



Subsurface Consultants, Inc.

August 1, 1997
SCI 447.068

Ms. Madullah Logan
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94502

*Madullah Logan
Approved
8/1*

R. William Rudolph, P.E.
President

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GENERAL
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Work Plan
Groundwater Monitoring Event and
Free Product Removal
327 34th Street
Oakland, California

Dear Ms. Logan:

INTRODUCTION

This letter presents a work plan prepared by Subsurface Consultants, Inc. (SCI) to conduct groundwater sampling and free product removal, if necessary, from three existing monitoring wells (MW-1 through MW-3) located hydraulically downgradient from two former underground storage tank (UST) excavations at the referenced site. The site location is shown on Plate 1. Previous investigations were initiated by the former tenant, Hendrick Automotive Group (Hendrick). SCI was retained by Fitzgerald, Abbott and Beardsley, LLP, on behalf of the Strough Family Trust of 1983, the owners of the property. This work plan describes the scope of services that will be performed to check the presence of free product in MW-3 and to evaluate the concentrations of petroleum hydrocarbons in groundwater collected from monitoring wells MW-1 through MW-3. The results of this investigation will be used to evaluate the scope of additional activities to define the extent of separate phase product and dissolved petroleum hydrocarbons in groundwater.

SITE LOCATION

The site is located at 327 34th Street, near the southwest corner of the intersection of Broadway and 34th Street. An automobile dealership currently operates at this location. The roughly rectangular site is occupied by an L-shaped building that houses automobile repair and painting facilities. An asphalt-paved parking lot is located on the eastern portion of the property. Two USTs were reportedly located along the sidewalk of 34th Street at the northwest corner of the building (Plate 2). Surrounding areas include an automobile dealership lot located north of the site across

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34th Street, an empty lot along the west property line, and a multi-story office complex along the southern perimeter of the site.

BACKGROUND

On March 4 and 5, 1993, Hendrick retained KTW & Associates/Subsurface Environmental Corporation to remove one 1,000-gallon UST containing unleaded gasoline and one 1,000-gallon waste oil UST. The USTs were removed under the direction of Alameda County Health Care Services Agency (ACHCSA). Soil stains were observed beneath both USTs. It was reported by ACHCSA that no apparent holes were observed. However, the KTW & Associates *Tank Closure Report* (dated August 30, 1993) indicated that Mr. Terry Williamson of Kip Prahl, an environmental consultant to Hendricks, had observed signs of structural tank failure, along with some holes in the UST. Soil samples were collected beneath the ends of the USTs following overexcavation.

Soil samples collected beneath the ends of the gasoline UST indicated impacts by gasoline hydrocarbons. Total petroleum hydrocarbons as gasoline (TPH-g) were found at concentrations up to 130 milligrams per kilogram in soil samples taken beneath the gasoline UST. The data also showed detectable concentrations of toluene, ethylbenzene, and xylenes. Soil samples from the waste oil UST excavation showed only relatively low concentrations of TPH as diesel, ethylbenzene, and xylenes. Concentrations of TPH-g, oil and grease, and halogenated volatile organic compounds were non-detectable. Concentrations of cadmium, chromium, nickel, and lead were either non-detectable or appeared to be representative of typical background concentrations of these metals in Bay Area soils. A summary of these data is presented in Table 1. Details of this sampling investigation are presented in the *Tank Closure Report* prepared by KTW & Associates on August 30, 1993.

Following approval of a work plan by ACHCSA, GeoPlexus, Inc. conducted a soil and groundwater investigation to assess impacts of petroleum hydrocarbons to groundwater. This investigation included the installation of three groundwater monitoring wells (MW-1 through MW-3) hydraulically downgradient from the former USTs (Plate 2), soil and groundwater sampling, and chemical analysis of samples. Groundwater was found at a depth of 22 to 25 feet below ground surface (bgs). The general direction of groundwater flow was towards the south-southwest. Details of this investigation are presented in the *Preliminary Site Characterization* report (dated August 19, 1993) prepared by GeoPlexus, Inc. Analytical testing of soil and groundwater samples revealed impacts from gasoline hydrocarbons at two wells (MW-2 and MW-3) located downgradient of the former gasoline UST. Soil and groundwater data for MW-1, located downgradient of the former waste oil UST, indicate no detectable concentrations of gasoline, diesel, and/or oil and grease compounds. Summaries of soil and groundwater analytical data are presented in Tables 2 and 3, respectively. One-quarter inch of separate-phase gasoline

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product was observed in well MW-3. It was recommended that an additional site characterization be performed to determine the lateral extent of the existing gasoline plume.

On September 29, 1993, ACHCSA issued a letter to Hendrick requesting submittal of a work plan for the additional investigation recommended in the *Preliminary Site Characterization*. No action has been taken by Hendrick since the issuance of the ACHCSA letter. Hendrick has vacated the property and Steve Simi Chevrolet, Inc. is the current operator at the site. The current owner, Strough Family Trust of 1983, intends to resume investigation of the site. This work plan details the proposed field activities.

SCOPE OF WORK

The proposed activities outlined in this work plan are intended to evaluate the presence of free and dissolved-phase petroleum hydrocarbons in wells MW-1 through MW-3 located at the referenced site. If free product is detected in any of the wells, SCI will implement a free product recovery program. In this regard, SCI proposes the following tasks:

- Task 1 - Groundwater Sampling
- Task 2 - Chemical Analyses
- Task 3 - Report Preparation

These tasks are described in detail below.

Task 1 - Groundwater Sampling (One Event)

Prior to groundwater sampling, SCI will gauge water levels and measure product thickness (if present) in wells MW-1 through MW-3. Free product in any of the wells will be removed by hand-bailing. SCI will perform groundwater monitoring of the wells for one sampling event. Wells containing free product will not be sampled. Following water level measurements, approximately three well volumes of groundwater will be purged from each well. Groundwater will be sampled using pre-cleaned disposable bailers and tested in the field to obtain pH, temperature, and electric conductivity parameters. Water collected in the disposable bailer will be decanted into laboratory-prepared containers and placed into ice-filled containers for delivery to a state-certified laboratory. Excess water generated during purging and any free product removed from the wells will be contained in 55-gallon drums for storage and disposal at a later date.

Task 2 - Chemical Analyses

The water samples will be submitted to Curtis & Tompkins, Ltd. for chemical testing. All water samples will be tested for the following analytes:

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- negative*
1. Total volatile hydrocarbons, EPA Method 8015, modified,
 2. Benzene, toluene, ethylbenzene and xylenes, EPA Method 8020, and
 3. Methyl tertiary butyl ether, EPA Method 8020.

Task 3 - Report Preparation

SCI will prepare a data summary report. The report will describe the groundwater sampling and free product removal activities performed and will discuss the results of chemical analyses. The report will include a site plan, data summary tables, and laboratory analysis reports. On the basis of the sampling results, the report will also include a work plan for further investigation activities at the site, as necessary.

We trust that this work plan responds to ACHCSA's request. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.



Samuel C. Won, PE, REA
Project Engineer

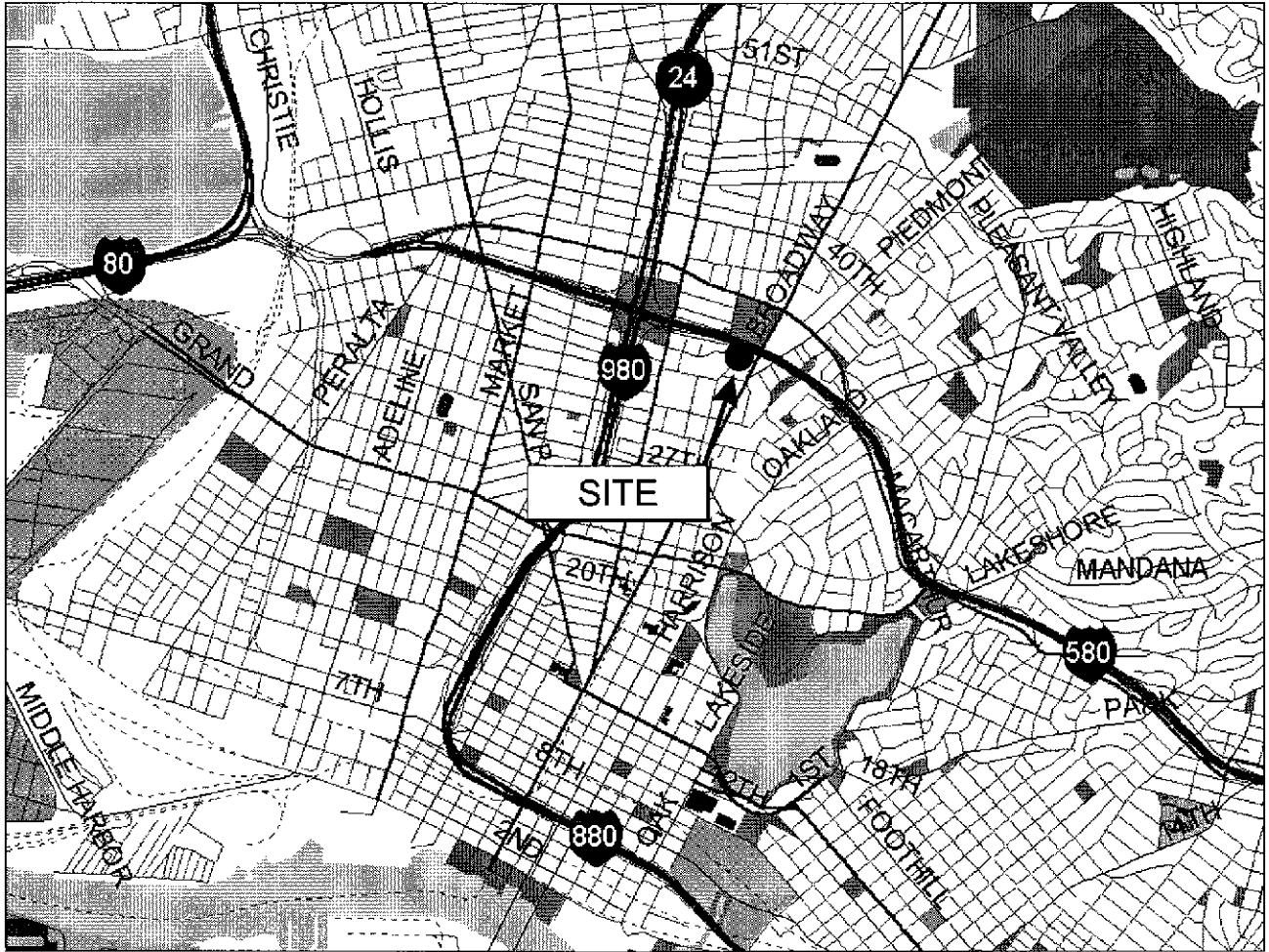


Terence J. McManus, REA
Project Manager

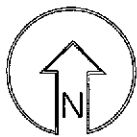
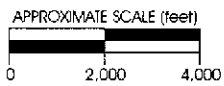
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Attachments: Vicinity Map, Plate 1
Site Plan, Plate 2
Summary of Tank Removal Sampling, Table 1
Summary of Soil Sampling, Table 2
Summary of Groundwater Sampling, Table 3

cc: Mr. Jonathan Redding, Fitzgerald, Abbott and Beardsley
Mr. Don Strough, Val Strough Group



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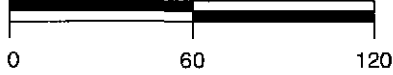
VICINITY MAP

VAL STROUGH CHEVEROLET 327 34TH STREET, OAKLAND, CALIFORNIA		PLATE 1
JOB NUMBER 447.068	DATE 5/20/97	APPROVED <i>SW</i>



Subsurface Consultants, Inc.
 Geotechnical & Environmental Engineers

APPROXIMATE SCALE IN FEET



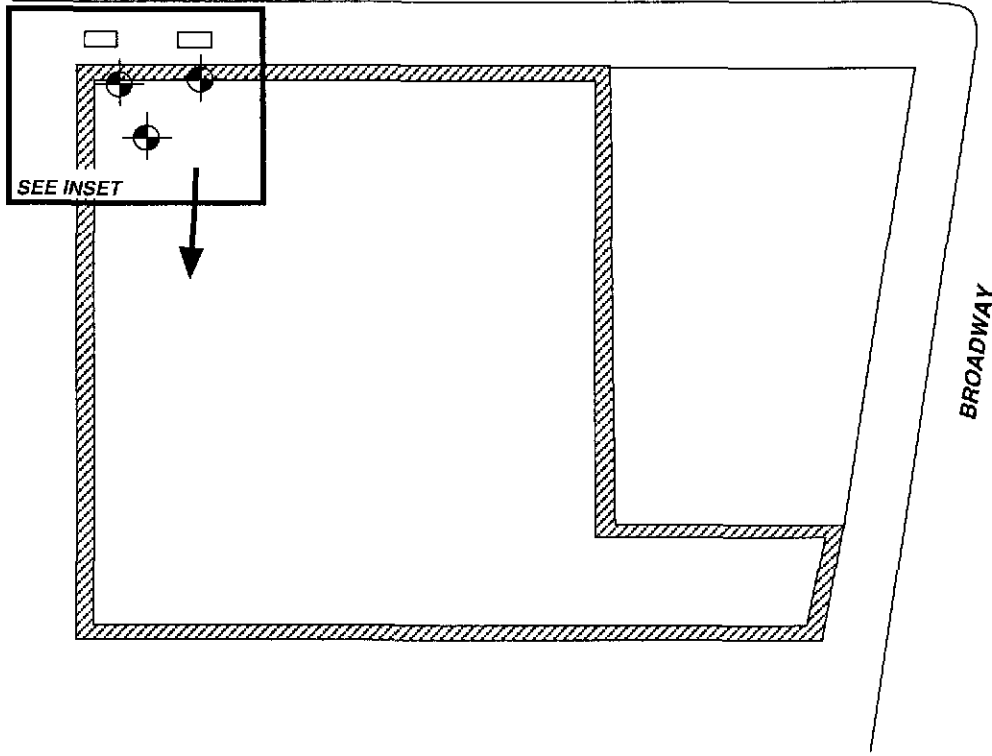
MW-1

GROUNDWATER MONITORING WELL



DIRECTION OF GROUNDWATER FLOW

34TH STREET



DETAIL

TA001

FORMER GASOLINE UST

TA002

TA003

FORMER WASTE OIL UST

TA004

MW-2

MW-1

MW-3

APPROXIMATE SCALE IN FEET



SITE PLAN



Subsurface Consultants, Inc.
Geotechnical & Environmental Engineers

VAL STROUGH CHEVROLET
327 34TH STREET, OAKLAND, CALIFORNIA

JOB NUMBER
447.068

DATE
4/24/97

APPROVED
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PLATE

2

Table 1
Summary of Tank Removal Sampling
327 34th Street, Oakland, CA
March 1993

Sample No.	Date	TPH-g (mg/kg)	B (µg/kg)	T (µg/kg)	E (µg/kg)	X (µg/kg)	TPH-d (mg/kg)	O&G (mg/kg)	HVOC (µg/kg)	Cd (mg/kg)	Cr (mg/kg)	Ni (mg/kg)	Pb (mg/kg)
TA001	3/4/93	5	<10	110	480	280	--	--	--	--	--	--	--
TA002	3/4/93	130	<80	200	4,900	7,800	--	--	--	--	--	--	--
TB003	3/5/93	<1	<5	<5	14	18	96	<50	ND	<0.3	49	75	8
TB004	3/5/93	<1	<5	<5	<5	<5	7	<50	ND	<0.3	39	65	<3

TPH-g: Total petroleum hydrocarbons as gasoline
 TPH-d: Total petroleum hydrocarbons as diesel
 B: Benzene
 T: Toluene
 E: Ethylbenzene
 X: Total xylenes
 O&G: Oil and grease
 HVOC: Halogenated volatile organic compounds

Cd: Cadmium
 Cr: Chromium
 Ni: Nickel
 Pb: Lead
 ND: Not detected at concentrations greater than detection limit
 --: Not Analyzed
 mg/kg: Milligrams per kilogram
 µg/kg: Micrograms per kilogram

Table 2
Summary of Soil Analytical Results
327 34th Street, Oakland, CA
July 1993

Sample ID	Depth (feet)	Date	TPH as Gasoline (mg/kg)	TPH as Diesel (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl- benzene (mg/kg)	Xylenes (mg/kg)	Oil & Grease (mg/kg)
MW1-S1	4.5 - 6	7/19/93	ND	ND	ND	ND	ND	ND	ND
MW1-S2	9.5 - 11	7/19/93	ND	ND	ND	ND	ND	ND	ND
MW1-S3	14.5 - 16	7/19/93	ND	ND	ND	ND	ND	ND	ND
MW1-S4	19.5 - 21	7/19/93	ND	ND	ND	ND	ND	ND	ND
MW1-S5	24.5 - 26	7/19/93	ND	ND	ND	ND	ND	ND	ND
MW2-S1	4.5 - 6	7/19/93	2,000	--	7.2	71	31	260	--
MW2-S2	9.5 - 11	7/19/93	1,700	--	5.7	54	24	210	--
MW2-S3	14.5 - 16	7/19/93	410	--	1.8	14	5.1	51	--
MW2-S4	19.5 - 21	7/19/93	10,000	--	100	780	260	1,700	--
MW2-S5	24.5 - 26	7/20/93	19	--	1.9	5.2	0.56	3.4	--
MW3-S1	4.5 - 6	7/20/93	ND	--	ND	0.009	ND	0.014	--
MW3-S2	9.5 - 11	7/20/93	ND	--	ND	ND	ND	0.009	--
MW3-S3	14.5 - 16	7/20/93	ND	--	0.079	0.009	0.010	0.023	--
MW3-S4	19.5 - 21	7/20/93	1,400	--	6.4	46	14	150	--
MW3-S5	24.5 - 26	7/20/93	19	--	1.4	2.6	0.38	2.1	--

mg/kg: Milligrams per kilogram

ND: Not detected at concentrations greater than detection limit

--: Not analyzed

Table 3
Summary of Groundwater Analytical Results
327 34th Street, Oakland, CA
July 1993

Sample ID	Date	TPH as Gasoline (µg/L)	TPH as Diesel (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Xylenes (µg/L)	Oil & Grease (mg/L)
MW1	7/27/93	ND	ND	ND	ND	ND	ND	ND
MW2	7/27/93	120,000	--	10,000	27,000	2,900	20,000	--
MW3	7/27/93	330,000	--	9,100	24,000	5,300	33,000	--

µg/L: Micrograms per liter

mg/L: Milligrams per liter

ND: Not detected at concentrations greater than detection limit

--: Not analyzed