16 sand) from approximately 23 to 45 fbg, bentonite chips from 20 to 23 fbg, Portland cement from 2 to 20 fbg, and concrete from 0 to 2 fbg. The wells will be developed with a surge block prior to placing the bentonite/Portland cement seal and up to 3 borehole volumes of water will be removed from each well after it is surged.

Survey wells

After the wells are installed, the water level will be allowed to equilibrate for at least 48 hours before it is measured. Depth to groundwater and free product thickness (if present) will be measured with an electronic probe or a tape containing indicator pastes. A downhole pump will then be used to purge up to 3 borehole volumes of water from each well not containing free product. The pH, temperature, and conductivity of the purged water will be periodically measured and purging will be terminated when these variables stabilize (i.e. successive measurements vary less than 10%). Groundwater samples will then be collected from each product-free well with a disposable bailer. The samples will be labeled, placed in a cooler chilled to approximately 4°C, and submitted to a state-certified laboratory for analysis of TPH-G, TPH-D, TPH-MO, BTEX, MTBE, and dissolved lead (EPA Method 7420). In addition, the groundwater sample containing the greatest TPH-D/MO concentration will be analyzed for PAHs if the TPH-D/MO concentration exceeds 1 mg/l, one groundwater sample will be analyzed total dissolved solids (TDS; EPA Method 160.1), and the groundwater sample collected from MW-2 will be analyzed for HVOCs (EPA Method 8010) and dissolved cadmium, chromium, nickel, and zinc (EPA 7000 Series Methods).

Following the initial groundwater sampling event, HK2 will monitor and sample the wells quarterly for up to three additional quarters, as required by the ACHCSA. The groundwater samples will be collected in the same manner described above with the following exceptions: 1) the well will not be purged before it is sampled, 2) the samples will not be analyzed for TDS, and 3) the samples will not be analyzed for HVOCs, PAHs, and metals if the concentration of these compounds measured in the first sampling event are below the municipal supply water quality objectives listed in the Water Quality Control Plan prepared by the California Regional Water Quality Control Board.

Product Piping Removal

HK2 will use a metal detector and excavate a small trench across the trace of the product line trench to ascertain if the product lines are present (the outline of the product line trench is clearly visible). If present, the lines will be removed with a backhoe, rinsed with a pressure washer, and transported to a disposal facility acceptable to ACHCSA.. We do not plan to collect soil samples beneath the lines unless contamination is obvious because the lines are <20 feet long and soil samples will be collected from B5 to evaluate the potential for unauthorized releases from the piping/dispenser system.

Any trenches created from piping removal activities will be backfilled with the excavated soil because site assessment activities have not been completed. Future remediation of this soil, if necessary, will be outlined in the Remedial Action Plan prepared to mitigate the other hydrocarbon-affected portions of the site.

Waste Oil Tank Cavity Backfill

At this time we do not plan to re-excavate and dispose of the soil backfilled into the waste oil tank cavity because the concentration of contaminants measured in the soil stockpile sample collected during tank removal activities indicate this soil may be acceptable for onsite use (2.5 mg/kg TPH-G, 4 mg/kg TPH-D, and below the laboratory reporting limit for benzene, HVOCs, and SVOCs). Although the stockpile sample did contain 177 mg/kg TOG, we consider this is an inappropriate analysis because TOG does not quantify motor oil components and can give a false positive if pieces of asphalt were in the soil stockpile sample. Therefore, to characterize the suitability of this soil for fill, we plan to collect one soil sample from B2 at approximately 3 fbg and analyze it for TPH-MO and soluble chromium. (California Title 22 Waste Extraction Test).

PERMITTING, DECONTAMINATION, WASTE DISPOSAL, AND REPORTING

The proposed drilling locations will be permitted and cleared by utility markout before the work is commenced. In addition to the drilling permit obtained from the ACPWA, an encroachment permit will be required from the City of Oakland for MW-1.

New factory sealed casing will be used for the monitoring wells. The drilling augers will be cleaned with a pressure washer and soil and reusable groundwater sampling equipment will be cleaned with a phosphate free TSP solution and rinsed with potable water before each boring is drilled or sample collected. Soil cuttings will be stockpiled onsite and sampled in accordance with disposal facility requirements. Equipment wash, rinse, and well purge water will be stored onsite in 55-gallon drums. The wastes will be either disposed of onsite (if approved by the ACHCSA and the CRWQCB) or transported to an appropriate disposal facility based on the laboratory results of soil and groundwater sample analyses.

The work will be performed within 30 days of the date the ACHCSA approves this work plan. A report summarizing the activities will be submitted to the ACHCSA 45 to 60 days after the work is completed.

Please call if you have any questions.

Sincerely,

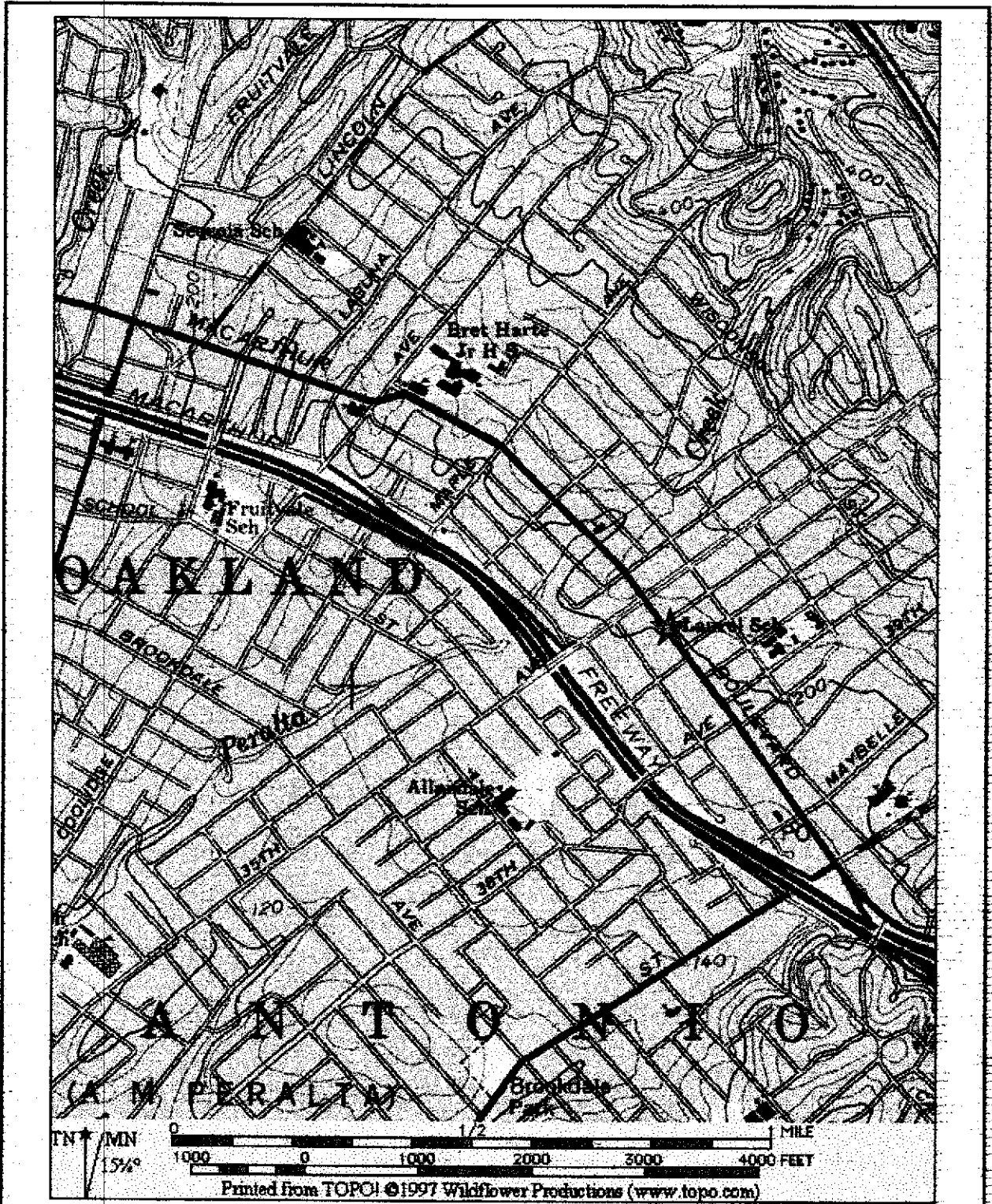
HK2, Inc./SEMCO



Deno G. Milano, RG
Senior Geologist



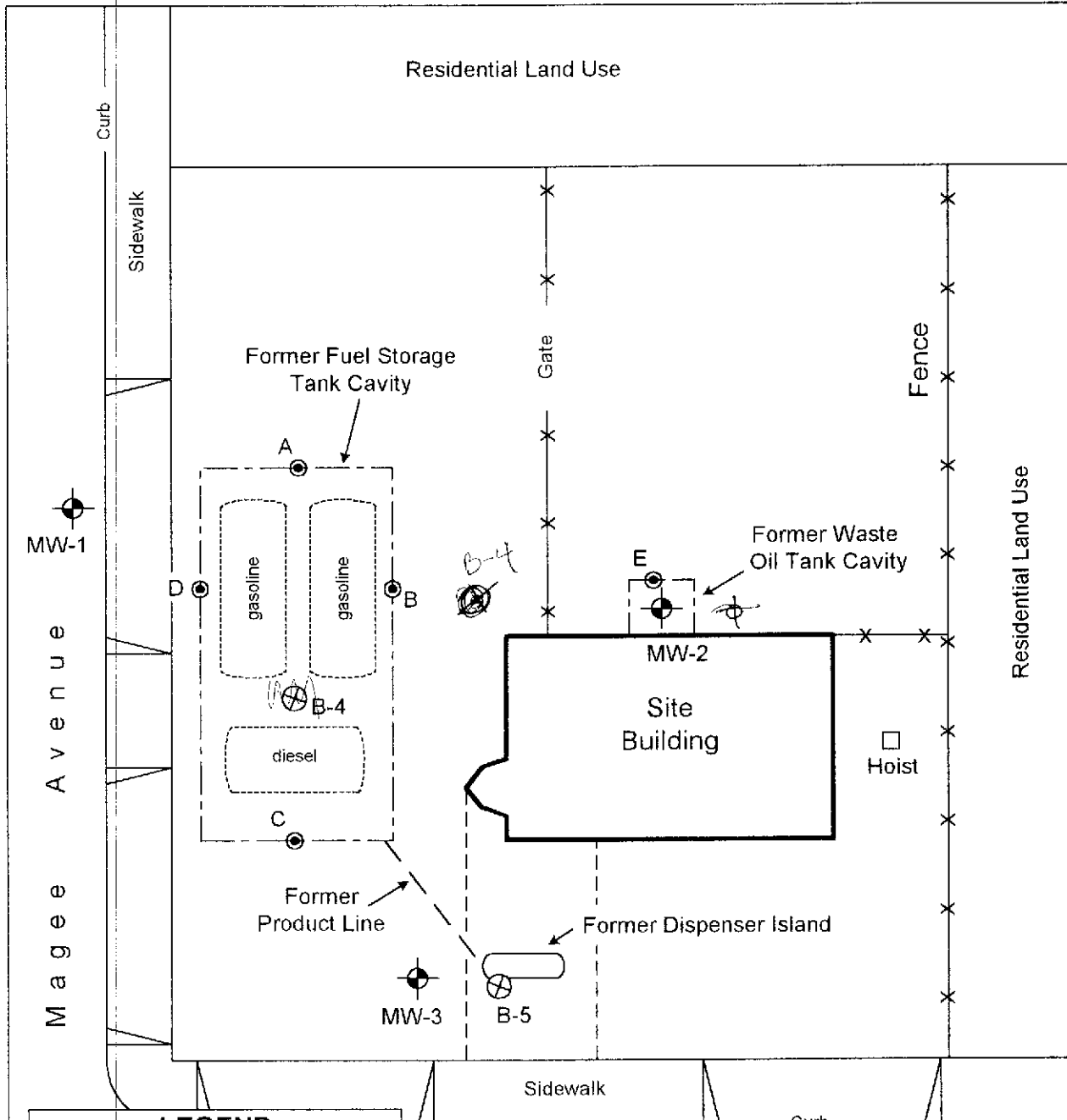
cc: Ms. Wannetta Hall



HK2, Inc./SEMCO
 70 Chemical Way
 Redwood City, CA 94063
 Project 97-0187.1
 FN: 97-0187.1.SC.F1 DRWG: BAW/7.08

★ SITE LOCATION

SITE LOCATION
 Scooter's Auto Repair
 3600 MacArthur Boulevard
 Oakland, California
FIGURE 1



LEGEND

- Proposed Boring
- Proposed Monitoring Well
- Tank Removal Soil Sample

HK2, Inc./SEMCO
 70 Chemical Way
 Redwood City, CA. 94063

Project 97-0187.1 DGM.7/98



Scale in Feet
 (approximate)

SITE PLAN
 Scooter's Auto Repair
 3600 MacArthur Boulevard
 Oakland, California
Figure 2

Table 1
Laboratory Results of Soil Sample Hydrocarbon Analyses
Scooter's Auto Repair, 3600 MacArthur Boulevard, Oakland, California

Sample Location	Depth (fbg)	TPH-G (mg/kg)	TPH-D (mg/kg)	TOG (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	HVOCs (mg/kg)	SVOCs (mg/kg)	Date Sampled
A	7	ND	ND	--	ND	ND	ND	ND	--	--	3-31-94
B	7	5,000	330	--	1.19	26	27	75	--	--	
C	7	5.8	ND	--	0.013	0.047	0.035	0.18	--	--	
D	7	2.3*	ND	--	ND	ND	ND	ND	--	--	
E	5	1.4	ND	87	ND	0.012	0.038	0.081	ND	ND	
Gasoline Stockpile		ND	ND	--	ND	ND	ND	ND	--	--	
Waste Oil Stockpile		2.5	4	177	ND	0.007	ND	0.032	ND	ND	
Laboratory Reporting Limit		0.5	10	50	0.005	0.005	0.005	0.010	≤0.01	≤1.7	

LEGEND: TPH-G and TPH-D = total petroleum hydrocarbons as gasoline and diesel, respectively (EPA Method 8015M); TOG = total oil and grease (Standard Method 5520F); B, T, E, X = benzene, toluene, ethylbenzene, and total xylenes (EPA Method 8020); HVOCs = halogenated volatile organic compounds (EPA Method 8010); SVOCs = semi-volatile organic compounds (EPA Method 8270); fbg = feet below grade; mg/kg = milligrams per kilogram; ND = concentration less than the laboratory reporting limit; -- = sample not analyzed for this constituent; * = chromatogram does not match typical gasoline pattern.

Table 2
Laboratory Results of Soil Sample Metal Analyses
 Scooter's Auto Repair, 3600 MacArthur Boulevard, Oakland, California

Sample Location	Depth (fbg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Date Sampled
A	7	--	--	ND	--	--	3-31-94
B	7	--	--	ND	--	--	
C	7	--	--	ND	--	--	
D	7	--	--	ND	--	--	
E	5	ND	57	ND	76	93	
Gasoline Stockpile		--	--	ND	--	--	
Waste Oil Stockpile		ND	61	31	69	97	
Laboratory Reporting Limit		0.5	5	5	5	5	

LEGEND: mg/kg = milligrams per kilogram; fbg = feet below grade; ND = concentration less than the laboratory reporting limit; -- = sample not analyzed for this constituent.

Table 3
Laboratory Results of Groundwater Sample Hydrocarbon Analyses
Scooter's Auto Repair, 3600 MacArthur Boulevard, Oakland, California

Sample Location	Date	TPH-G (mg/L)	TPH-D (mg/L)	TOG (mg/L)	B (mg/L)	T (mg/L)	E (mg/L)	X (mg/L)	HVOCs (mg/L)	SVOCs (mg/L)
Gasoline Cavity Pit Water	3-31-94	2	75	--	0.016	0.047	0.008	0.29	--	--
Waste Oil Cavity Pit Water		0.6	69	ND	0.0006	0.002	0.005	0.056	ND	ND
CRWQCB MSWQO		none	none	none	0.001	0.15	0.7	1.75	varies	varies
Laboratory Reporting Limit		0.5	0.5	5	0.0005	0.0005	0.0005	0.001	≤0.001	≤0.1

LEGEND: TPH-G and TPH-D = total petroleum hydrocarbons as gasoline and diesel, respectively (EPA Method 8015M); TOG = total oil and grease (Standard Method 5520F); B, T, E, X = benzene, toluene, ethylbenzene, and total xylenes (EPA Method 8020); HVOCs = halogenated volatile organic compounds (EPA Method 8010); SVOCs = semi-volatile organic compounds (EPA Method 8270); mg/L = milligrams per liter; ND = concentration less than the laboratory reporting limit; -- = sample not analyzed for this constituent; CRWQCB MSWQO = California Regional Water Quality Control Board municipal supply water quality objective.

Table 4
Laboratory Results of Groundwater Sample Metal Analyses
Scooter's Auto Repair, 3600 MacArthur Boulevard, Oakland, California

Sample Location	Date	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Nickel (mg/L)	Zinc (mg/L)
Gasoline Cavity Pit Water	3-31-94	--	--	ND	--	--
Waste Oil Cavity Pit Water		ND	ND	ND	0.02	0.81
CRWQCB MSWQO		0.005	0.05	0.05	0.1	5
Laboratory Reporting Limit		0.01	0.02	0.1	0.02	0.02

LEGEND: mg/L = milligrams per liter; ND = concentration less than the laboratory reporting limit; -- = sample not analyzed for this constituent; CRWQCB MSWQO = California Regional Water Quality Control Board municipal supply water quality objective.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY

DAVID J. KEARS, Agency Director



Post-It™ brand fax: 3mittal memo 7671		# of pages: 4
To: Deno Milano	From: Juliet Shin	
Co. SEMCO/HKZ	Co. Alameda County	
Dept.	Phone # 510-567-6763	
Fax # 415-572-9734	Fax # 510-337-9335	

June 3, 1994

Ms. Wannetta Hall
Scooter Wilson's Auto Repair
3600 MacArthur Blvd.
Oakland, CA 94619

State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4630

STID 1289

Re: Required investigations at 3600 MacArthur Blvd., Oakland, California

Dear Ms. Hall,

On March 31, 1994, four underground storage tanks (USTs) were removed from the above site: two 8,000-gallon gasoline USTs, one 6,000-gallon diesel UST, and one 100-gallon waste oil UST. Soil and ground water samples were collected from the tank pits. Analysis of samples identified up to 5,000 parts per million (ppm) Total Petroleum Hydrocarbons as gasoline (TPHg) and 330 ppm Total Petroleum Hydrocarbons as diesel (TPHd) in the tank pit soil samples, and up to 2,000 parts per billion (ppb) TPHg in the ground water samples.

Guidelines established by the California Regional Water Quality Control Board (RWQCB) require that soil and ground water investigations be conducted when there is evidence to indicate that a release has impacted the ground water.

You are required to conduct a **Preliminary Site Assessment (PSA)** to determine the lateral and vertical extent and severity of both soil and ground water contamination resulting from the release at the site. The information gathered by the PSA will be used to determine an appropriate course of action to remediate the site, if deemed necessary. The PSA must be conducted in accordance with the RWQCB's Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks, and be consistent with requirements set forth in Article 11 of Title 23, California Code of Regulations. The major elements of such an investigation are summarized in the attached **Appendix A**. The major elements of the guidelines include, but are not limited to, the following:

- o At least one ground water monitoring well must be installed within 10 feet of the observed soil contamination, oriented in the confirmed downgradient direction relative to ground water flow. In the absence of neighboring monitoring wells located within 100 feet of the site, or any other data identifying the confirmed downgradient direction, a minimum of three wells will be required to verify gradient

Wannetta Hall

Re: 3600 MacArthur

June 3, 1994

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direction. During the installation of these wells, soil samples are to be collected at five-foot-depth intervals and any significant changes in lithology.

- o Subsequent to the installation of the monitoring wells, these wells must be surveyed to an established benchmark, (i.e., Mean Sea Level) with an accuracy of 0.01 foot. Ground water samples are to be collected and analyzed quarterly, and water level measurements are to be collected monthly for the first three months, and then quarterly thereafter. If the initial ground water elevation contours indicate that ground water flow directions vary greatly than you will be required to continue monthly water level measurements until the ground water gradient behavior is known. Both soil and ground water samples must be analyzed for TPHg, TPHd, TOG, and BTEX.

This Department will oversee the assessment and remediation of your site. Our oversight will include the review of and comment on work proposals and technical guidance on appropriate investigative approaches and monitoring schedules. The issuance of well drilling permits, however, will be through the Alameda County Flood Control and Water Conservation District, Zone 7, in Pleasanton. The RWQCB may choose to take over as lead agency if it is determined, following the completion of the initial assessment, that there has been a substantial impact to ground water.

In order to properly conduct a site investigation, you are required to obtain professional services of a reputable environmental consultant. All reports and proposals must be submitted under seal of a California-Registered Geologist, -Certified Engineering Geologist, or -Registered Civil Engineer.

The PSA proposal is due within 60 days of the date of this letter. Once the proposal is approved, field work should commence within 60 days. A report must be submitted within 45 days after the completion of this phase of work at the site. Subsequent reports are to be submitted quarterly until this site qualifies for final RWQCB "sign-off". Such quarterly reports are due the first day of the second month of each subsequent quarter.

The referenced initial and quarterly reports must describe the status of the investigation and must include, among others, the following elements:

Wannetta Hall
RE: 3600 MacArthur
June 3, 1994
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- o Details and results of all work performed during the designated period of time: records of field observations and data, boring and well construction logs, water level data, chain-of-custody forms, laboratory results for all samples collected and analyzed, tabulations of free product thicknesses and dissolved fractions, etc.
- o Status of ground water contamination characterization.
- o Interpretations of results: water level contour maps showing gradients, free and dissolved product plume definition maps for each target component, geologic cross sections, etc.
- o Recommendations or plans for additional investigative work or remediation.

Please be advised that this is a formal request for a work plan pursuant to Section 2722 (c)(4) of Title 23 California Code of Regulations. Any extensions of the stated deadlines, or modifications of the required tasks, must be confirmed in writing by either this agency or RWQCB.

Lastly, it is the understanding of this office that the product piping at the site has not yet been removed. You are required to remove this piping and collect samples beneath this piping (one sample per every 20 feet of piping). Additionally, unacceptable contaminant levels were identified in the excavated soil from the waste oil tank pit. You are required to properly dispose of this soil at a certified facility and remove the piping within 45 days of the date of this letter. You must notify this office at least one week in advance of this work so that a County representative can be present at the site to observe this work.

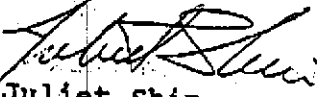
The State Water Resources Control Board has a Petroleum Underground Storage Tank Cleanup Fund available to sites to assist in investigations and cleanup. This office encourages you to look into applying to this fund. The address and phone number of the trust fund is:

Wannetta Hall
Re: 3600 MacArthur
June 3, 1994
Page 4 of 4

State Water Resources Control Board
Division of Clean Water Programs
UST Cleanup Fund Program
2014 T Street, Ste 130
P.O. Box 944212
Sacramento, CA 94244-2120
(916) 227-4307

If you have any questions about the fund, you can contact Blessy Torres at (916) 227-4535. Any other questions can be directed to me at (510) 271-4530.

Sincerely,



Juliet Shin
Hazardous Materials Specialist

cc: Terry Hamilton
SEMCO
1741 Leslie St.
San Mateo, CA 94402
Edgar Howell-File(JS)