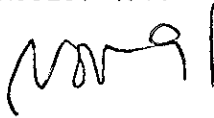


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FOLLOW-UP GROUND WATER TESTING  
CLARK'S HOME & GARDEN  
23040 CLAWITER ROAD  
HAYWARD, CALIFORNIA

PROJECT 4983



for

Chester Clark  
521 Trillier Lane  
Grants Pass, Oregon 97527

by

TERRATECH, INC.  
1365 Vander Way  
San Jose, California 95112

November 1991





**FOLLOW-UP GROUND WATER TESTING  
CLARK'S HOME & GARDEN  
23040 CLAWITER ROAD  
HAYWARD, CALIFORNIA**

**PROJECT 4983**

INTRODUCTION

This report describes the work performed and the findings from Terratech's recent testing of the shallow ground water at 23040 Clawiter Road in Hayward (see Figures 1 and 2). The work is being performed according to the requirements of the Alameda County Health Agency (ACHA) as follow-up to a fuel leak discovered when two underground storage tanks were removed from the site in 1988.

Background information on this project and the results of our preliminary site investigation and installation and sampling of one ground water monitoring well (MW-1) are presented in our Project 4983 report, "Initial Investigation of Ground Water Contamination, ...", dated September 5, 1991. Following preliminary sampling of the well, the ACHA requested two additional consecutive monthly sampling events, to be followed by quarterly sampling for one year.

WORK PERFORMED

The two monthly sampling events were performed by a member of Terratech's environmental department on September 5 and October 15, 1991. For each event, the depth to standing water in the well was first measured using an electronic probe. The well was then purged using a pre-cleaned Teflon bailer. During purging, temperature, pH and specific conductance measurements were taken until stable (< 10% variation) readings were obtained. Approximately four well-volumes of water were removed from the well prior to sampling. Purged water was placed into a labeled drum and left on site.

Samples from MW-1 were collected in a set of three 40-ml volatile organic analysis (VOA) vials, and a pair of 1-liter amber jars supplied by the testing laboratory. The VOA vials, which contained a small amount of hydrochloric acid preservative, were filled to a positive meniscus and sealed with a Teflon septum screw cap. The containers were then inverted and tapped to confirm the absence of headspace or bubbles, then immediately labeled and iced. The amber jars were filled, capped labeled and iced.

The samples were kept iced or refrigerated from the time of collection until the time of analysis. Standard chain of custody records, which document the sample collection, handling and analytical requests, are presented in the Appendix.

The ground water samples were analyzed by NET Pacific, a state-certified laboratory in Santa Rosa, for total petroleum hydrocarbons (TPH) as diesel using EPA Method 3510 extraction and GC-FID detection; TPH as gasoline using EPA Method 5030 with GC-FID detection; and the specific fuel compounds - benzene, toluene, ethylbenzene and xylenes (BTEX) using a modified EPA Method 8020.

FINDINGS AND COMMENTS

Ground Water Conditions

The on-site ground water level dropped approximately 0.5 feet during the 2-1/2 month period between the first and latest sampling events. Based on previously reviewed regulatory information on surrounding fuel leak sites, the ground water flows to the west. Table 1 presents a summary of ground water level measurements in MW-1 to date.

A light fuel odor and surface sheen were noticed by our sampling technician in the water removed from MW-1 during the recent purging and sampling activities. Recent laboratory analyses detected up to 47,000 parts per billion (ppb) TPH as gasoline, 13,000 ppb TPH as diesel, and elevated BTEX in the recent samples from MW-1. The recent TPH levels are generally higher than those detected in August, while the BTEX measurements are more consistent.

Ground water sample analyses results to date are summarized in Table 2. The September and October laboratory reports are appended.

COMMENTS

Our follow-up observations and laboratory analyses confirm fuel impact to the shallow ground water beneath the subject site. The impact appears to be from a mixture of gasoline and diesel.

To monitor the persistence or abatement of fuel contamination, and according to requirements set forth by the ACHA, we will be proceeding with four quarterly sampling rounds for one year, as contracted. Reports will be submitted accordingly, following completion of each quarterly event.



November 12, 1991

Project 4983

LIMITATIONS

This report and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. This is in lieu of all warranties, express or implied. Our sampling and testing program is necessarily limited.

Report Prepared by:

TERRATECH, INC.

*Sof* *E. R. L. H.*  
Shiela M. Chrisley  
Project Environmental Geologist

Reviewed by:

*E. R. L. H.*  
Eric R. Lautenbach  
CE 42437



Attachments (Vicinity Map, Site Plan, Chain of Custody Records and Laboratory Reports)

cc: Mr. Hugh Murphy - Hayward Fire Department  
Ms. Pamela Evans - Alameda County Health Care Agency  
Mr. Richard Hiatt - Regional Water Quality Control Board  
Mr. Butch Voss - L.H. Voss Materials, Inc.



<b>TABLE 1</b>	
<b>SUMMARY OF GROUND WATER DEPTH MEASUREMENTS</b>	
Clark's Home and Garden Center 23040 Clawiter Road Hayward, California	
<b>Location and Date</b>	<b>Depth to Ground Water (feet)</b>
MW-1	
08/07/91	17.44
09/05/91	17.72
10/15/91	17.92



**TABLE 2****SUMMARY OF GROUND WATER SAMPLE ANALYSIS RESULTS**

Clark's Home and Garden Center  
23040 Clawiter Road  
Hayward, California

(Concentrations are in parts per billion (ppb))

Sample Location and Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
MW-1						
08/07/91	7,100	5,900	45	<25	130	520
09/05/91	2,800*	47,000	<50	<50	230	660
10/15/91	13,000	24,000	<50	<50	<60	390
Action Level/MCL	--	--	1	100	680	1,750

**NOTES:**

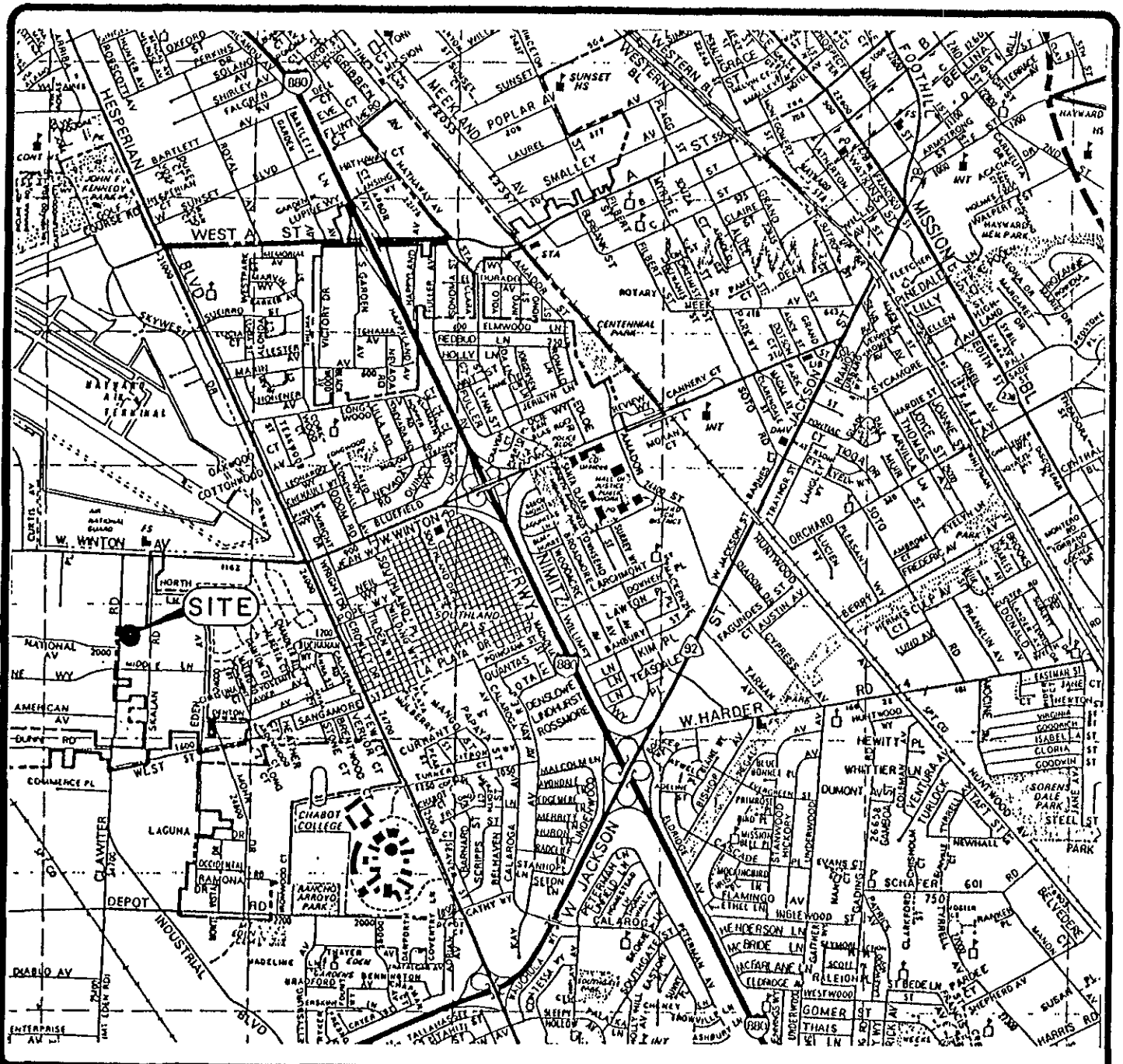
TPH = Total petroleum hydrocarbons

\*Laboratory notes that petroleum hydrocarbon detected as diesel is due to both diesel and a petroleum hydrocarbon lighter than diesel (likely gasoline).

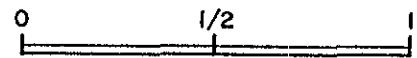
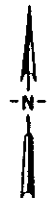
Action Levels and Maximum Contaminant Levels (MCL) are for contaminants in drinking water, as established by the California Department of Health Services.

-- = Action Level or MCL not established for TPH in drinking water. Clean-up guidelines are established on a site-specific basis.





BASE MAP: Thomas Brothers Maps; Alameda County  
1990 edition; p. 58.



Scale in miles

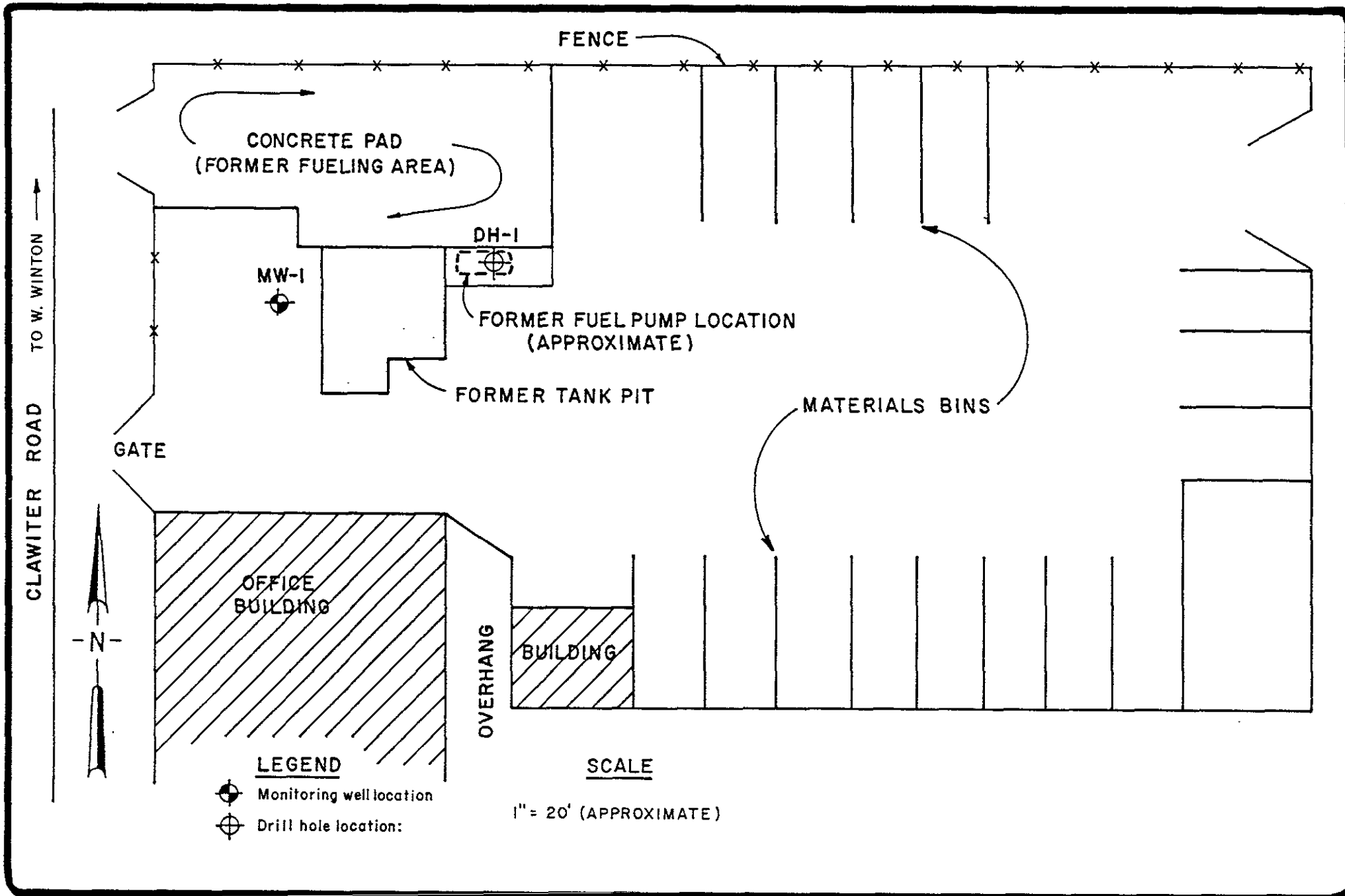


AUG. 1991  
**TERRATECH**

CLARK'S HOME AND GARDEN  
23040 CLAWITER ROAD  
HAYWARD, CALIFORNIA

**SITE VICINITY MAP**

**FIGURE**  
**1**  
**PROJECT**  
**4983**



AUG. 1991  
TERRATECH

CLARK'S HOME AND GARDEN  
23040 CLAWITER ROAD  
HAYWARD, CALIFORNIA

SITE PLAN

FIGURE

2

PROJECT  
4983