

*San  
Lorenzo  
Village Homes Association*

276-4554  
351-2731

LARGEST HOMES ASSOCIATION IN THE NATION

377 PASEO GRANDE      SAN LORENZO, CA. 94580

June 7, 1989

Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, CA 94621

Attention: Catherine Chesick

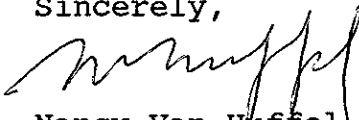
RE: Underground Storage Tank Closure at 427 Paseo Grande,  
San Lorenzo, CA (Eden Fire Department)

Dear Ms. Chesick:

Per our phone conversation this date, enclosed is our monitoring well report.

If you need any additional information, please contact me at my office.

Sincerely,



Nancy Van Huffel  
Administrator

jms

Enclosure

ALAMEDA COUNTY  
DEPT. OF ENVIRONMENTAL HEALTH  
HAZARDOUS MATERIALS 6/9

**GROUNDWATER MONITORING WELL  
CONSTRUCTION AND SAMPLING  
AT  
427 PASEO GRANDE  
SAN LORENZO, CA.**

for

San Lorenzo Village Homes Assoc.

by

**Aqua Science Engineers, Inc.  
San Ramon, Ca.**

May 30, 1989

## **INTRODUCTION**

In April, 1989 Aqua Science Engineers (ASE) was contracted by San Lorenzo Village Homes Assoc. to construct and sample one monitoring well at 427 Paseo Grande in San Lorenzo. The work was performed in response to the Alameda County Health Care Services Agency letter of June 30, 1988, which requested the well installation. A permit for well construction was obtained from Alameda County Flood Control and Water Conservation District Zone 7 (Appendix A).

The site is located just west of Interstate 880, less than 1/2 mile south of San Lorenzo Creek (1988 Alameda County Thomas Guide, page 27, grid E-6), (Figure 1). The San Lorenzo Fire Dept. occupies the subject site, along with the city library and post office in a small complex.

In December, 1987 a single 550 gallon gasoline tank was removed from the site (Figure 2), and subsequent soil sampling revealed TPH as gasoline concentrations of 99 and 510 ppm in two soil samples from the tankpit (Kaprealian Engineering Inc., report of December 17, 1987).

## **DRILLING PROCEDURES**

On May 11, 1989, an ASE Mobile B-61 drilling rig with 8" hollow stem augers drilled to 32 feet near the northwest edge of the former tank pit area. The rig was steamcleaned prior to arrival on site. Undisturbed soil samples were collected from 5, 10, and 15 feet with a hammer driven California split spoon sampler which was also precleaned.

At approximately 10 feet a slight odor of gas was perceived, emanating from the boring. At 15 feet drilling depth, shallow groundwater was measured to be at approximately 11 feet depth. The slight odor of gasoline was noted from the hole at 20 feet depth. Drilling proceeded without incident to 32 feet total depth.

## **WELL CONSTRUCTION PROCEDURES**

Upon completion of drilling, a 2" schedule 40 PVC well was installed to 31 feet total depth. Twenty feet of .010" slotted casing with a threaded bottom cap (approx. 3") was followed by 11 feet of blank casing, bringing the well to grade. The well was sanded with #3 sand through the augers, from 31 feet up to 9 feet depth. One foot of bentonite pellets followed with water for activation of the pellets. The remainder of the boring was filled to grade with cement, and a 6" street cover was installed along with a locking inner cap.

## **SAMPLING PROCEDURES**

The soil samples were collected in 2" X 6" precleaned brass tubes and sealed with plastic caps and tape. The sampler was cleaned with a TSP solution and rinsed with tap water between samplings. The samples were put into a cooler on ice and transported to a State Certified Analytical Laboratory for analysis following chain of custody procedures (Appendix B).

The completed well was developed by bailing about 40 gallons of water into a barrel. The 2" Teflon bailer was then used to collect a groundwater sample which was put into a 1 liter amber bottle and a 40 ml amber septum vial, then handled as described above.

#### **SAMPLE ANALYSIS**

The soil samples procured from 5, 10, and 15 feet, along with the groundwater sample were analyzed for TPH as gasoline with BTXE distinction using EPA methods 8015/8020 (602). Soil samples MW-1,5' and MW-1,15' were found to contain the constituents of interest in concentrations below the method detection limit (Appendix B). MW-1,10' contained 5.1 ppm TPH as gasoline, and 156 ppb total BTXE. The groundwater sample MW-1a contained nondetectable levels of gasoline and BTXE.

#### **SITE GEOLOGY**

The soils encountered as drilling progressed were logged by an ASE geologist using the United Soil Classification System (USCS). From grade to a depth of 25 feet the soil is predominantly clay (CH), olive brown to gray to black, with minor amounts of gravel at 2 to 4 feet, and grading from clay into sand and clay (ML, SC) at about 25 to 32 feet depth (Appendix C). Shallow groundwater exists at about 11 feet below grade. A local groundwater gradient was not determined though the regional gradient is probably to the west, toward the San Francisco Bay.

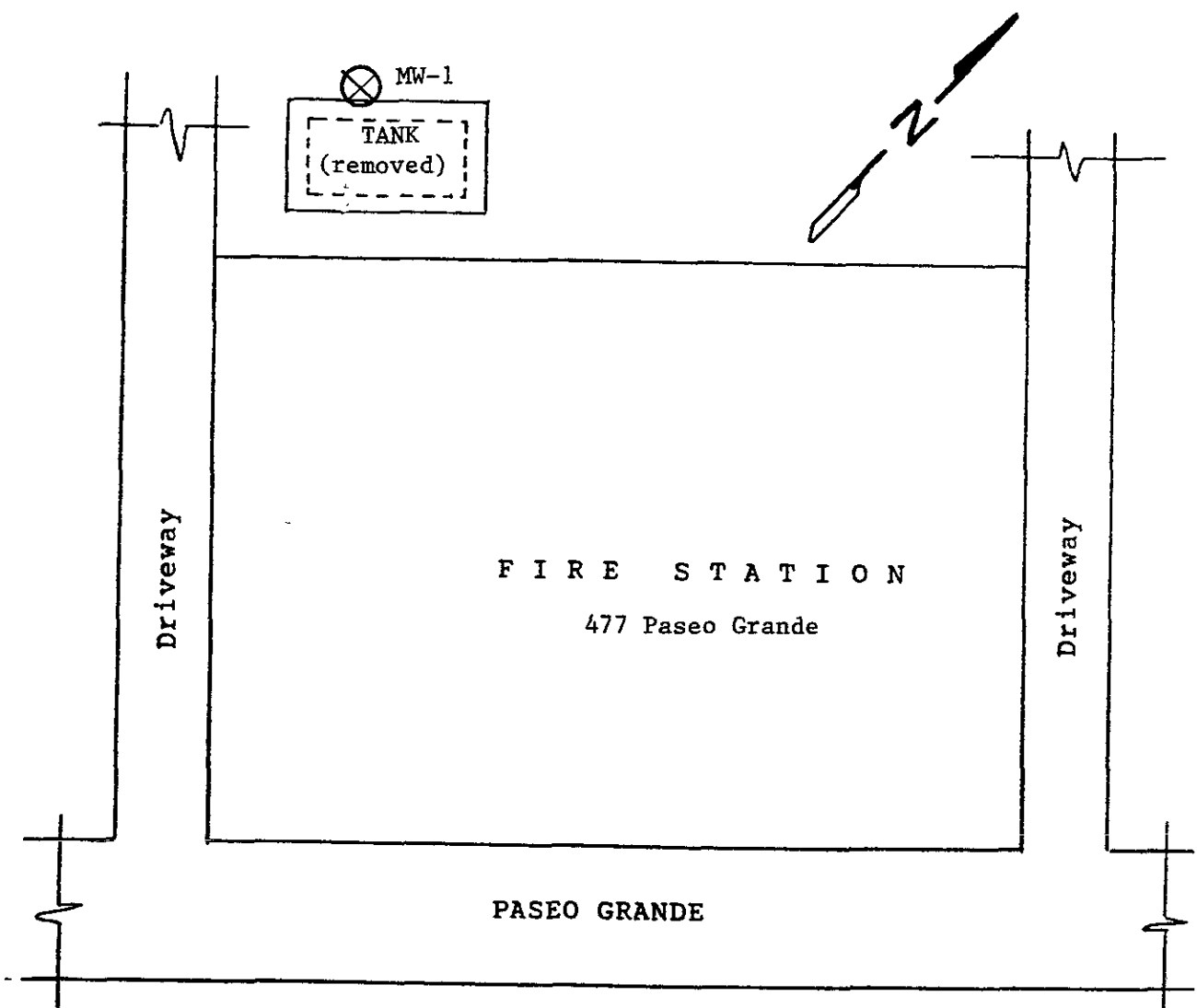
#### **CONCLUSIONS**

Soil sample analyses show minor petroleum hydrocarbon contamination in the soil at 10 feet. The groundwater analysis indicates that the unauthorized release of gasoline from the previously existing UST may have been minor and the extent of the contamination very localized, in the immediate vicinity of the tank. The clayey nature of the soil may be an inhibitor to the migration of contaminants from the point of release, though the proximity of the minor soil contamination to the water table is a cause of concern.

#### **RECOMMENDATIONS**

The well should be sampled quarterly for a period of one year to monitor the condition of the groundwater with regards to contaminant migration from soil into the groundwater. The samples should be analyzed for TPH as gasoline with BTXE distinction as past samples. If future analyses show that the groundwater has remained free of the constituents of interest, then perhaps periodic monitoring can be discontinued.

Figure 2



⊗ denotes monitoring well location

Figure 2

**APPENDIX A**

**PERMITS**



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT San Lorenzo Fire Dept. 427 Paseo Grande San Lorenzo, Ca. 94580

PERMIT NUMBER 89245 LOCATION NUMBER

(2) CLIENT Name San Lorenzo Village Homes Assoc. Address 377 Paseo Grande City San Lorenzo Zip 94580

Approved Todd N. Wendler Date 25 Apr 89

(3) APPLICANT Name Aqua Science Engineers Address 2500 Old Conyn Rd. City San Ramon Zip 94583

PERMIT CONDITIONS

Circled Permit Requirements Apply

(4) DESCRIPTION OF PROJECT Water Well Construction X Geotechnical Cathodic Protection Well Destruction

(5) PROPOSED WATER WELL USE Domestic Industrial Irrigation Municipal Monitoring X Other

(6) PROPOSED CONSTRUCTION Drilling Method: Mud Rotary Air Rotary Auger X Cable Other

- A. GENERAL 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Notify this office (484-2600) at least one day prior to starting work on permitted work and before placing well seals. 3. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed. 4. Permit is void if project not begun within 90 days of approval date.

- B. WATER WELLS, INCLUDING PIEZOMETERS 1. Minimum surface seal thickness is two inches of cement grout placed by tremie, or equivalent. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

- C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. D. CATHODIC. Fill hole above anode zone with concrete placed by tremie, or equivalent. E. WELL DESTRUCTION. See attached.

WELL PROJECTS Drill Hole Diameter 8 in. Depth(s) 35 ft. Casing Diameter 2 in. Number Surface Seal Depth 11 ft. of Wells 1 Driller's License No. 487000

GEOTECHNICAL PROJECTS Number Diameter in. Maximum Depth ft.

(7) ESTIMATED STARTING DATE May 5, 1989 ESTIMATED COMPLETION DATE May 5, 1989

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Greg Grouner Date 4-24-89

**APPENDIX B**  
**CHAIN OF CUSTODY DOCUMENTATION**  
**AND**  
**SAMPLE ANALYSES REPORT**



# CHROMALAB, INC.

Analytical Laboratory  
Specializing in GC-GC/MS

- Environmental Analysis
- Hazardous Waste
- Drinking Water
- Waste Water
- Research and Method Development
- Consultation

Aqua Science

Attn: Greg Gouvea

May 16, 1989

ChromaLab File No. 0589030

RE: Three soil samples and one water sample (MW-1a) for Gasoline and BTEX analysis

Analysis duration: May 15-16, 1989

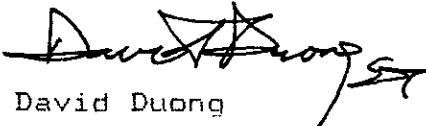
## RESULTS:

<u>Sample No.</u>	<u>Gasoline (mg/Kg)</u>	<u>Benzene (µg/L)</u>	<u>Toluene (µg/L)</u>	<u>Ethyl Benzene (µg/L)</u>	<u>Total Xylenes (µg/L)</u>
MW-1, 5'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1, 10'	5.1	22.5	N.D.	99.3	34.2
MW-1, 15'	N.D.	N.D.	N.D.	N.D.	N.D.
MW-1a	N.D.	N.D.	N.D.	1.0	N.D.
Detection Limit					
Soil	2.5	5	5	5	5
Water	0.5	1	1	1	1
Method of Analysis	Mod. 8015	602/8020	602/8020	602/8020	602/8020

## QA/QC:


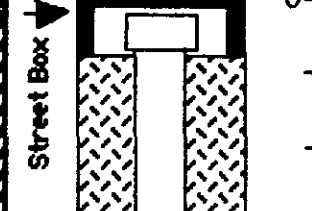
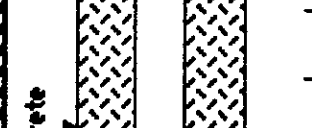
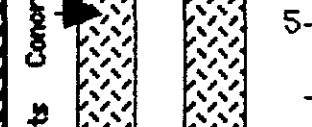
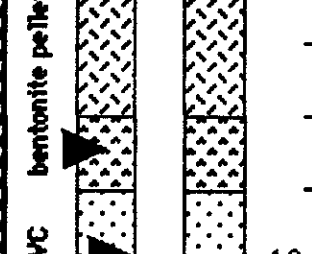
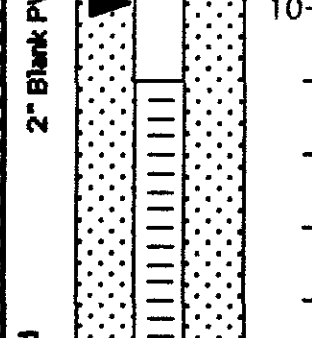
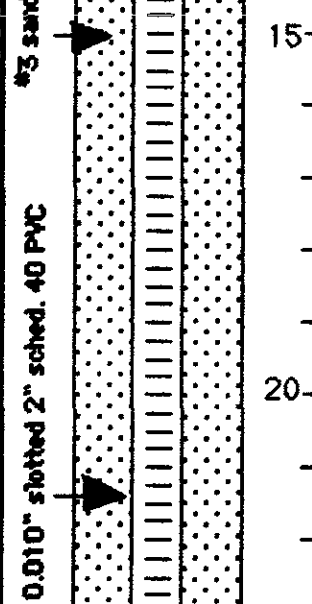
- \* Sample blank concentration is none detected.
- \* Spiked recovery for Gasoline is 100.1%
- \* Spiked recovery for Benzene is 86.6%, for Toluene is 88.4%, for Ethyl Benzene is 80.9%, for Total Xylenes is 84.7%

CHROMALAB, INC.

  
David Duong

  
Eric Tam

**APPENDIX C**  
**BORING LOG**  
**AND**  
**WELL COMPLETION DIAGRAM**

depth ft.	SOILS / ROCK DESCRIPTION	MONITORING WELL DETAILS	REMARKS
0	concrete; approximately 4-inches		
1 2	clay, greenish black, sand v. minor, stiff, (CH)		
3 4	clay, as above with minor blue-green gravel, (CH)		
5 6	clay, olive brown to black, sand nil, firm, (CH)		soil sample no odor
7 8 9 10 11	clay, green-olive gray to brown, sand minor, (CH)		soil sample sl. odor
12 13 14 15 16	clay, olive brown, sand nil, firm, (CH)		soil sample measured water at 11'
17 18 19 20 21 22	clay, as above, (CH)		sl. odor of gas from hole

**PROJECT: San Lorenzo Village Homes Assoc.**

**LOG OF MONITORING WELL # MW-1**

depth	SOILS / ROCK DESCRIPTION	MONITORING WELL DETAILS	REMARKS
23	clay, olive brown, sand nil, (CH)		no odors
24			
25			
26	clay and sand, olive brown, layers few inches thick, (ML)		
27			
28			
29			
30	sand and clay, olive gray-brown, sand > 50%, fine to med. gr., (SC)		
31			
32	B. O. H.	threaded bottom cap	
33			
34			
35			
36			
37			
38			
39			
40			