REQUEST FOR SITE CLOSURE
6202 CHRISTIE AVENUE SITE
EMERYVILLE, CALIFORNIA

Prepared for:

Wendel, Rosen, Black, Dean & Levitan
1221 Broadway, Twentieth Floor
P. O. Box 2047
Oakland, CA 94612

Prepared by:
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August 11, 1992
Project No. 20506-004-01

CENTURY WEST ENGINEERING

August 11, 1992

Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, CA 94621

Attention: Mr. Dennis Byrne

Subject: Request for Site Closure
6202 Christie Avenue Site
Emeryville, California
CWEC 20506-004-01

Gentlemen:

This report documents underground storage tank (UST) removal and closure activities at the subject site and requests that both Alameda County and the San Francisco Bay Regional Water Quality Control Board grant "no further action" status for this site. This closure request is based on the following determinations:

- Laboratory results indicate that the impact of hydrocarbon releases on surrounding soils is limited and that most of the hydrocarbon-laden soil has been removed to offsite disposal.
- Four consecutive quarters of ground water sampling have demonstrated that no degradation of ground water quality has resulted from operation of the USTs.
- Ground water in the subject area has no beneficial uses, other than eventual discharge to surface water.

We appreciate the opportunity to present this closure request for your review and consideration. Please contact us if you have questions or require additional information.

Very truly yours,

CENTURY WEST ENGINEERING CORPORATION

James E. Gribi
Project Geologist

Terry L. Angle
Professional Engineer

REGISTERED PROFESSIONAL ENGINEER
TERRY L. ANGLE
C.E. 30193
CIVIL
STATE OF CALIFORNIA

JEG/TLA:cc
Enclosure

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1.0 INTRODUCTION

Century West Engineering Corporation was retained by Wendel, Rosen, Black, Dean & Levitan to assist with closure of the underground storage tank (UST) at the 6202 Christie Avenue site in Emeryville, California. This report summarizes the UST-related activities and requests that both Alameda County and the San Francisco Bay Regional Water Quality Control Board grant "no further action" status for this site. This report summarizes the evidence which we believe supports our request for "no further action" status. In preparing this letter, we have attempted to follow the *Recommended Format for Case Closure Referrals to RWQCB for Site Cleanup Certification*, dated June 19, 1989.

2.0 SITE BACKGROUND

Our understanding of the project site is based on: (1) Our review of various site documents; (2) Brief site visit conducted by Century West Engineering; and (3) Interviews with knowledgeable persons. A list of documents reviewed by Century West Engineering is contained in Appendix A.

The project site is located just east from Interstate 80 in Emeryville, California (see Figure 1). The project site facility was used to manufacture and sell electrical and mechanical products from the mid-1960s until 1986. Two USTs were formerly located adjacent to the northeast corner of the project site building (see Figure 2). A brief chronology of UST-related activities is contained in Table 1.

Table 1
CHRONOLOGY OF UST-RELATED EVENTS
6202 Christie Avenue Site

Date	*Event*
December 1989	An environmental assessment of the project site (together with the adjoining property at 6150 Christie Street) was conducted by Kaldveer Associates Geoscience Consultants. The environmental assessment reported the presence of one waste oil UST on the site which appeared to be full.
March 1, 1990	One 550-gallon waste oil UST, and one 1,000-gallon diesel UST were removed by Scott Company (see UST removal documents in Appendix B). Three sidewall soil samples and one ground water sample were taken from the common excavation. According to Jay Groh, formerly of Scott Co., a small hole was observed in one of the USTs, and a small amount of product was released while pulling the UST. The product was pumped into a drum for offsite disposal.
Oct/Nov 1990	Harding Lawson Associates (HLA) conducted a remedial investigation of the project site. The investigation consisted of drilling and installing three ground water monitoring wells, and conducting additional sampling unrelated to the USTs.

Table 1
CHRONOLOGY OF UST-RELATED EVENTS
6202 Christie Avenue Site

Date	*Event*
Nov/Dec 1990	Wallace-Kuhl & Associates conducted a site assessment consisting of drilling and sampling six soil borings, and installing ground water monitoring wells in three of the borings. Ground water samples from the three wells analyzed for TPH-gas, TPH-diesel, and BTXE were all nondetect.
December 12, 1990	Western Environmental Science and Technology (WEST) Laboratory took one composite sample of soil stockpiled onsite during the UST removal. The composite sample was analyzed for TPH-diesel/motor oil.
January 14, 1991	WEST Laboratory took one composite sample of stockpiled soil from the UST removal. The composite sample was analyzed for TPH-gas, TPH-diesel, BTXE, chlorinated hydrocarbons, organochlorine pesticides, PCBs, heavy metals, and aquatic toxicity.
March 1991	WEST Laboratories collected ground water samples from the three project site monitoring wells. Samples analyzed for TPH-gasoline, BTXE, TPH-diesel/motor oil were all nondetect.
July 22, 1991	WEST Laboratories collected ground water samples from the three project site monitoring wells. Samples analyzed for TPH-gasoline, BTXE, TPH-diesel/motor oil were all nondetect.
October 10, 1991	WEST Laboratories collected ground water samples from the three project site monitoring wells. Samples analyzed for TPH-gasoline, BTXE, TPH-diesel/motor oil were all nondetect.

3.0 INVESTIGATIVE METHODS

Several field investigations were conducted to assess hydrocarbon leakage from the two USTs. Century West Engineering was not involved in any of these investigations. However, the following paragraphs summarize our interpretation of the investigative methods, based on document reviews and interviews.

3.1 Soil and Water Sampling During UST Removal

The two USTs were removed from a common excavation in March 1990. A total of three soil samples were taken, one each from the north side, the south side, and the west side of the excavation pit (see Figure 2). The laboratory data report (see Appendix C) indicates that the samples were taken in brass liners in accordance with California LUFT Field Manual guidelines. Each sample was analyzed at WEST Laboratories for TPH-diesel/motor oil.

One sample of the pit water was taken after removal of the two USTs. The sample was

analyzed by WEST Laboratories for TPH-diesel/motor oil. The laboratory data report for this sample is contained in Appendix C.

3.2 HLA Remedial Investigation

Harding Lawson Associates (HLA) drilled and sampled three monitoring well borings on November 1, 1990. One of the borings (MW-3) was located directly adjacent to the west side of the backfilled UST excavation (see Figure 3). The two other well borings (MW-1 and MW-2) were located at the south end of the property, in excess of 100 feet from the former USTs. MW-3 was sampled at depths of three feet, eight feet, and 14 feet below grade. MW-1 and MW-2 were sampled at depths of five and ten feet below grade. Soil samples were analyzed by NET Pacific for TPH-gas, TPH-diesel/motor oil, total oil and grease (TOG), BTXE, and volatile and semi-volatile organic compounds. The shallowest sample from each boring was analyzed for heavy metals. We have included the HLA report in Appendix D.

The three ground water monitoring wells (MW-1, MW-2, and MW-3) were installed on November 1, 1990. After developing and purging the wells, they were sampled on November 5, 1990. Ground water samples from the three wells were analyzed by NET Pacific for TPH-gas, TPH-diesel/motor oil, TOG, BTXE, volatile and semi-volatile organic compounds, and heavy metals. We have included the tabulated laboratory results contained in the HLA report in Appendix D. The HLA report indicates that MW-3 was checked for free floating hydrocarbons on November 27, 1990. Apparently, the three wells were abandoned and destroyed upon completion of this investigation.

3.3 WKA Site Assessment

Wallace-Kuhl & Associates (WKA) drilled and sampled six soil borings on November 29, 1990. Four of the borings (B-1, B-4, B-5, and B-6) were located on each side of the excavation (see Figure 4). Three of the borings (B-1, B-2, and B-3) were converted to ground water monitoring wells. B-1, B-2, and B-3 were sampled at 2.5 feet and 4.5 feet below grade. B-4, B-5, and B-6 were sampled at a depth of 3.5 feet below grade. All samples were taken using a California-type split-spoon sampler in accordance with California LUFT Field Manual guidelines. All samples were analyzed by WEST Laboratories for TPH-gas, TPH-diesel/motor oil, and BTXE. Laboratory data reports for these samples are contained in Appendix C.

Three borings (B-1, B-2, and B-3) were converted to monitoring wells on November 29, 1990. B-1 was located approximately 10 feet northwest (expected downgradient direction) from the backfilled UST pit (see Figure 4). The wells were developed by surging the wells for a minimum of 15 minutes. The wells were purged and sampled on December 6, 1990 in accordance with California LUFT Field Manual guidelines. Ground water samples from the three wells were analyzed at WEST Laboratories for TPH-gas, TPH-diesel/motor oil, and BTXE. Laboratory data reports for these samples are contained in Appendix C.

3.4 Stockpiled Soil Sampling

The soil which was stockpiled during the UST removal, which consisted of approximately 25 cubic yards of soil, was sampled on December 12, 1990 and on January 14, 1991 by WEST Laboratories. Each sample consisted of four discrete brass tube samples which were composited in the laboratory. Each brass tube sample was taken in accordance with California LUFT Manual guidelines. The December 12, 1990 composite sample (1A,B,C,D) was analyzed for TPH-diesel/motor oil. The January 14, 1991 composite sample was analyzed for TPH-gas, TPH-diesel/motor oil, BTXE, halogenated volatile organics (chlorinated hydrocarbons), organochlorine pesticides, PCBs, heavy metals, and aquatic toxicity. Laboratory data reports for these two samples are contained in Appendix C.

3.5 Quarterly Ground Water Sampling of WKA Wells

WEST Laboratories collected ground water samples from the three WKA wells on April 5, 1991, July 22, 1991, and October 10, 1991. We contacted WEST to determine sampling methods. WEST stated that each quarterly ground water sample was taken as follows: (1) Static ground water level and well depth were measured using a clean steel tape: (2) A clean disposable PVC bailer was used to purge the well of three well volumes; (3) One one-liter amber bottle and four VOA vials were completely filled directly from the disposable bailer; and (4) Each bottle was sealed, labeled, and placed in cold storage for transport to WEST Laboratories under formal chain of custody. Quarterly ground water samples from each of the three wells were analyzed for TPH-gas, TPH-diesel/motor oil, and BTXE. Laboratory data reports and chain of custody records are contained in Appendix C.

4.0 EXTENT OF SOIL AND GROUND WATER POLLUTION

4.1 Extent of Soil Pollution

A summary of soil analytical results is contained in Table 2. A review of the laboratory data indicates that the only constituents related to the operation of the USTs are TPH-gas, TPH-diesel/motor oil, and BTXE. Thus, we have not included other constituents, such as volatile organics or heavy metals, in Table 2. However, we have footnoted those samples which were analyzed for other constituents.

Table 2
SUMMARY OF SOIL ANALYTICAL RESULTS

Sample ID	*Sample Depth*	*Concentration (ppm)*						
		TPH-G	*TPH-D*	*TPH-MO*	*B*	*T*	*X*	*E*
UST Removal Samples - 03/01/90								
N1	?	--[1]	ND(10)[2]	ND(10)	--	--	--	--
S2	?	--	ND(10)	ND(10)	--	--	--	--

Table 2
SUMMARY OF SOIL ANALYTICAL RESULTS

Sample ID	Sample Depth	Concentration (ppm)						
		TPH-G	TPH-D	TPH-MO	B	T	X	E
E3	?	--	ND(10)	**21**	--	--	--	--
	HLA Remedial Investigation - 11/01/90							
MW-1	5.5 ft[3,4,5,6]	ND(1.0)	ND(1.0)	ND(10)	ND(.0025)	**0.015**[7]	ND(.0025)	ND(.0025)
	10.5 ft[6]	ND(1.0)	ND(1.0)	**19**	ND(.0025)	**0.025**	0.0028	ND(.0025)
MW-2	5.5 ft[4,5,6]	ND(1.0)	ND(1.0)	**13**	ND(.0025)	**0.039**	ND(.0025)	ND(.0025)
	10.5 ft[6]	ND(1.0)	ND(1.0)	ND(10)	ND(.0025)	**0.063**	ND(.0025)	ND(.0025)
MW-3	3.0 ft[3,4,5,6]	**20**	**8.4**	**14**	ND(.0025)	**0.064**	**0.120**	ND(.0025)
	8.0 ft[3,6]	**1.3**	**13**	**68**	ND(.0025)	**0.086**	ND(.0025)	ND(.0025)
	14.0 ft[6]	ND(1.0)	ND(1.0)	ND(10)	ND(.0025)	**0.033**	ND(.0025)	ND(.0025)
	WKA Site Assessment - 11/29/90							
B-1	2.5 ft	**0.59**	ND(10)	ND(10)	ND(.005)	ND(.005)	**0.0087**	ND(.005)
	4.5 ft	ND(0.5)	ND(10)	**110**	ND(.005)	ND(.005)	**0.011**	ND(.005)
B-2	2.5 ft	**0.54**	ND(10)	ND(10)	ND(.005)	ND(.005)	ND(.005)	ND(.005)
	4.5 ft	**1.1**	ND(10)	ND(10)	ND(.005)	ND(.005)	ND(.005)	ND(.005)
B-3	2.5 ft	ND(0.5)	ND(10)	ND(10)	ND(.005)	ND(.005)	**0.0075**	ND(.005)
	4.5 ft	ND(0.5)	ND(10)	ND(10)	ND(.005)	ND(.005)	ND(.005)	ND(.005)
B-4	3.5 ft	ND(0.5)	ND(10)	ND(10)	ND(.005)	ND(.005)	**0.0072**	ND(.005)
B-5	3.5 ft	ND(0.5)	**150**	300	ND(.005)	**0.008**	ND(.005)	ND(.005)
B-6	3.5 ft	ND(0.5)	ND(10)	**16**	ND(.005)	ND(.005)	ND(.005)	ND(.005)
	Stockpiled Soil Samples - 12/12/90 & 01/14/91							
1A-D	--	--	**200**	**1,000**	--	--	--	--
2A-D[8]	--	ND(0.5)	ND(100)	**4,200**	ND(.005)	ND(.005)	ND(.005)	ND(.005)

1 - Not analyzed.
2 - Not detected above the concentration expressed in the parentheses.
3 - This sample analyzed for volatile organic compounds. No VOCs detected.
4 - This sample analyzed for semi-volatile compounds. No SVOCs detected.
5 - This sample was analyzed for heavy metals. All levels were below action levels.
6 - This sample was analyzed for total oil and grease (petroleum based). No TOG detected.
7 - Extremely low levels of toluene (with no other BTXE constituents) in soil samples indicates that tape with toluene-containing adhesive (such as duct tape or black electrical tape) was used to wrap the samples.

[8] - This sample was also analyzed for halogenated volatile organics (chlorinated hydrocarbons), organochlorine pesticides, PCBs, heavy metals, and aquatic toxicity. All results were either below detection levels or below regulatory action levels.

The highest levels of petroleum hydrocarbons encountered in subsurface soils were found in the stockpiled soil samples (1A-D and 2A-D). These samples contained high levels of motor oil and low levels of diesel. No other hydrocarbon compound or significant levels of heavy metals were encountered. The only other sample which contained levels of petroleum hydrocarbons above 100 ppm (the action level recommended in the *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, August 10, 1990) was the sample taken at 3.5 feet deep in the WKA B5 boring. This boring was located directly adjacent to the west side of the backfilled UST excavation (see Figure 4). Soil samples from the HLA well boring MW-3, which was located close to the B5 boring, contained low levels of petroleum hydrocarbons. Thus, it appears that the high petroleum hydrocarbons found in B5 are localized.

4.2 Extent of Ground Water Pollution

A summary of ground water analytical results is contained in Table 3.

Table 3
SUMMARY OF GROUND WATER ANALYTICAL RESULTS

Sample ID	*Sample Depth*	*Concentration (ppm)*						
		TPH-G	*TPH-D*	*TPH-MO*	*B*	*T*	*X*	*E*
UST Removal Samples - 03/02/90								
W1	?	--[1]	12.00	14.00	--	--	--	--
HLA Remedial Investigation - 11/05/90								
MW-1[2]	5 ft	ND(.05)[3]	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
MW-2	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
MW-3	5 ft	0.440	1.40	2.40	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
First Quarterly Sampling of WKA Wells - 12/7/90								
B-1	5.57 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-2	5.32 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-3	5.21 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
Second Quarterly Sampling of WKA Wells - 04/05/91								
B-1	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-2	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)

Table 3
SUMMARY OF GROUND WATER ANALYTICAL RESULTS

Sample ID	*Sample Depth*	*Concentration (ppm)*						
		TPH-G	*TPH-D*	*TPH-MO*	*B*	*T*	*X*	*E*
B-3	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
	Third Quarterly Sampling of WKA Wells - 07/22/91							
B-1	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-2	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-3	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
	Fourth Quarterly Sampling of WKA Wells - 10/10/91							
B-1	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-2	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)
B-3	5 ft	ND(.05)	ND(.05)	ND(.5)	ND(.0005)	ND(.0005)	ND(.0005)	ND(.0005)

1 - Not analyzed.
2 - Ground water samples from all three wells were also analyzed for volatile and semi-volatile organic compounds, oil and grease, and heavy metals. The MW-3 sample contained 0.0077 ppm of 1,1 Dichloroethane (detection limit = 0.0047 ppm). The HLA report indicates that all other constituents in all samples were either below the detection limits or below action levels.
3 - Not detected above the concentration expressed in the parentheses.

High levels of diesel and motor oil were found in the water sample taken from the UST pit after UST removal. However, according to Jay Groh, formerly of Scott Co., a small amount of product was released into the pit while pulling one of the USTs (he didn't recall which tank). Although Mr. Groh indicated that the product was pumped into a drum for offsite disposal, it is probable that some of the product dissolved in the pit water before removal.

The HLA well MW-3, which was located directly adjacent to the west side of the backfilled UST cavity, was sampled on November 5, 1990. This sample contained low levels of gasoline, diesel, and motor oil. These low levels could have resulted from slight contamination of ground water which occurred during the UST removal, approximately eight months before.

The HLA report states that on November 27, 1990, the well MW-3 contained one inch of free product, probably diesel, floating on ground water. However, the HLA wells were destroyed before this result could be verified by re-checking the well; and the other downgradient monitoring well (the WKA B1 well) reported no detectable hydrocarbons over four quarters.

The three WKA wells were sampled quarterly for one year and contained no detectable petroleum hydrocarbon constituents. The well B1 was located less than ten feet northwest from the backfilled UST cavity. A gradient map generated from data contained in the WKA report indicates that this well is downgradient from the UST cavity (see Figure 5). Based on these results, it does not appear that the two USTs impacted ground water quality in a downgradient direction.

5.0 LOCAL AND REGIONAL HYDROLOGY

The project site is located on the East Bay Plain, which consists of interbedded clays, silts, and sands. Regional ground water flow in shallow, unconfined aquifers is toward San Francisco Bay, which is located approximately 1,000 feet west from the project site.

Boring logs contained in the WKA report indicate that soils beneath the project site generally consist of: (1) A concrete/aggregate base which extends from the surface down to a depth of one to two feet below grade; and (2) Brown to grey silts and sands extending down to total boring depth. The B5 boring, located just west from the backfilled UST cavity, encountered grey-brown sandy gravel down to a total boring depth of four feet below grade.

Shallow ground water beneath the site is found at a depth of approximately five feet below grade. A gradient map generated from data contained in the WKA report indicates that ground water flow is towards the northwest. Based on it's location close to San Francisco Bay, it is likely that shallow ground water is influenced by tidal effects.

6.0 BENEFICIAL USES

The Basin Plan for the San Francisco Bay currently defines the aquifers in Alameda County to be suitable for municipal supply, industrial supply, and agricultural uses. However, due to the proximity of the project site to San Francisco Bay and the brackish nature of the ground water in the area, we believe that ground water in this area has no beneficial uses other than eventual discharge to surface water.

7.0 RECOMMENDATION

We believe that Alameda County and the San Francisco Bay Regional Water Quality Control Board should grant "no further action" status for the 6202 Christie Street site based on the following determinations:

- Laboratory results indicate that the impact of hydrocarbon releases on surrounding soils is limited to soils immediately surrounding the two USTs. Based on results of the soil stockpile samples and the UST pit samples, it appears that most of the hydrocarbon-laden soil has been removed to offsite disposal.

- Four consecutive quarters of ground water sampling have demonstrated that no degradation of ground water quality has resulted from operation of the USTs.

- Ground water in the subject area has no beneficial uses, other than eventual discharge to surface water. We do not believe a surface discharge of ground water from the 6202 Christie Avenue site is realistic because the closest surface discharge from the project site is located approximately 1,000 feet west.

APPENDIX A

REFERENCES

REFERENCES

1. Harding Lawson Associates, *Preliminary Results of Investigation and Opinion of Potential Remedial Costs, 6202 Christie Avenue (Vanco Property), Emeryville, California*, January 24, 1991.

2. Kaldveer Associates Geoscience Consultants, *Preliminary Environmental Assessment For 6202/6150 Christie Street, Emeryville, California*, January 3, 1990.

3. Staff of North Coast, San Francisco Bay, and Central Valley Regional Water Quality Control Boards, *Tri-Regional Board Staff Recommendations for Preliminary Evaluation and Investigation of Underground Tank Sites*, August 10, 1990

4. State Water Resources Control Board, *LUFT Field Manual*, October 18, 1989.

5. Wallace-Kuhl & Associates, Inc., *Environmental Site Evaluation, King Knight Property, 6202 Christie Avenue, Emeryville, California*, February 12, 1991.

6. WEST, *Report of Analytical Results, March 6, 1990*, (WEST Sample Log No. 1359).

7. WEST, *Report of Analytical Results, December 14, 1990*, (WEST Sample Log No. 2101).

8. WEST, *Report of Analytical Results, January 14, 1991*, (WEST Sample Log No. 2199).

9. WEST, *Report of Analytical Results, April 8, 1991*, (WEST Sample Log No. 2419).

10. WEST, *Report of Analytical Results, July 25, 1991*, (WEST Sample Log No. 2844).

11. WEST, *Report of Analytical Results, October 17, 1991*, (WEST Sample Log No. 3324).

APPENDIX B

UST REMOVAL DOCUMENTATION

SCOTT CO.
MECHANICAL CONTRACTORS
1919 Market Street
P.O. Box 12954
Oakland, California 94604
(415) 834-2333

Contractors License No. 184480

February 14, 1991

Alameda County Health Department
80 Swan Way
Oakland, California 94621

Attention: Dennis Byrne

Gentlemen:

Please find attached paper work concerning 6202 Christy Avenue, Emeryville, California.

Permits, manifests, sample analysis and certificates of disposal are included. Sample analysis of stockpiled soil for incineration is also included. These stockpiled soils have been proved non-hazardous and will be removed before March 1, 1991. Paper work concerning disposal will follow.

The paper work for site evaluation is also attached. During this investigation the water table showed no impact from petroleum related products. Soil samples were well below the 1000 p.p.m. range. The tanks had been pumped and abandoned in September of 1986, prior to removal. During the ensuing time, contamination has not spread to the extremely high water table.

We ask that the water wells be abandoned and the site closed, with no further action required.

Should you have any questions regarding this site, please contact me at 834-2333, extension 3379.

Very truly yours,

SCOTT CO. OF CALIFORNIA

Jay Groh
Environmental Estimator

JG:jj

Attachments

91 FEB 19 PM 1:05

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY
DEPARTMENT OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
80 SWAN WAY, ROOM 200
OAKLAND, CA 94621
PHONE NO. 415/271-4320

ACCEPTED
DEPARTMENT OF ENVIRONMENTAL HEALTH
470 - 27th Street, Third Floor
Oakland, CA 94612
Telephone: (415) 874-7237

These plans have been reviewed and found to be acceptable and essentially meet the requirements of State and local health laws. Changes to your plans indicated by this Department are to assure compliance with State and local laws. The project proposed herein is now released for issuance of any required building permits for construction. One copy of these accepted plans must be on the job and available to all contractors and craftsmen involved with the removal.

Any changes or alterations of these plans and specifications must be submitted to this Department and to the Fire and Building Inspection Department to determine if such changes meet the requirements of State and local laws. Notify this Department at least 48 hours prior to the following required inspections:

3-1-90 Removal of Tank and Piping
Sampling
Final Inspection

Issuance of a permit to operate is dependent on compliance with accepted plans and all applicable laws.

1/26/90 DJR

Diesel: 1.9% O_2 / -20% LEL removal, readings + soil + water samples witnessed by Larry Warren EFD. 3-1-90, 1400 hours

NOTE: Soil + water samples to be taken 3-2-90, as per telephone conversation between contractor & County Health Dept.

UNDERGROUND TANK CLOSURE/MODIFICATION PLANS

1. **Business Name** King-Knight Company
   Business Owner Ivan Williams
2. **Site Address** 6202 Christie Road
   City Emeryville **Zip** 94608 **Phone** (415)398-6700
3. **Mailing Address** 10 Crest Road
   City San Anselmo **Zip** 94960 **Phone** (415)398-6700
4. **Land Owner** King-Knight Company
   Address 10 Crest Road **City, State** San Anselmo,CA **Zip** 94960
5. **EPA I.D. No.** CAC-000242681
6. **Contractor** Scott Company of California
   Address 1919 Market Street
   City Oakland,CA. 94607 **Phone** (415)834-2333
   License Type A-Gen.Eng. **ID#** 184480
7. **Consultant** N/A
   Address N/A
   City N/A **Phone** N/A

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6:16	x 415 315432	G3-R	1/08	01	OK
6:45	916 373 1172	G3-S	0/43	01	OK
7:17	4082270106	G3-S	1/46	02	OK
7:20		G3-S	2/50	06	OK
7:52	ARCO SAN MATEO	G3-S	0/38	01	OK
7:59	4158741618	G3-S	1/26	02	OK
8:13	SCOTT-BROADWAY	QM-R	1/38	03	OK
8:19	4152316145	G3-S	1/18	02	OK
8:29		G3-R	2/38	04	OK
8:45	SPECIA 315 432 3099	G3-S	1/05	02	OK
9:07		G3-R	2/32	03	OK
9:20	408 6290783 4089	G3-R	1/09	02	OK
9:39		---R	0/54	00	INC
9:56	ARCO SAN MATEO	G3-R	1/00	02	OK
9:59	415 928 8560	G3-S	0/58	02	OK

c/o CHRISTINA LOPEZ

VAPORS REMOVED BY:

[X] WATER WASH

[X] VAPOR FREEING (CO^2) - Dry Ice

[ ] VENTILATION

STOCKPILES WILL BE COVERED? YES ____ NO ____

ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW)

(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME Scott Co. of California CONTACT Jav Groh

ADDRESS 1919 Market Street PHONE (415) 834-2333

CITY, STATE, ZIP Oakland, California 94607

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME N/A CONTACT N/A

ADDRESS PHONE ( )

CITY, STATE, ZIP

FOR OFFICE USE ONLY

DATE RECEIVED BY (INIT.)

CC: INSPECTOR NO. DATE BY (INIT.)

TELEPHONE UPDATE: CALLER CHANGE MADE

BAAQMD N #

3/89

MECHANICAL CONTRACTORS
1919 Market Street
P.O. Box 12954
Oakland, California 94604
(415) 834-2333

Contractors License No. 184480

SAFETY PLAN
TANK REMOVAL AT 6260 CHRISTIE ROAD
EMERYVILLE, CALIFORNIA 94608

General Contractor: Scott Co. of California
1919 Market Street
Oakland, California 94607

Project Manager: Jay Groh

On Site Coordinator: Bill McCarthy

Mr. McCarthy will have in his possession two A:B:C: rated fire extinguishers and Type C protective clothing. Also, he will have a first aid kit and telephone numbers of all emergency personnel. He will have respirators, which will be at everyone's disposal.

The explosive meter that can detect the level of oxygen and hydrocarbon will be supplied by the contractor and operated by Mr. McCarthy. After the tank has been triple rinsed, dry ice will be applied to 15% of the tank's volume.

If any questions should arise in reference to this safety plan, please contact Jay Groh at (415) 834-2333, extension 3379.

JG:jj
safety.pln

ENVIRONMENTAL SERVICES
(DIVISION OF H&H SHIP SERVICE CO., INC.)

220 CHINA BASIN, SAN FRANCISCO, CA 94107 • DAY AND NIGHT: 543-4835

CERTIFICATE OF DISPOSAL

MARCH 6, 1990

H & H Ship Service Company hereby certifies to *SCOTT COMPANY* that:

1. The storage tank(s), size(s) *1-1,000 GALS. AND 1-550 GALS.*

   removed from the *FELIX*

   facility at *6202 CHRISTIE ROAD*

   EMERYVILLE, CALIFORNIA

   were transported to H & H Ship Service Company, 220 China Basin St. San Francisco, California 94107.

2. The following tank(s), H & H Job Number *3662*

   have been steamed cleaned, cut with approximately 2' X 2' holes rendered harmless and disposed of as scrap metal.

3. Disposal site: *LEVIN METALS CORPORATION, RICHMOND, CALIFORNIA.*

4. The foregoing method of destruction/disposal is suitable for th materials involved, and fully complies with all applicable regulatory and permit requirements.

5. Should you require further information, please call (415) 543-4835.

Very Truly Yours,

Cleveland Valrey
Operations Coordinator

RECEIVED
MAR 19 1990
SCOTT-BROADWAY

FIRE MARSHALL

EMERYVILLE FIRE DEPARTMENT
FIRE PREVENTION BUREAU
6303 HOLLIS STREET
EMERYVILLE, CA 94608
~~655-7400~~
596-3759

CITY OF EMERYVILLE

FIRE CODE PERMIT

No 1133

PERMISSION IS HEREBY GRANTED Scott Company

TO OPERATE / MAINTAIN / STORE Remove 2 UG tanks

ON PREMISES LOCATED AT 6202 Christie Avenue

PERIODIC INSPECTIONS ARE A CONDITION OF THIS PERMIT WHICH IS ISSUED IN ACCORDANCE WITH UNIFORM FIRE CODE, AS SPECIFIED IN SECTION 4.108 OF SAID CODE.

ADDITION REQUIREMENTS EFD requires 24-hr notice prior to removal
compliance w/ Alameda County Environ.Health req'ts

ENG. CO. DISTRICT # 6 EXPIRATION DATE: -NA-

THIS PERMIT MUST BE POSTED WITH BUSINESS LICENSE

PERMIT APPROVED BY

George Warren 2-8-90

FIRE MARSHAL DATE

APPLICATION FOR PERMIT TO OPERATE, MAINTAIN OR STORE

Make check payable to: CITY OF EMERYVILLE

Mail to: Emeryville Fire Department
Fire Prevention Bureau
6303 Hollis Street
Emeryville, CA 94608

PHONE: 655-7678

F.P.B. Permit No. _____

Due Date: _____

Original X

Renewal _____

To: ~~operate~~ ~~maintain~~ ~~store~~ Remove 2 UG tanks ☐ Specify use if Public Assembly

Pursuant to Section 4.108 of uniform Fire Code 1988 edition

Application made by: Scott Co. of California

Location: site: 6202 Christie

Signed M. Schweikert-Gary Applicant Phone # (415)834-2333

Date: 02/07/90

Fee: $40.00 p/tank

Cash ____ Ck. No. ____

Receipt No. ____

Received by: ____

DO NOT WRITE BELOW THIS LINE

Plans submitted? _____ Checked by: _____

Occupancy Group? _____ (GROUP-TYPE AND AREA)

Floor to be Used: _____ Ar

BUILDING: Height _____ Stor

Location-Exterior Wall Ope

Is there 20 sq. ft. of Openin

Distance from Property Lin

EXITS: Number? _____ To

Number of Exits from Haz

Do Doors Swing Out? ____

Number of Stairways? ____

Exterior Stairway or Fire Es

SHEARSON LEHMAN BROTHERS

STEVEN D SANDKOHL
MARY E SANDKOHL
7014 EXETER DR
OAKLAND CA 94611

0189

5-123
110

2/8 19 90

Pay to the Order of City of Emeryville $ 80-

Eighty and no/100 Dollars

FINANCIAL MANAGEMENT ACCOUNT℠

Boston Safe Deposit and Trust Company
One Boston Place, Boston, MA 02106

613

T D ☐ For _____

⑆011001234⑆ 12003716 13⑈ 0189

FIRE PROTECTION: Standpipes: Wet: _____

Number and Type of Extinguishers? _____

Other Fire Protection? _____

Is Flameproofing Required? _____ Is it Satisfactory? _____

DATE OF INSPECTION: _____

REMARKS: 1,000 & 550-gallon UG gasoline tanks/EFD requires 24-hr notice prior to removal of tanks/see attached letter from Calif. State License Board

Signed George Warren FIRE INSPECTOR No. _____

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C A C 0 0 0 2 4 2 6 8 1 — Manifest Document No. 0 0 0 0 1 — 2. Page 1 of 1 — Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
KING KNIGHT CO.
10 Crest Road, San Anselmo, CA 94960
4. Generator's Phone (415) 398-6700

A. State Manifest Document Number: 90008161
B. State Generator's ID:

5. Transporter 1 Company Name: H & H Ship Service Company
6. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
C. State Transporter's ID: 100941
D. Transporter's Phone: (415) 543-4835

7. Transporter 2 Company Name:
8. US EPA ID Number:
E. State Transporter's ID:
F. Transporter's Phone:

9. Designated Facility Name and Site Address
H & H Ship Service Company
220 China Basin Street
San Francisco, CA 94107
10. US EPA ID Number: C A D 0 0 4 7 7 1 1 6 8
G. State Facility's ID: C A D 0 0 4 7 7 1 1 6 8
H. Facility's Phone: (415) 543-4835

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. RESIDUE FUEL OIL TANK (CALIFORNIA ONLY REGULATED WASTE)	0 0 1	T P	0 1 0 0 0	P	State 512 / EPA/Other
b. RESIDUEWASTE OIL TANK (CALIFORNIA ONLY REGULATED WASTE)	0 0 1	T P	0 0 5 5 0	P	State 512 / EPA/Other
c.					State / EPA/Other
d.					State / EPA/Other

J. Additional Descriptions for Materials Listed Above
PUMPED OUT 1,000 gallon and 550 gallon tanks last containing WASTE OILand fuel oil. Tanks inerted with dry ice for transport.

K. Handling Codes for Wastes Listed Above
a. 01 b. 01 c. d.

15. Special Handling Instructions and Additional Information
JOB SITE: FELIX
6202 Christie Road
Emeryville, California
APPROPRIATE PROTECTIVE CLOTHING AND RESPIRATOR.

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR — Printed/Typed Name: RAYMOND ROSSA AS REP FOR FELIX — Signature: RAYMOND Rossa as rep for Felix — Month 0 3 Day 0 1 Year 9 0

TRANSPORTER
17. Transporter 1 Acknowledgement of Receipt of Materials — Printed/Typed Name: FRED MOGAN JR. — Signature: fred Mogan Jr — Month 0 3 Day 0 1 Year 9 0
18. Transporter 2 Acknowledgement of Receipt of Materials — Printed/Typed Name: — Signature: — Month Day Year

FACILITY
19. Discrepancy Indication Space

RECEIVED
MAR 19 1990
S.F. BAY REGION

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19 — Printed/Typed Name: [illegible] — Signature: [illegible] — Month 0 3 Day 3 0 Year 9 0

Do Not Write Below This Line

DHS 8022 A (1/88)
EPA 8700—22
(Rev. 9-88) Previous editions are obsolete

White: TSDF SENDS THIS COPY TO DOHS WITHIN 30 DAYS
To: P.O. Box 3000, Sacramento, CA 95812

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF AN EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800 424-8802; WITHIN CALIFORNIA CALL 1-800 852-7550

CERTIFICATE OF REMEDIATION
OF HYDROCARBON CONTAMINATED SOILS

SUPPLIER:	GENERATOR:
Scott Company	Felix King Knight Company
1919 Market Street	6202 Christie
Oakland, Ca. 94607	Emeryville, Ca.

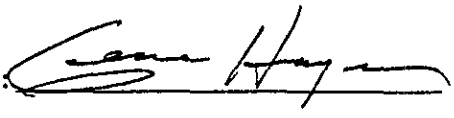
CERTIFICATE #: S02221-2 JOB #: 91 - 9913

In accordance with Title 22 CDOHS, REMCO has excepted and has caused 37.605 tons of H.C. soil to be recycled under the guidelines of federal, state, and local laws and regulations. The H.C. soil was received 2 / 26 /1991. In receiving and processing the H.C. soil and in providing this certificate, REMCO has relied upon and is relying upon (a) the representation of the generator that the H.C. soil does not contain any materials classified as, and is not classified as "Hazardous Waste" under the applicable provisions of federal and California law and has been managed and may be treated as other than Hazardous Waste, and (b) the generator has independent written certifications from applicable governmental agencies of certified independent testing laboratories that the H.C. soil does not contain any materials classified as, and is not classified as, "Hazardous Waste" under said applicable law.

REMCO shall indemnify, defend and hold harmless the generator from and against any enforcement actions by any governmental authority in the event that any of the representations by REMCO set forth in this certificate are materially inaccurate. Provided however that this indemnity shall be limited to a maximum of the amount paid to REMCO by the generator for processing this H.C. soil.

R E M C O

Recycling for the future
2717 Goodrick Ave.
Richmond, Ca 94804
(415) 237-5866

By: 

Gene Haynes,
Vice President

Date: 3 / 28 / 91

APPENDIX C

LABORATORY DATA REPORTS AND CHAIN-OF-CUSTODY RECORDS

March 6, 1990
Sample Log 1359

Jay Groh
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 1 Water and 3 Soil Samples
Identified as: 6202 Christie, Emeryville, CA
Received: March 2, 1990
Purchase Order: 50773-56959-18-7001

Dear Mr. Groh:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on March 6, 1990 and describes procedures used to analyze the samples.

Samples were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"TPH as Diesel/Oil" (Modified EPA Method 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Submitted by:

Stewart Podolsky
Project Chemist

Approved by:

Robert G. Smith, Ph.D.
Laboratory Director

Western Environmental
Science & Technology
1046 Oliva Drive, Suite 3
Davis, CA 95616
916 753-9500

March 6, 1990
Sample Log 1359

Table 1: TPH Results for 3 Soil Sample(s) Identified as
6202 Christie, Emeryville, CA
Received March 2, 1990

--all concentrations are units of mg/kg--

Sample	TPH (extractable)
3-2-N1	<10
3-2-S2	<10
3-2-E3	21 Oil
(Reporting Limit	10)

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

March 6, 1990
Sample Log 1359

Sample: 3-2-W5

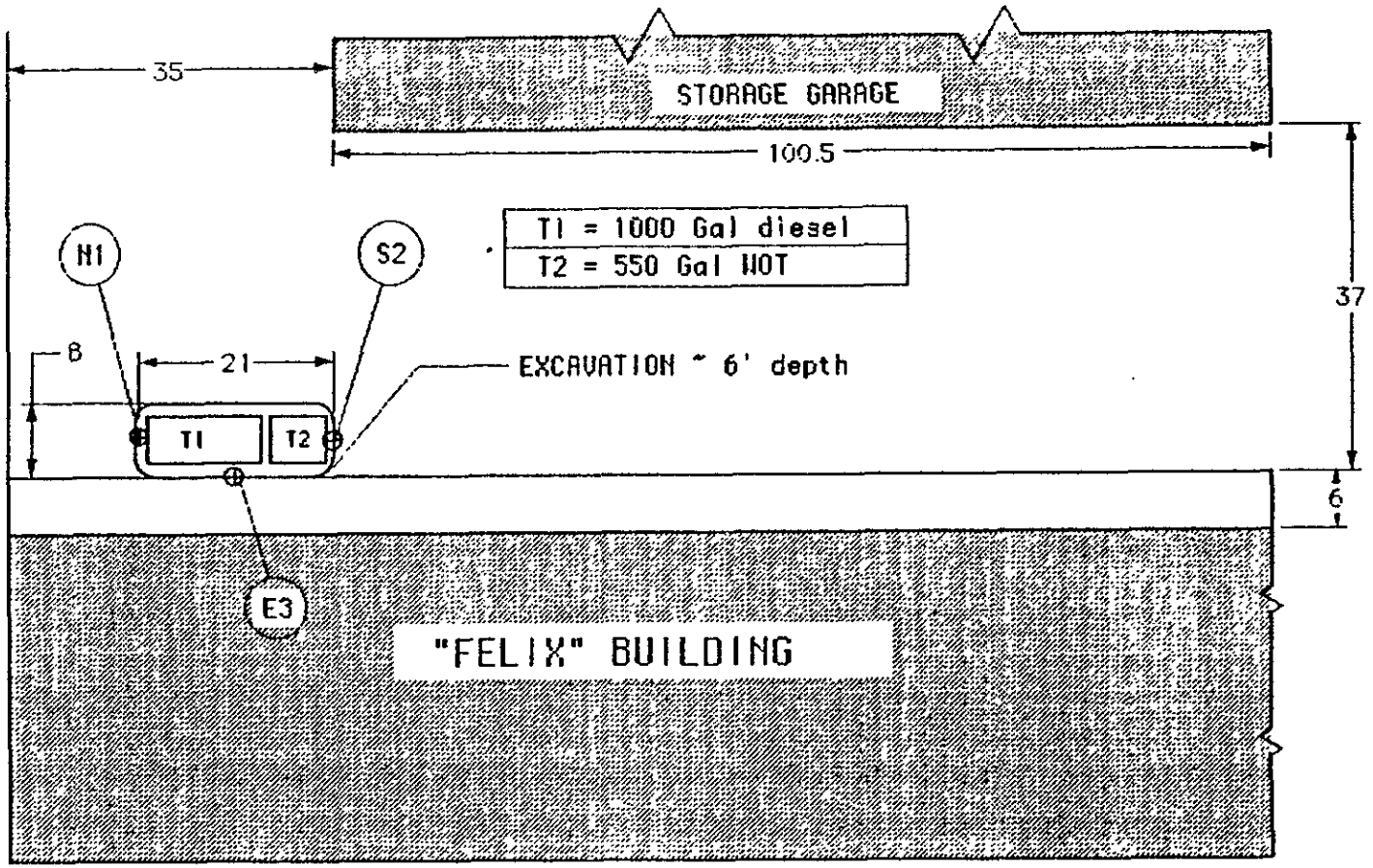
From : 6202 Christie, Emeryville, CA
Received : March 2, 1990
Matrix : Water

--all concentrations are units of ug/L--

Parameter	Measured Value
Extractable TPH	Dies:12000 Oil:14000

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

SCOTT CO. EXCAVATION SOIL SAMPLING	6202 CHRISTIE AVE. EMERYVILLE, CA.	3/2/90



TITLE: SCOTT CO. SOIL SAMPLING	DRAWING I.D.: 1.0	WESTERN ENVIRONMENTAL SCIENCE AND TECHNOLOGY
CLIENT: SCOTT CO.	DATE: 3/7/90	1046 Olive Dr. Suite 3, Davis CA. 95616
PROJECT: "FELIX" TANK EXCAVATION SITE	SCALE: 1"= 20'	(916) 753-9500 Grapics: Arthur H. Muir

WEST
Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: JAY GROH - or michael
Phone #: 415-834-2333 ext 3380
Address: 1919 Market St Oakland CA.
FAX #:
Project Number: PO # 50773-56959-18-7001
Project Name: "FELIX"
Project Location: 6202 Christie Emeryville
Sampler Signature: Arthur Muir

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
3-2-W5		3	40ml	X							1			3-2-90	12:20
3-2-W4		1	1L	X							1			"	12:26
3-2-S1		1			1						1			"	12:40
3-2-S2		1			1						1			"	12:46
3-2-S3		1			1						1			"	12:56

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270) & OIL	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
		1															
		1															
		1															
		1															
		1															

OTHER

SPECIAL HANDLING

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
	1			
	1			
	1			
	1			
	1			

Relinquished by:	Date	Time	Received by:
Arthur Muir	3-2-90		
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	3/2/90		

Remarks: 48 hour TAT

January 2, 1991
Sample Log 2048

Eric Hubbard
Wallace-Kuhl Associates
P.O. Box 1137
West Sacramento, CA 95691

Subject: Analytical Results for 9 Soil Sample(s)
Identified as: Project # 1301.01 ("Felix")
Received: 11/30/90

Dear Mr. Hubbard:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on January 2, 1991 and describes procedures used to analyze the samples.

Sample(s) were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 8020/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)
"Metals by Atomic Absorption" (EPA Method 7000)
"Semi-Volatile Organic Priority Pollutants" (EPA Method 8270)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky
Senior Chemist

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

January 2, 1991
Sample Log 2048

Table 1: 'BTEX' Results for 8 Soil Sample(s) Identified as
Project # 1301.01 ("Felix")
Received 11/30/90

--all concentrations are units of mg/kg--

Sample	Benzene	Toluene	Ethylbenzene	Xylenes
B1-1I	<.005	<.005	<.005	.0087
B1-2I	<.005	<.005	<.005	.011
B2-1I	<.005	<.005	<.005	<.005
B2-2I	<.005	<.005	<.005	<.005
B3-1I	<.005	<.005	<.005	.0075
B3-2I	<.005	<.005	<.005	<.005
B4-1II	<.005	<.005	<.005	.0072
B5-1I	<.005	.0080	<.005	<.005
(Reporting Limit	.005	.005	.005	.005)

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

January 2, 1991
Sample Log 2048

Table 2: TPH Results for 8 Soil Sample(s)
From : Project # 1301.01 ("Felix")
Received 11/30/90

--all concentrations are units of mg/kg--

Sample	TPH as Gasoline	TPH (Semi-Volatile)
B1-1I	.59	Diesel : <10 Motor Oil : <10
B1-2I	<.5	Diesel : <10 Motor Oil : 110
B2-1I	.54	Diesel : <10 Motor Oil : <10
B2-2I	1.1	Diesel : <10 Motor Oil : <10
B3-1I	<.5	Diesel : <10 Motor Oil : <10
B3-2I	<.5	Diesel : <10 Motor Oil : <10
B4-1II	<.5	Diesel : <10 Motor Oil : <10
B5-1I	<.5	Diesel : 150 Motor Oil : 300
(Reporting Limit	.5	10)

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

January 2, 1991
Sample Log 2048

Sample: B5-1I

From : Project # 1301.01 ("Felix")
Received 11/30/90
Matrix : Soil

--all concentrations are units of mg/kg--

8270 - Semi Volatile Organic Priority Pollutants

Parameter /	(Reporting Limit)	Measured Value
Acenaphthene	(0.30)	<0.30
Acenaphthalene	(0.30)	<0.30
Anthracene	(0.30)	<0.30
Benzo (a) anthracene	(0.30)	<0.30
Benzo (b) fluoranthene	(0.30)	<0.30
Benzo (k) fluoranthene	(0.30)	<0.30
Benzo (a) pyrene	(0.30)	<0.30
Benzo (ghi) perylene	(0.30)	<0.30
Benzyl butyl phthalate	(0.30)	<0.30
bis (2-chloroethyl) ether	(0.30)	<0.30
bis (2-chloroethoxy) methane.	(0.30)	<0.30
bis (2-ethylhexyl) phthalate	(0.30)	<0.30
bis (2-chloroisopropyl) ether	(0.30)	<0.30
4-Bromophenyl phenyl ether	(0.30)	<0.30
2-Chloronaphthalene	(0.30)	<0.30
4-Chlorophenyl phenyl ether	(0.30)	<0.30
Chrysene	(0.30)	<0.30
Dibenzo (ah) anthracene	(0.30)	<0.30
Di-n-butyl phthalate	(0.30)	<0.30
Di-n-octyl phthalate	(0.30)	<0.30
1,3-Dichlorobenzene	(0.30)	<0.30
1,2-Dichlorobenzene	(0.30)	<0.30
1,4-Dichlorobenzene	(0.30)	<0.30
3,3-Dichlorobenzidine	(3.0)	< 3.0
Diethyl phthalate	(0.30)	<0.30
Dimethyl phthalate	(0.30)	<0.30
2,4-Dinitrotoluene	(0.30)	<0.30

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

January 2, 1991
Sample Log 2048

Sample: B5-1I

From : Project # 1301.01 ("Felix")
Received 11/30/90
Matrix : Soil

--all concentrations are units of mg/kg--

8270 - Semi Volatile Organic Priority Pollutants

Parameter /	(Reporting Limit)	Measured Value
2,6-Dinitrotoluene	(0.30)	<0.30
Fluoranthene	(0.30)	<0.30
Fluorene	(0.30)	<0.30
Hexachlorobenzene	(0.30)	<0.30
Hexachlorobutadiene	(0.30)	<0.30
Hexachloroethane	(0.30)	<0.30
Indeno (123-cd) pyrene	(0.30)	<0.30
Isophorone	(0.30)	<0.30
Naphthalene	(0.30)	<0.30
Nitrobenzene	(0.30)	<0.30
n-Nitrosodi-n-propylamine	(0.30)	<0.30
Phenanthrene	(0.30)	<0.30
Pyrene	(0.30)	<0.30
1,2,4-Trichlorobenzene	(0.30)	<0.30
Benzidine	(3.0)	< 3.0
Hexachlorocyclopentadiene	(0.30)	<0.30
n-Nitrosodimethylamine	(0.30)	<0.30
n-Nitrosodiphenylamine	(0.30)	<0.30
4-Chloro-3-methylphenol	(0.30)	<0.30
2-Chlorophenol	(0.30)	<0.30
2,4-Dichlorophenol	(0.30)	<0.30
2,4-Dimethylphenol	(0.30)	<0.30
2,4-Dinitrophenol	(0.30)	<0.30
2-Methyl-4,6-dinitrophenol	(0.30)	<0.30
2-Nitrophenol	(0.30)	<0.30
4-Nitrophenol	(0.30)	<0.30
Pentachlorophenol	(0.30)	<0.30
Phenol	(0.30)	<0.30
2,4,6-Trichlorophenol		

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
(916 753-9500

January 2, 1991
Sample Log 2048

Sample: B6-1I

From : Project # 1301.01 ("Felix")
Received : 11/30/90
Matrix : Soil

--all concentrations are units of mg/kg--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.005)	<.005
Toluene	(.005)	<.005
Ethylbenzene	(.005)	<.005
Total Xylenes	(.005)	<.005
TPH as Gasoline	(.5)	<.5
Extractable TPH	(10)	Diesel : <10 Motor Oil : 16
Cadmium	(0.5)	.20
Chromium	(1.0)	54
Lead	(5.0)	<5
Zinc	(0.5)	62
Nickel	(1.0)	23

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
(916) 753-9500

January 2, 1991
Sample Log 2048

Sample: B6-1I

From : Project # 1301.01 ("Felix")
Received 11/30/90
Matrix : Soil

--all concentrations are units of mg/kg--

8270 - Semi Volatile Organic Priority Pollutants

Parameter /	(Reporting Limit)	Measured Value
Acenaphthene	(0.30)	<0.30
Acenaphthalene	(0.30)	<0.30
Anthracene	(0.30)	<0.30
Benzo (a) anthracene	(0.30)	<0.30
Benzo (b) fluoranthene	(0.30)	<0.30
Benzo (k) fluoranthene	(0.30)	<0.30
Benzo (a) pyrene	(0.30)	<0.30
Benzo (ghi) perylene	(0.30)	<0.30
Benzyl butyl phthalate	(0.30)	<0.30
bis (2-chloroethyl) ether	(0.30)	<0.30
bis (2-chloroethoxy) methane	(0.30)	<0.30
bis (2-ethylhexyl) phthalate	(0.30)	<0.30
bis (2-chloroisopropyl) ether	(0.30)	<0.30
4-Bromophenyl phenyl ether	(0.30)	<0.30
2-Chloronaphthalene	(0.30)	<0.30
4-Chlorophenyl phenyl ether	(0.30)	<0.30
Chrysene	(0.30)	<0.30
Dibenzo (ah) anthracene	(0.30)	<0.30
Di-n-butyl phthalate	(0.30)	<0.30
Di-n-octyl phthalate	(0.30)	<0.30
1,3-Dichlorobenzene	(0.30)	<0.30
1,2-Dichlorobenzene	(0.30)	<0.30
1,4-Dichlorobenzene	(0.30)	<0.30
3,3-Dichlorobenzidine	(3.0)	< 3.0
Diethyl phthalate	(0.30)	<0.30
Dimethyl phthalate	(0.30)	<0.30
2,4-Dinitrotoluene	(0.30)	<0.30

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Received 11/30/90
Matrix : Soil

--all concentrations are units of mg/kg--

8270 - Semi Volatile Organic Priority Pollutants

Parameter /	(Reporting Limit)	Measured Value
2,6-Dinitrotoluene	(0.30)	<0.30
Fluoranthene	(0.30)	<0.30
Fluorene	(0.30)	<0.30
Hexachlorobenzene	(0.30)	<0.30
Hexachlorobutadiene	(0.30)	<0.30
Hexachloroethane	(0.30)	<0.30
Indeno (123-cd) pyrene	(0.30)	<0.30
Isophorone	(0.30)	<0.30
Naphthalene	(0.30)	<0.30
Nitrobenzene	(0.30)	<0.30
n-Nitrosodi-n-propylamine	(0.30)	<0.30
Phenanthrene	(0.30)	<0.30
Pyrene	(0.30)	<0.30
1,2,4-Trichlorobenzene	(0.30)	<0.30
Benzidine	(3.0)	< 3.0
Hexachlorocyclopentadiene	(0.30)	<0.30
n-Nitrosodimethylamine	(0.30)	<0.30
n-Nitrosodiphenylamine	(0.30)	<0.30
4-Chloro-3-methylphenol	(0.30)	<0.30
2-Chlorophenol	(0.30)	<0.30
2,4-Dichlorophenol	(0.30)	<0.30
2,4-Dimethylphenol	(0.30)	<0.30
2,4-Dinitrophenol	(0.30)	<0.30
2-Methyl-4,6-dinitrophenol	(0.30)	<0.30
2-Nitrophenol	(0.30)	<0.30
4-Nitrophenol	(0.30)	<0.30
Pentachlorophenol	(0.30)	<0.30
Phenol	(0.30)	<0.30
2,4,6-Trichlorophenol	(0.30)	<0.30

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WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Eric Hubbard
Phone #: 372-1434

Address: 3050 Industrial Blvd.
FAX #: 372-2565

Project Number: 1301.01
Project Name: "Felix"

Project Location: Emeryville, CA
Sampler Signature:

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	Waste Extraction Test (WET)	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBAL/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
B1-1I		1			✓						✓			11/29/00	11:07	X	X															Cd, Cr, Pb, Zn, Ni							
B1-2I		1			✓						✓			"	11:15	X	X																							
B2-1I		1			✓						✓			"	9:37	X	X																							
B2-2I		1			✓						✓			"	8:45	X	X																							
B3-1I		1			✓						✓			"	12:33	X	X																							
B3-2I		1			✓						✓			"	12:39	X	X																							
B4-1II		1			✓						✓			"	14:18	X	X																							
B5-1I		1			✓						✓			"	13:55	X	X										X													
B5-1II		1			✓						✓			"	13:55		Hold										✱													
B6-1I		1			✓						✓			"	14:34	X	X										X						X							
B6-1II		1			✓						✓			"	14:34		Hold										✱						✱							

Relinquished by: [signature] — Date/Time: 11/30/00 4:45 — Received by:

Relinquished by — Date/Time — Received by:

Relinquished by — Date/Time: 11/30/00 4:45 — Received by Laboratory: Troy D. Turpen

Remarks: Pg. 1 of 1

2 week TAT

PL243

December 18, 1990
Sample Log 2088

Eric Hubbard
Wallace-Kuhl Associates
P.O. Box 1137
West Sacramento, CA 95691

Subject: Analytical Results for 4 Water Sample(s)
Identified as: Project # 1301.01 (Felix)
Received: 12/07/90

Dear Mr. Hubbard:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 18, 1990 and describes procedures used to analyze the samples.

The sample(s) were received in:

VOA vials
11 I-Chem amber bottles
Acid washed polyethylene bottles

Each sample was transported and received under documented chain of custody, assigned a consecutive log number and stored at 4 degrees Celsius until analysis commenced.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky
Senior Chemist

Western Environmental
Science & Technology
646 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

December 18, 1990
Sample Log 2088

Table 1: 'BTEX' Results for 4 Water Sample(s) Identified as
Project # 1301.01 (Felix)
Received 12/07/90

--all concentrations are units of ug/L--

Sample	Benzene	Toluene	Ethylbenzene	Xylenes
MWB1	<.5	<.5	<.5	<.5
MWB2	<.5	<.5	<.5	<.5
MWB3	<.5	<.5	<.5	<.5
Travel Blank	<.5	<.5	<.5	<.5
(Reporting Limit	.5	.5	.5	.5)

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December 18, 1990
Sample Log 2088

Table 2: 'TPH' Results for 4 Water Sample(s) Identified as
Project # 1301.01 (Felix)
Received 12/07/90

--all concentrations are units of ug/L--

Sample	TPH as Gasoline	TPH (Extractable)
MWB1	<50	<50
MWB2	<50	<50
MWB3	<50	<50
Travel Blank	<50	
Reporting Limit	50	50

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1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: ERIC HUBBARD
Phone #: 372-1434

Address: 3050 INDUSTRIAL BLVD.
FAX #: 372-2565

Project Number: 1301.01
Project Name: FELIX

Project Location: EMERYVILLE
Sampler Signature: [signature]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	Matrix: SOIL	Matrix: AIR	Matrix: SLUDGE	Matrix: OTHER	Method Preserved: HCl	Method Preserved: HNO3	Method Preserved: ICE	Method Preserved: NONE	Method Preserved: OTHER	Sampling: DATE	Sampling: TIME	BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270 (cancel)	CAM - 17 Metals	EPTOX - 8 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER: Pb, Ni, Cr, Zn, Cu (cancel)	RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
MWB1		9	43	✓						10	✓			12/6/90	16:30		X	X										X						X					
MWB2		9	43 / 6ml	✓						1	✓			12/6/90			X	X										X						X					
MWB3		9	[illegible] 43 / 50	✓						1	✓			12/6/90			X	X										X						X					
TRIP BLANK		1	4?														X																						

Special handling: (1 wk) circled.

Relinquished by	Date	Time	Received by
[signature]	12/7/90	18:30	
	12/7/90	18:30	Received by Laboratory: [signature]

Remarks: Note: 9 containers per sample
cancel 625 & metals as per R. Prezzia [initials]

PL 278

December 14, 1990
Sample Log 2101

Jay Groh
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 1 Soil Sample(s)
Identified as: Felix
Received: 12/12/90
Purchase Order: 102574-56959-18-7001

Dear Mr. Groh:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 14, 1990 and describes procedures used to analyze the samples.

Sample(s) were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky
Senior Chemist

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

December 14, 1990
Sample Log 2101

Sample: **Composite 1**
1A
1B
1C
1D

From : Former "Lightgate"
Received : 12/12/90
Matrix : Soil

--all concentrations are units of mg/kg--

Parameter / (Reporting Limit)		Measured Value
Extractable TPH	(10)	Diesel : 200
		Motor Oil : 1000

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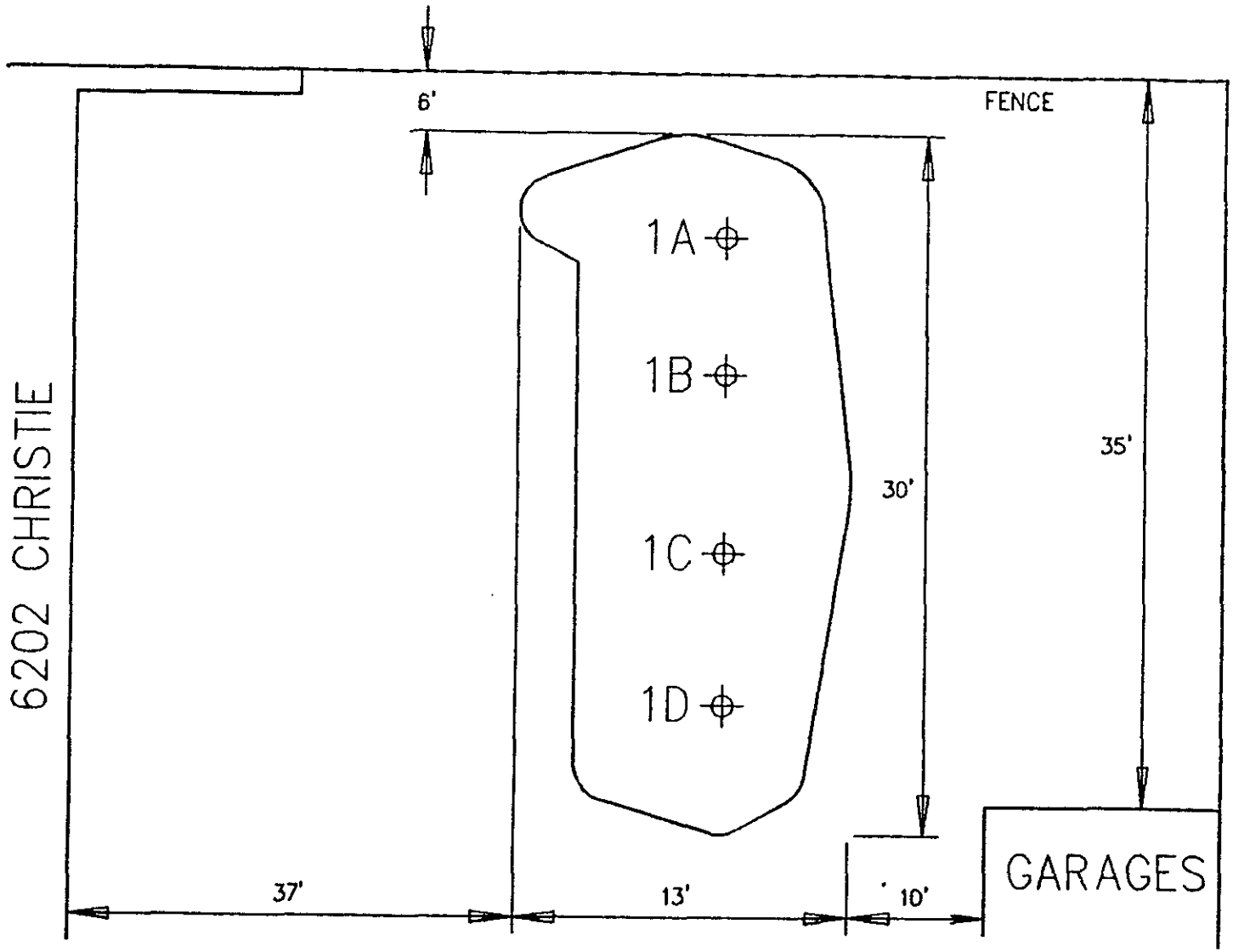

NOTE:

Samples 1A through 1D were composited in the laboratory as one stockpile sample.

FELIX (SCOTT)
6202 CHRISTIE
EMERYVILLE, CALIFORNIA

Sample Log#: 2101

DATE: 12/12/1990

Western Environmental Science & Technology
1046 Olive Drive #3, Davis, CA 95616
Phone: (916) 753-9500

Drawn by: TGT

WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Jay Gush (Scott Co.)
Phone #: (415) 934-2833

Address: 1919 Market St. Oakland, CA
FAX #:

Project Number: 102574-56959-18-7001
Project Name: Former "Lightgate"

Project Location: 6202 Christie Emeryville, CA
Sampler Signature: Troy A. Turpen

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO_3	ICE	NONE	OTHER	Sampling: DATE	TIME
1A,B,C,D		4	2½ 6		X						X			12/12/90	10:00

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jethuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	Waste Extraction Test (WET)	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
		X					Composite																

SPECIAL HANDLING

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
	X			

Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
Troy A. Turpen	12/12/90	18:30	D. Priddy

Remarks: 48 hr TAT
Composite 1A, 1B, 1C, 1D

Sampling & Transport: 1.75 hrs

PL291

Soil Sampling Report

Site: 6202 Christie Avenue
Emeryville, California

Date: January 14, 1991

WEST Staff: Charles A. Lyngstad

WEST Report No.: SR-2199

Soil samples were collected in clean brass sleeves. One end of the sleeve was first sealed with aluminum foil and then capped with a plastic endcap. For each sample collected, the open end of the sampling sleeve was driven into the soil and withdrawn full. The sleeve's contents were packed firmly to eliminate any headspace, and excess soil was removed. The open end of the sleeve was sealed and capped as described above. The capped ends of the sleeve were sealed with tape, and the sleeve was placed on ice.

The sampling date and individual sampling times are recorded on the attached chain-of-custody copy.

Four soil samples were collected from the stockpiled soils. The location of the sampling points is shown on the attached site map. All samples were collected at least 12 inches beneath the surface of the stockpile.

In general, the sampled soils consisted of lumpy clays mixed with loose sand. Petroleum-product odor was not detected in the sampled soils.

Robert G. Smith, Ph.D., P.E.
Director of Engineering

Charles A. Lyngstad
Staff Technician

REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF CALIFORNIA

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

January 21, 1991
Sample Log 2199

Jay Groh
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 1 Soil Sample(s)
Identified as: Felix
Received: 01/14/91
Purchase Order: 106236-58468-72-7001

Dear Mr. Groh:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on January 21, 1991 and describes procedures used to analyze the samples.

Sample(s) were received in brass sleeves that were sealed with aluminum foil and plastic endcaps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 8020/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)
"Organochlorine Pesticides (EPA Method 8080/Extraction)
"Polychlorinated Biphenyls (PCBs)" (EPA Method 8080/Extraction)
"Halogenated Solvents" (EPA Method 8010)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky
Senior Chemist

REGISTERED PROFESSIONAL ENGINEER
ROBERT G. [illegible]
No. [illegible]
CIVIL
STATE OF CALIFORNIA

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

January 21, 1991
Sample Log 2199

Sample: Composite 1
2A
2B
2C
2D

From : Felix
Received : 01/14/91
Matrix : Soil

--all concentrations are units of mg/kg--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.005)	<.005
Toluene	(.005)	<.005
Ethylbenzene	(.005)	<.005
Total Xylenes	(.005)	<.005
TPH as Gasoline	(.5)	<.5
Extractable TPH	(10)	Diesel : <100*
		Motor Oil : 4200
PCB 1016	(.02)	<.20*
PCB 1221	(.02)	<.20*
PCB 1232	(.02)	<.20*
PCB 1242	(.02)	<.20*
PCB 1248	(.02)	<.20*
PCB 1254	(.02)	<.20*
PCB 1260	(.02)	<.20*

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January 21, 1991
Sample Log 2199

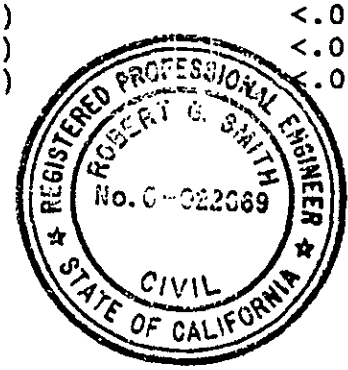
Sample: **Composite 1**
2A
2B
2C
2D

From : Felix
Received 01/14/91
Matrix : Soil

--all concentrations are units of mg/kg--

8010 - Halogenated Volatile Organics

Parameter /	(Reporting Limit)	Measured Value
Chloromethane	(0.01)	<0.01
Chloroethane	(0.01)	<0.01
Vinyl Chloride	(0.01)	<0.01
Bromomethane	(0.01)	<0.01
Trichlorofluoromethane	(.001)	<.001
1,1-Dichloroethene	(.001)	<.001
Dichloromethane	(.001)	<.001
t-1,2-Dichloroethene	(.001)	<.001
1,1-Dichloroethane	(.001)	<.001
Chloroform	(.001)	<.001
1,1,1-Trichloroethane	(.001)	<.001
1,2-Dichloroethane	(.001)	<.001
Carbon Tetrachloride	(.001)	<.001
1,2-Dichloropropane	(.001)	<.001
Trichloroethene	(.001)	<.001
Bromodichloromethane	(.001)	<.001
2-Chloroethylvinyl Ether	(0.01)	<0.01
c-1,3-Dichloropropene	(.001)	<.001
t-1,3-Dichloropropene	(.001)	<.001
1,1,2-Trichloroethane	(.001)	<.001
Tetrachloroethene	(.001)	<.001
Dibromochloromethane	(.001)	<.001
Chlorobenzene	(.001)	<.001
Bromoform	(.001)	<.001
1,1,2,2-Tetrachloroethane	(.001)	<.001
1,4-Dichlorobenzene	(.001)	<.001
1,3-Dichlorobenzene	(.001)	<.001
1,2-Dichlorobenzene	(.001)	<.001



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1046 Olive Drive, Suite 3
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916 753-9500

January 21, 1991
Sample Log 2199

Sample: Composite 1
2A
2B
2C
2D

From : Felix
Received 01/14/91
Matrix : Soil

--all concentrations are units of mg/kg--

8080 - Organochlorine Pesticides

Parameter /	(Reporting Limit)	Measured Value
Aldrin	(0.01)	<0.01
alpha-BHC	(0.01)	<0.01
beta-BHC	(0.01)	<0.01
delta-BHC	(0.01)	<0.01
gamma-BHC	(0.01)	<0.01
Chlordane	(0.20)	<0.20
4,4'-DDD	(0.01)	<0.01
4,4'-DDE	(0.01)	<0.01
4,4'-DDT	(0.01)	<0.01
Dieldrin	(0.01)	<0.01
Endosulfan 1	(0.01)	<0.01
Endodulfan 2	(0.01)	<0.01
Endosulfan Sulfate	(0.01)	<0.01
Endrin	(0.01)	<0.01
Endrin Aldehyde	(0.01)	<0.01
Heptachlor	(0.01)	<0.01
Heptachlor Epoxide	(0.01)	<0.01
Toxaphene	(0.20)	<0.20

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

AIR, WATER & HAZARDOUS WASTE LABORATORY (No.90&131) CERTIFIED by CALIFORNIA DEPT of HEALTH SERVICES

Coast-to-Coast Analytical Services

Coast-to-Coast
Analytical Services
141 Suburban Road, Suite C-4
San Luis Obispo, California 93401
(805) 543-2553

Lab Number: H-0249-1
Collected: 01/14/91 Comp.
Received: 01/16/91 @ 1630
Tested: As Listed
Collected by:

ATTN: Troy Turpen
Western Environmental Science & Tech.
1046 Olive Drive, Suite 3
Davis, CA 95616

Sample Description:

Project #101-359 FELIX,
2A,2B,2C,2D, Solid

AQUATIC TOXICITY

Species: Pimephales promelas
Common Name: Fathead Minnow
Supplier Thomas Fish Co.
Length 3.1 cm x Weight 0.32 g
Acclimation Period >10 days
Acclimation Temperature 16-22 degrees C
Dead in Acclimation Tank <1%

Test Type Static 96 hr LC50
Dilution Water: Freshwater (soft)
Number per Tank 10
Max. Length 3.3 cm Min. Length 2.9 cm
Max. Weight 0.45 g Min. Weight 0.24 g
Tank Volume 10 liters
Hardness: 38 mg/L
Alkalinity: 28 mg/L

	INITIAL			24 HOUR				48 HOUR				72 HOUR				96 HOUR				
DATE:	01/24/91			01/25/91				01/26/91				01/27/91				01/28/91				
TIME:	@1215 JRH			@1330 JRH				@1630 JRH				@1100 MNH				@0930 JRH				
	DO	C Deg.	pH	DO	C Deg.	pH	#M	DO	C Deg.	pH	#M	DO	C Deg.	pH	#M	DO	C Deg.	pH	#M	No. Dead
CONTROL	8.8	18	7.5	8.2	20	7.4	0	8.0	19	7.0	0	8.9	18	7.3	0	8.9	18	7.3	0	0
750 mg/L	8.6	18	7.6	8.3	20	7.3	0	8.2	19	7.3	0	9.0	18	7.2	0	9.2	18	7.4	0	0
50 mg/L	8.8	18	7.6	8.2	20	7.3	0	7.9	19	7.3	0	8.6	18	7.2	0	8.7	18	7.4	0	0
00 mg/L	8.6	18	7.5	7.8	20	7.2	0	7.5	19	7.2	0	8.5	18	7.3	0	8.6	18	7.3	0	0
500 mg/L	8.7	18	7.6	7.8	20	7.2	0	7.6	19	7.2	0	8.3	18	7.3	0	8.5	18	7.3	0	0
0 mg/L	8.7	18	7.6	6.7	20	7.2	0	6.7	19	7.1	0	7.5	18	7.2	0	7.8	18	7.3	0	0
250 mg/L	8.7	18	7.5	7.4	20	7.2	0	7.1	19	7.1	0	7.7	18	7.2	0	7.9	18	7.3	0	0

REMARKS: Sample Alkalinity Before: 32 mg/L After: 30 mg/L
@750 mg/L Hardness Before: 46 mg/L After: 44 mg/L
LC50: >750 mg/L LC50

This material does not have an acute aquatic 96-hr LC50 less than 500 mg/l with fathead minnows and according to 22 Cal Adm Code Art 11 Sec. 66696 (4) is not hazardous or toxic by this criterion.

01/28/91
H0249-1W.WR1/#2
MH/ke

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES
Mary Havlicek, Ph.D., President

COAST - TO - COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

141 Suburban Road	San Luis Obispo, CA 93401	(805) 543-2553	Fax (805) 543-2685
751 S. Kellogg, Suite A	Goleta, CA 93117	(805) 964-7838	Fax (805) 967-4386
1885 North Kelly Road	Napa, CA 94558	(707) 257-7211	Fax (707) 226-1001
9333 Tech Center Dr., Ste. 800	Sacramento, CA 95826	(916) 368-1333	Fax (916) 362-2484
2400 Cumberland Dr.	Valparaiso, Indiana 46383	(219) 464-2389	Fax (219) 462-2953

Lab Number : H-0249-1
Project : 101-359 FELIX

CLIENT: Troy Turpen
Western Environmental Science & Tech
1046 Olive Drive, Suite 3
Davis, CA 95616

REPORT OF ANALYTICAL RESULTS

SAMPLE DESCRIPTION	MATRIX	SAMPLED BY	SAMPLED DATE	RECEIVED
2A, 2B, 2C & 2D	Soil	Unknown	01/14/91	01/16/91

CONSTITUENT	*PQL	RESULT	UNITS	METHOD	ANALYZED	BY	NOTES
Antimony	0.3	1.1	mg/Kg	EPA 7040	01/29/91	LR	1
Arsenic	0.1	2.3	mg/Kg	EPA 7061	01/29/91	LR	1
Chromium, Hexavalent	32.	ND	mg/Kg	CALC			
Lead	1.	34.	mg/Kg	EPA 7420	01/25/91	LR	2
Mercury	0.002	0.048	mg/Kg	EPA 7471	01/28/91	KS	3
Selenium	0.1	0.1	mg/Kg	EPA 7741	01/24/91	LR	1
Silver	0.1	0.8	mg/Kg	EPA 7760	01/25/91	LR	1
Thallium	3.	ND	mg/Kg	EPA 7840	01/24/91	LR	2
PRIORITY POLLUTANT METALS BY ICP							2
Beryllium	0.5	ND	mg/Kg	EPA 6010	01/29/91	KS	
Cadmium	3.	ND	mg/Kg	EPA 6010	01/29/91	KS	
Chromium	3.	31.	mg/Kg	EPA 6010	01/29/91	KS	
Copper	3.	34.	mg/Kg	EPA 6010	01/29/91	KS	
Nickel	3.	31.	mg/Kg	EPA 6010	01/29/91	KS	
Zinc	3.	80.	mg/Kg	EPA 6010	01/29/91	KS	

CCAS is Certified by CA Department of Health Services: Laboratory #131
*RESULTS listed as 'ND' were not detected at or above the listed PQL (Practical Quantitation Limit)
(1) Sample Preparation on 01/23/91 by JLW using EPA 3050
(2) Sample Preparation on 01/24/91 by AR using EPA 3050
(3) Sample Preparation on 01/23/91 by JLW

01/31/91

MH/jmw/kes/wjm

CC: Jay Groh
Scott Co
1919 Market Street
Oakland, CA 93607

Respectfully submitted,
COAST-TO-COAST ANALYTICAL SERVICES, INC.

James White, Group Leader

Mary Havlicek, Ph.D.
President

COAST-TO-COAST ANALYTICAL SERVICES

Air, Water & Hazardous Waste Sampling, Analysis & Consultation
Certified Hazardous Waste, Chemistry, Bacteriology & Bioassay Laboratories

141 Suburban Road	•	San Luis Obispo, CA 93401	•	(805) 543-2553	•	Fax (805) 543-2685
751 S. Kellogg, Suite A	•	Goleta, CA 93117	•	(805) 964-7838	•	Fax (805) 967-4386
1885 North Kelly Road	•	Napa, CA 94558	•	(707) 257-7211	•	Fax (707) 226-1001
9333 Tech Center Dr., Ste. 800	•	Sacramento, CA 95826	•	(916) 368-1333	•	Fax (916) 362-2484
2400 Cumberland Dr.	•	Valparaiso, Indiana 46383	•	(219) 464-2389	•	Fax (219) 462-2953

ADAPTED FROM

22 CAC SECTION 66699. PERSISTENT AND BIOACCUMULATIVE TOXIC SUBSTANCE

Any waste is a hazardous waste which contains a substance listed below:

(1) at a concentration in milligrams per liter as determined persuant to Section 66700 which exceeds its listed Soluble Threshold Limit Concentration (STLC) or

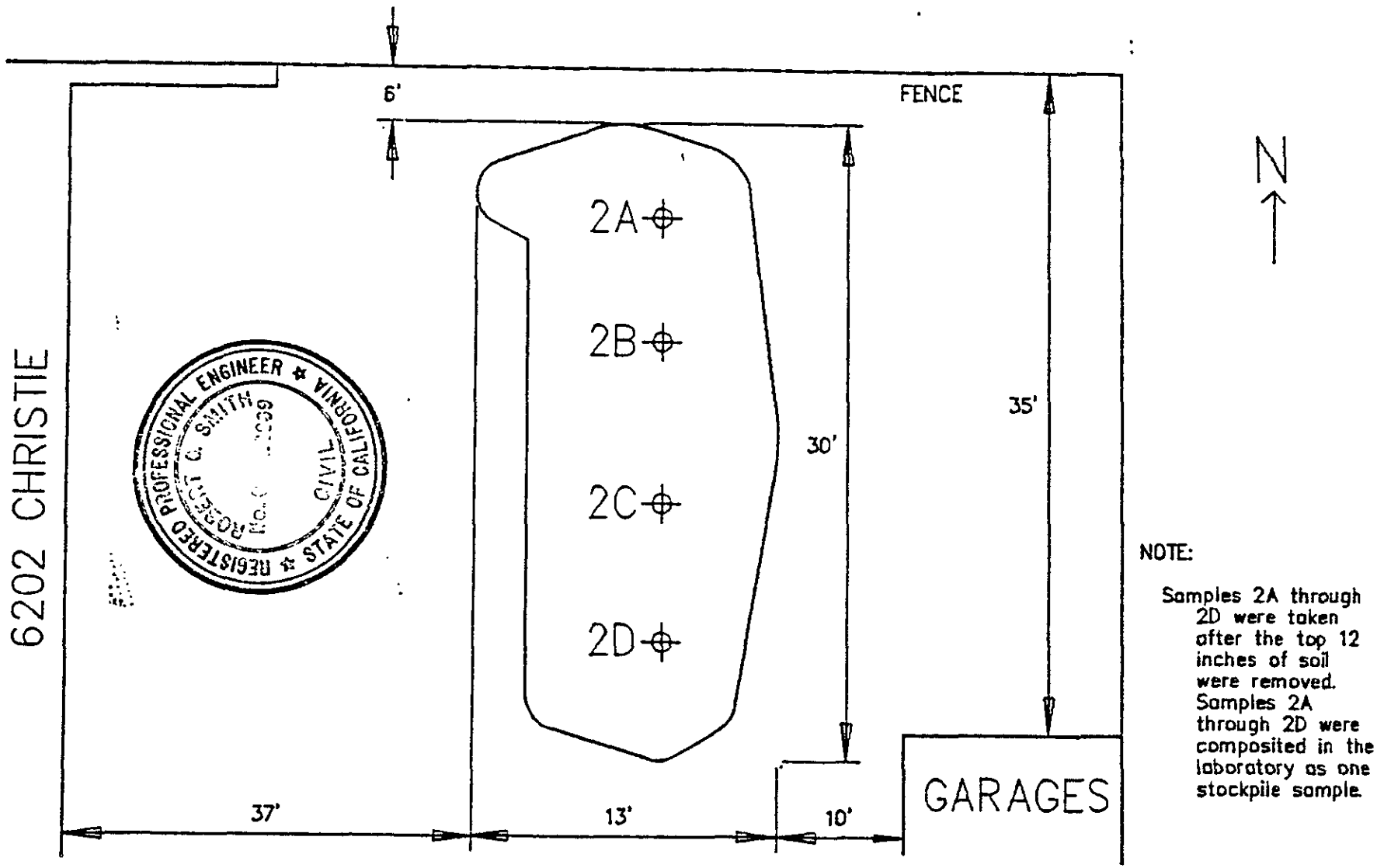
(2) at a concentration in milligrams per kilogram in the waste which exceeds its listed Total Threshold Limit Concentration (TTLC).

Inorganic Persistent and Bioaccumulative Toxic Substances and their STLC and TTLC Values

Substance	*STLC** *mg/L*	*TTLC** *Wet-Weight mg/Kg*
Antimony and or antimony compounds	15	500
Arsenic and/or arsenic compounds	5.0	500
Asbestos	-	1.0 (as percent)
Barium and/or barium compounds (excluding barite)	100	10,000 [1]
Beryllium and/or beryllium compounds	0.75	75
Cadmium and/or cadmium compounds	1.0	100
Chromium (VI) compounds	5	500
Chromium and/or chromium (III) compounds	560	2,500
Cobalt and/or cobalt compounds	80	8,000
Copper and/or copper compounds	25	2,500
Fluoride salts	180	18,000
Lead and/or lead compounds	5.0	1,000
Mercury and/or mercury compounds	0.2	20
Molybdenum and/or molybdenum compounds	350	3,500
Nickel and/or nickel compounds	20	2,000
Selenium and/or selenium compounds	1.0	100
Silver and/or silver compounds	5	500
Thallium and/or thallium compounds	7.0	700
Vanadium and/or vanadium compounds	24	2,400
Zinc and/or zinc compounds	250	5,000

[1] Excluding barium sulfate.

* STLC and TTLC values are calculated on the concentrations of the elements, not the compounds.



NOTE:

Samples 2A through 2D were taken after the top 12 inches of soil were removed. Samples 2A through 2D were composited in the laboratory as one stockpile sample.

FELIX (SCOTT)
6202 CHRISTIE
EMERYVILLE, CALIFORNIA

Sample Log#: 2199

DATE: 1/14/1991

Western Environmental Science & Technology
1046 Olive Drive #3, Davis, CA 95616
Phone: (916) 753-9500

Drawn by: TGT

WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Jay Gravatt - Smith Co.

Phone #:

Address:

FAX #:

Project Number:

Project Name: Felix

Project Location:

Sampler Signature:

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
2A		1			X						X			1-14-91	1300
2B		1			↓						↓			↓	↓
2C		1			↓						↓			↓	↓
2D		1			↓						↓			↓	↓

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	Waste Extraction Test (WET)	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	↓	↓					↓		↓	↓	Composite						

OTHER

SPECIAL HANDLING

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
	X			

Relinquished by:	Date	Time	Received by:
	1-14-91	1600	
Relinquished by			Received by:
Relinquished by			Received by Laboratory:

Remarks: 2 hr Sampling

REGISTERED PROFESSIONAL ENGINEER ★ ROBERT G. SMITH ★ [illegible] ★ STATE OF CALIFORNIA

WEST
Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: JAY GROH
Phone #: 415-834-2333
Address: Scott Co
FAX #:
Project Number: 101-359
Project Name: FELIX
Project Location: PO# 106236-58468-72-7001
Sampler Signature: [signature]

Sample ID	Lab # (Lab use only)	# CONTAINERS	Matrix: SOIL	Method Preserved: ICE	Sampling DATE	Sampling TIME	EPA - Priority Pollutant Metals	OTHER: 96-hr LC50 / Aquatic Tox
2A	#0249 ~~#0217~~	1	|	|	1/14/91	13:00	|	|
2B		1	|	|		13:05	|	|
2C		1	|	|		13:10	|	|
2D		1	|	|		13:15	|	|

Analysis Request columns: BTEX (602/8020); BTEX/TPH as Gasoline (602/8020/8015); TPH as Diesel (8015 or 8270); TPH as Jetfuel (8015 or 8270); Total Oil & Grease (413.1); Total Oil & Grease (413.2); Total Petroleum Hydrocarbons (418.1); EPA 601/8010; EPA 602/8020; EPA 608/8080; EPA 608/8080-PCBs Only; EPA 624/8240; EPA 625/8270; CAM - 17 Metals; Waste Extraction Test (WET); EPA - Priority Pollutant Metals; LEAD (7420/7421/239.2); ORGANIC LEAD

Other: 96-hr LC50 / Aquatic Tox

Special Handling: RUSH SERVICE (12 hr) or (24 hr); EXPEDITED SERVICE (48 hr) or (1 wk); VERBALS/FAX; SPECIAL DETECTION LIMITS (SPECIFY); SPECIAL REPORTING REQUIREMENTS

1/21 Called Troy Turpen: Invoice 1 copy to Scott Co. Reports to WEST. BK

Relinquished by: [signature] **Date** **Time**
Received by: Stewart Podolsky (?)
Relinquished by: Stewart Podolsky (?) **Date** **Time**
Received by:
Relinquished by: **Date** **Time**
Received by Laboratory: 1-16-91 1110 Shelley Hoyt — sealed intact cold (?)

Remarks: Bill To Scott Co / Results needed by 1/28/91.
Composite 4 samples into 1 sample for analyses.

April 8, 1991
Sample Log 2419

Jay Groh
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 3 Water Sample(s)
Identified as: King Knight Prop.
Received: 04/05/91

Dear Mr. Groh:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on April 8, 1991 and describes procedures used to analyze the samples.

Water samples were received in 40-mL glass bottles sealed with TFE septae, and in 1-L glass bottles sealed with TFE-lined caps. Each sample was received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky
Senior Chemist

Western Environmental
Science & Technology
1040 Olive Drive, Suite 4
Davis, CA 95616

April 8, 1991
Sample Log 2419

Sample: B1

From : King Knight Prop.
Received : 04/05/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	<.5
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	.66
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50

[illegible]
1046 Olivo Drive, Suite 3
[illegible]

April 8, 1991
Sample Log 2419

Sample: B2

From : King Knight Prop.
Received : 04/05/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	<.5
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3

April 8, 1991
Sample Log 2419

Sample: B3

From : King Knight Prop.
Received : 04/05/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	<.5
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616

WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: JAY GROH
Phone #:
Address:
FAX #:
Project Number:
Project Name: KING KNIGHT PROP.
Project Location: EMERYVILLE, CA
Sampler Signature: Jay Groh

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
B1		4		X										4/5/91	0932
B2		4		X										4/5/91	0940
B3		5		X										4/5/91	0927

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	Waste Extraction Test (WET)	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	X	X															
	X	X															
	X	X															

OTHER

SPECIAL HANDLING

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBALS/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
X				
X				
X				

Relinquished by:	Date	Time	Received by:
Jay Groh	4/5/91	11:05	
Relinquished by:	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	4/5/91	11:05	

Remarks:

July 25, 1991
Sample Log 2844

Jay Groh
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 3 Water Sample(s)
Identified as: Felix/King Knight Properties
Received: 07/22/91
Purchase Order: 105749-50554-72-7001

Dear Mr. Groh:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on July 25, 1991 and describes procedures used to analyze the samples.

Water samples were received in 40-mL glass bottles sealed with TFE septae, and in 1-L glass bottles sealed with TFE-lined caps. Each sample was received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us at 916-757-4650 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Stewart Podolsky
Senior Chemist

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

July 25, 1991
Sample Log 2844

Sample: **MW-B1-7/22**

From : Felix/King Knight Properties
Received : 07/22/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	<.5
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

July 25, 1991
Sample Log 2844

Sample: **MW-B2-7/22**

From : Felix/King Knight Properties
Received : 07/22/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	<.5
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50

Western Environmental
Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

July 25, 1991
Sample Log 2844

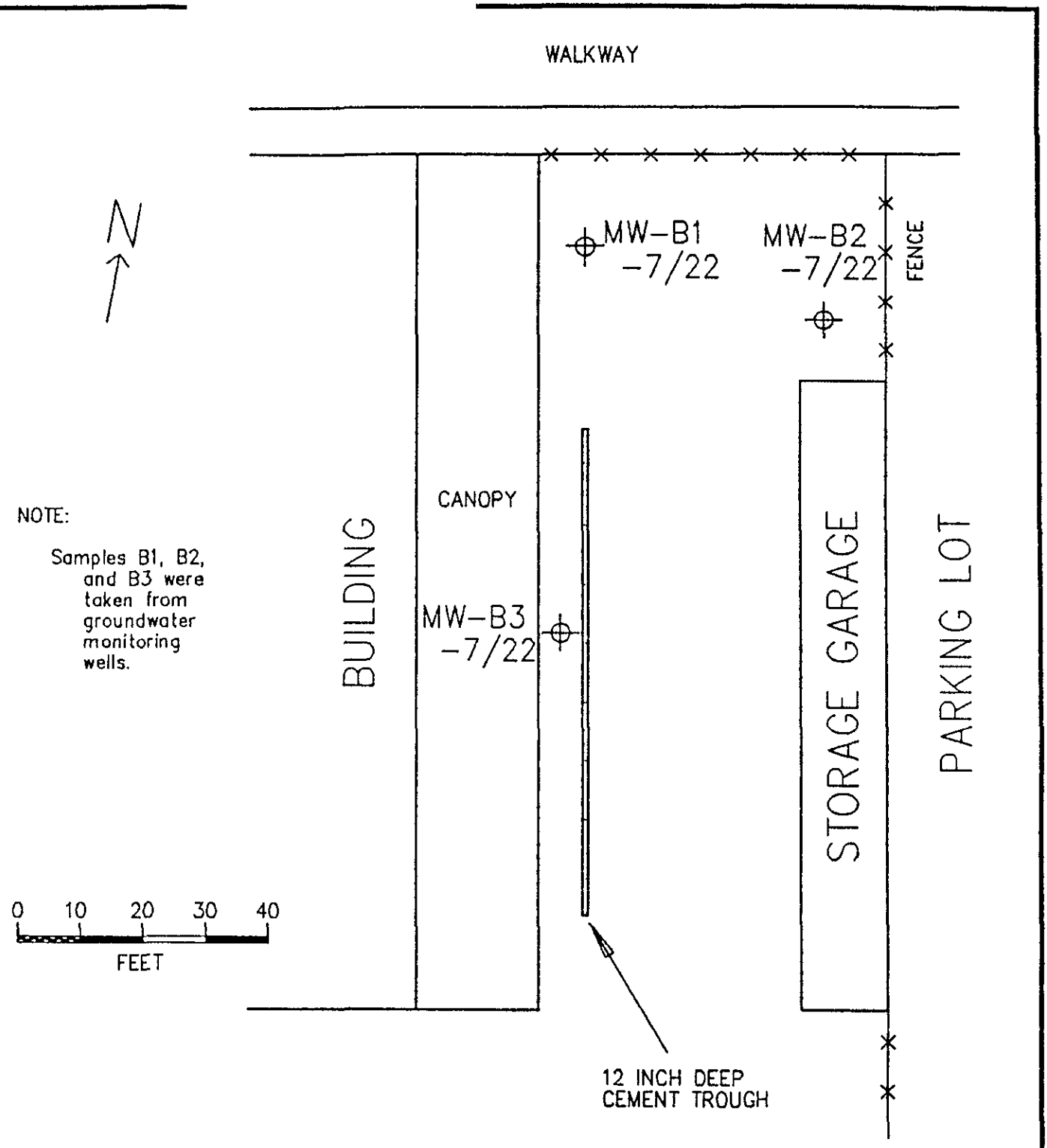
Sample: **MW-B3-7/22**

From : Felix/King Knight Properties
Received : 07/22/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	<.5
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50

Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500



KING KNIGHT/
FELIX
(SCOTT CO.)
6202 CHRISTIE
EMERYVILLE,
CALIFORNIA

Sample Log#: 2844

DATE: 7/22/1991

SCALE 1:274

Western Environmental
Science & Technology
1046 Olive Drive #3, Davis, CA 95616
Phone: (916) 753-9500

Drawn by: TGT

October 17, 1991
Sample Log 3324

Michael Schweickert-Stary
Scott Company
1919 Market Street
Oakland, CA 94607

Subject: Analytical Results for 3 Water Sample(s)
Identified as: King Knight/Felix
Received: 10/10/91
Purchase Order: 102917-50554-72-7001

Dear Mr. Schweickert-Stary:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on October 14, 1991 and describes procedures used to analyze the samples.

Water samples were received in 40-mL glass bottles sealed with TFE septae, and in 1-L glass bottles sealed with TFE-lined caps. Each sample was received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)
"TPH as Diesel,Motor Oil,Jet/Kerosene" (Mod. 8015/Extraction)

Please refer to the following table(s) for summarized analytical results and contact us at 916-757-4650 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

Western Environmental
Science & Technology
1046 Olivo Drive, Suite 3
Davis, CA 95616
916 753-9500

October 17, 1991
Sample Log 3324

Sample: MW-B1-10/10/91

From : King Knight/Felix
Received : 10/10/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	1.0
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50 Motor Oil : <50

Western Environmental
Science & Technology
1048 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

October 17, 1991
Sample Log 3324

Sample: MW-B2-10/10/91

From : King Knight/Felix
Received : 10/10/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	.92
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50 Motor Oil : <50

Western Environmental
Science & Technology
1048 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500

October 17, 1991
Sample Log 3324

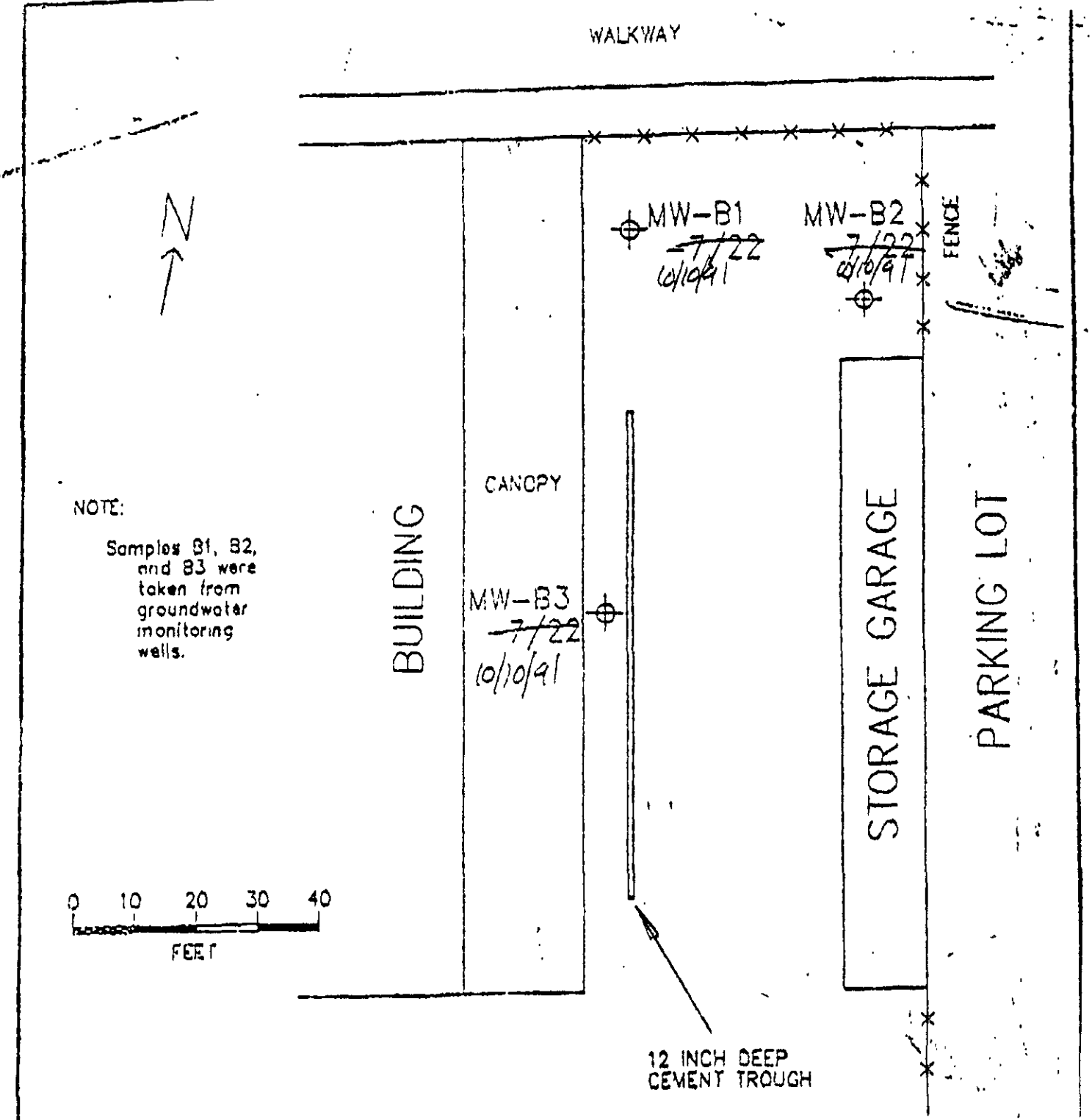
Sample: MW-B3-10/10/91

From : King Knight/Felix
Received : 10/10/91
Matrix : Water

--all concentrations are units of ug/L--

Parameter / (Reporting Limit)		Measured Value
Benzene	(.5)	<.5
Toluene	(.5)	.74
Ethylbenzene	(.5)	<.5
Total Xylenes	(.5)	<.5
TPH as Gasoline	(50)	<50
Extractable TPH	(50)	Diesel : <50 Motor Oil : <50

Western Environmental
Science & Technology
1946 Olive Drive, Suite 3
Davis, CA 95616
916 753-9500



KING KNIGHT/
FELIX
(SCOTT CO.)
6202 CHRISTIE
EMERYVILLE,
CALIFORNIA

Sample Log#: ~~9814~~ 1391

DATE: ~~7/22/1991~~ 10/10/1991

SCALE 1:274

Western Environmental Science & Technology
1046 Olive Drive #3, Davis, CA 95616
Phone: (916) 753-9500

Drawn by: TGT

WEST
Western Environmental Science & Technology
1046 Olive Drive, Suite 3
Davis, CA 95616
916-753-9500
FAX #: 916-753 6091

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Michael Schweickert-Stary
Phone #: (510)834-2333
Address: Scott Co. 1919 Market Street, Oakland
FAX #:
Project Number: P.O.# 102917-50554-72-7061
Project Name: King Knight/Felix
Project Location: 6202 Christie Ave - Emeryville, CA
Sampler Signature: Troy D. Trupin

Sample ID	Lab # (Lab use only)	# CONTAINERS	Volume/Amount	Matrix: WATER	SOIL	AIR	SLUDGE	OTHER	Method Preserved: HCl	HNO3	ICE	NONE	OTHER	Sampling: DATE	TIME
MW-B1-101091		4 1	40ml L	X							X			10/9/91	16:20
MW-B2-101091		4 1	40ml L	X							X			10/9/91	16:50
MW-B3-101091		4 1	40ml L	X							X			10/9/91	15:30

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/8015)	TPH as Diesel (8015 or 8270)	TPH as Jetfuel (8015 or 8270)	Total Oil & Grease (413.1)	Total Oil & Grease (413.2)	Total Petroleum Hydrocarbons (418.1)	EPA 601/8010	EPA 602/8020	EPA 608/8080	EPA 608/8080-PCBs Only	EPA 624/8240	EPA 625/8270	CAM - 17 Metals	Waste Extraction Test (WET)	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	ORGANIC LEAD
	X	X															
	X	X															
	X	X															

OTHER

SPECIAL HANDLING

RUSH SERVICE (12 hr) or (24 hr)	EXPEDITED SERVICE (48 hr) or (1 wk)	VERBAL/FAX	SPECIAL DETECTION LIMITS (SPECIFY)	SPECIAL REPORTING REQUIREMENTS
	X			
	X			
	X			

Relinquished by:	Date	Time	Received by:
Troy D. Trupin	10/10/91	0730	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	10/11/91	0730	

Remarks: 1 wk TAT
FW West Bridge overnight on 10/10/91.

Sampling & Transport: 3.5 hrs PL 1303

APPENDIX D

HLA REMEDIAL INVESTIGATION REPORT

"PRIVILEGED AND CONFIDENTIAL
Prepared at the request and
discretion of Counsel"

January 24, 1991

2421,017.03

Law Offices of Herman H. Fitzgerald
345 Lorton Avenue, Suite 302
Burlingame, California 94010

Attention: Mr. Herman H. Fitzgerald

Gentlemen:

Preliminary Results of Investigation and
Opinion of Potential Remedial Costs
6202 Christie Avenue (Vanco Property)
Emeryville, California

This letter presents the preliminary results of an investigation to assess the presence of hazardous materials in soil and groundwater at the Vanco property, 6202 Christie Avenue, Emeryville, California (see Plate 1). This work was conducted by Harding Lawson Associates (HLA) for the City of Emeryville Redevelopment Agency (Redevelopment Agency), who is considering purchase of this site. Our scope of work at the site was described in a proposal to the Redevelopment Agency dated July 2, 1990, authorized by Mr. John Flores on August 23, 1990. Mr. Herman H. Fitzgerald, attorney to the Redevelopment Agency, is assisting with the acquisition of this property. This letter also presents HLA's opinion of potential additional costs to remediate site conditions.

BACKGROUND AND SCOPE OF INVESTIGATION

HLA understands that the Redevelopment Agency intends to purchase the Vanco property as the future site of an urban plaza/park. The site is presently owned by Vanco (a general partnership) and is shown on Plate 2.

Since the 1920's, the site has been used for industrial and manufacturing operations. It currently holds a vacant two-story building and unattached garage, which were previously occupied by a manufacturer of computer equipment. There is a subgrade hydraulic lift, presumably containing a small amount of hydraulic oil, near the southeast corner of the main building. We understand that the northeast corner of the site was once used for unspecified drum storage, and that a 1,000-gallon underground

tank that held diesel fuel and a 550-gallon tank for waste oil were removed in February 1990 from a location between the two-story building and the north end of the garage (see Plate 2). The asphalt pavement in the vicinity of the drum storage area is heavily stained from apparent spillage of chemicals in this area.

The objectives of HLA's work were (1) to evaluate the potential presence of hazardous materials on site and in soils and groundwater beneath the site; and (2) to assess the need for remediation. In addition, we were to evaluate the agricultural suitability of the shallow soils and conduct preliminary geotechnical analyses of the site to determine its potential to support a proposed park fountain. The following is a summary of our scope of work completed at this time.

1. Drilled and sampled three soil borings

2. Converted borings to monitoring wells and collected groundwater samples

3. Collected a soil sample beneath the asphalt pavement in the drum storage area

4. Conducted a building audit, preliminary asbestos survey, and collected 10 samples of suspected asbestos-containing material

5. Submitted selected samples for analyses for specific chemicals, asbestos, and agricultural suitability; and physical testing to determine geotechnical parameters

6. Evaluated field data and chemical results.

On October 30, 1990, HLA conducted the building audit and collected building materials for asbestos testing. The monitoring wells were installed and soil samples were collected on November 1, 1990. After developing and purging the wells, groundwater samples were collected on November 5, 1990. Chemical testing of soil and groundwater was performed at NET Pacific in Santa Rosa, according to the program stipulated in HLA's proposal dated July 2, 1990. Geotechnical testing of soil samples was performed in HLA's soils laboratory in Novato, while agricultural testing was performed by Soil and Plant Laboratory, Incorporated in Santa Clara, California. ACM samples were submitted to

Forensic Analytical Specialists, Incorporated, in Hayward, California.

PRELIMINARY RESULTS OF INVESTIGATION

Subsurface Conditions

During drilling at the Vanco site, HLA encountered fairly consistent subsurface stratigraphy: 6-1/2 to 7-1/2 feet of random fill over loose to very loose black silty sands to a depth of about 10 feet; various fill materials (fat clays, silty sands, and gravels) to 13 to 15 feet; and a layer of native stiff clay (bay mud) at the depth of 13 to 15 feet. The shallower fill includes various types of rubble such as concrete, gravel, bricks, sand, and clayey soils.

Concrete rubble was encountered within the first two feet of MW-1 and a concrete slab, approximately 10 inches thick, was encountered at 14 inches below grade in MW-2. A similar concrete slab was reportedly encountered by another consultant at an adjacent site (6150 Christie Avenue). This slab may extend across portions of both sites but does not appear to underlie the entire Vanco site.

An oily or solvent odor was noted in soil cuttings from 0 to 5 feet deep in MW-3, adjacent to the former underground tank site. After coring through the surface asphalt pavement in the drum storage area, we encountered and sampled (sampling location DSA, see Plate 2) baserock (gravel) that had an oily sheen and odor. Another asphalt surface was encountered at a depth of 1 foot. We have not investigated the material under this second asphalt layer. No evidence of oil leakage was noted in the vicinity of the hydraulic lift southeast of the Vanco building.

Groundwater was encountered at a depth of approximately 5 feet. On the basis of water levels in the monitoring wells, we estimate that the hydraulic gradient is towards the west.

Chemical Results from Analyses on Soil and Groundwater Samples

Results of analyses for organic and heavy metal constituents in the soil and groundwater samples tested are summarized in Tables 1 through 4.

As shown in Table 1, results of soil analyses showed low or non-detectable concentrations of most of the organic compounds tested for except as discussed below. High concentrations of oil and grease compounds (11,000 parts per million [ppm]) were detected in sample DSA from 0.5 foot below the drum storage area. Trichloroethene (TCE), a cleaning solvent, was also found in that sample at a low concentration of .017 ppm. Oil and grease concentrations in all other samples were less than 100 ppm, with the exception of a near-surface soil sample (collected 3 feet below grade) from MW-3, which showed 180 ppm. As shown on Plate 2, boring MW-3 is adjacent to the former underground tank site.

Though several heavy metals were detected at low concentrations in soil samples from MW-1 through MW-3 and the DSA sample (Table 2), metal concentrations are well below the Total Threshold Limit Concentrations (TTLCs)* and do not appear to be of concern.

Groundwater chemical data (Tables 3 and 4) indicate that concentrations of organic compounds and heavy metals in water samples from MW-1 and MW-2 were below analytical detection limits and/or drinking water standards. The water sample from MW-3 was found to contain 1,1 Dichloroethane (DCA), a cleaning solvent, at 7.7 parts per billion (ppb). The action level** for DCA is 5 ppb. Detectable concentrations of total petroleum hydrocarbons (TPH) as gasoline, diesel fuel, and motor oil were also found in groundwater from MW-3, although drinking water standards and action levels have not been established for these constituents. One inch of separate-phase hydrocarbon product, probably diesel and motor oil, was detected floating on groundwater in MW-3 on November 27, 1990.

Building Audit and Asbestos Sampling

On the basis of a visual survey of the building interior and roof, we collected 10 samples of floor tile, ceiling panel, and dry wall for asbestos testing. Table 5 presents the results of

* Total Threshold Limit Concentrations (TTLCs) are listed in Title 22, Section 66699, of the California Code of Regulations and are one of the criteria for classifying a waste as hazardous.

** Action levels are established by the State Department of Health Services.

the asbestos analyses on those samples. Approximately 2,000 square feet of asbestos-containing floor tile are present within the Vanco building. The ceiling panel and dry wall samples did not contain detectable asbestos. Although no samples of the roofing materials were collected, it is possible that some of those materials (e.g., tar-based roofing shingles and paint used to seal roof-top penetrations) contain asbestos. Furthermore, no destructive sampling was performed to check for asbestos-containing materials behind walls or other confined spaces. These additional sampling activities were not performed because the scope of our study was limited to 10 samples, and because the court order granting access to the site did not allow destructive sampling. The asbestos-containing materials identified in our study are not considered a hazardous waste unless they become friable during demolition of the building.

During the building audit, we noted no evidence that any hazardous materials were stored, used, or disposed of improperly within the buildings. Additionally, no cracks, floor drains, sumps, or subsurface hoists were observed within the attached shop area or unattached garage.

Geotechnical Testing

Results of geotechnical analyses on selected soil samples indicate that the proposed park fountain may be supported on spread footing foundations. Its expected loads would probably not induce settlement greater than 1/2 inch. If a two-foot thick areal fill is placed over the site, total settlement would probably not exceed 6 inches. Virtually all of that settlement would occur within one year of fill placement. Therefore, if areal fill placement is needed as part of the park development project, it should precede construction of the fountain by at least six months.

Potentially liquefiable loose sands were encountered in all borings. An earthquake with ground accelerations of 0.3g would produce liquefaction-induced settlement estimated at less than 1-1/2 inches. Therefore, the risk of liquefaction-related damage to the proposed fountain would most likely be restricted to risk of damage to water supply lines where they join with structures.

Agricultural Suitability Testing

Results of analyses on soil samples submitted for agricultural suitability testing indicate that the surface soils (one to four feet deep) do not represent horticulturally high quality soils. The soil has high pH values (8.2), and very low to acutely deficient availability of key nutrients (nitrogen and phosphorus). Although calcium and magnesium availability is good, organic material content is extremely low. All samples tested had excessive amounts of coarse particles, higher than generally preferred.

Preliminary Conclusions and Recommendations

On the basis of the data presented herein, it is HLA's opinion that redevelopment of this site as an urban park/plaza is feasible. Results of chemical analyses on soil and groundwater samples indicated that concentrations of chemicals tested for were, in general, below levels of concern. Data indicate, however, that some spillage or leakage of petroleum products and/or cleaning solvents (DCA and TCE) have apparently occurred in the underground storage tank site and drum storage area.

We understand that the property owner has not yet received closure of the underground tank removal from the Alameda County Department of Environmental Health (ACDEH). In our opinion, to comply with tank closure regulations, additional field investigation will be required, including excavation and off-site disposal of up to approximately 100 cubic yards of soil from the tank site, and chemical analysis of samples. To facilitate removal of the soil, and because results of our study indicate that groundwater quality has been degraded in the vicinity of the underground tank site, we recommend that the tank pit be dewatered during and after excavation. Upon completion of remediation activities, the ACDEH will probably require that on-going groundwater monitoring be performed. In our opinion, monitoring activities would probably continue for at least two years after the soil remediation is completed. On the basis of analyses on sample DSA, as well as our observations of staining in the drum storage area, we also recommend that a small amount of soil (approximately 30 cubic yards) be removed from the drum storage area.

We recommend that the asbestos-containing floor tiles, and any other materials found to contain asbestos, be removed from the

Vanco building prior to demolition. Additional destructive sampling inside the building and collection of roofing-materials samples should be performed prior to demolition to determine if other materials inaccessible to us during the preliminary survey contain asbestos that requires removal.

Current soil and subsurface conditions will support a planned park fountain, but are not conducive to healthy plant life. Any areas designated for landscaping will require the importation of topsoil. We recommend that, if possible, landscaping plans be largely limited to raised planter boxes, which would not require costly grade modifications or soil replacement work.

Opinion of Potential Remediation and Monitoring Costs

At your request, HLA has prepared the following opinion of potential costs for: (1) excavation, chemical testing, and disposal of soil associated with the underground storage tanks; (2) monitoring well installation and groundwater monitoring associated with the underground storage tanks; (3) excavation, chemical testing, and disposal of soil associated with the drum storage area; and (4) removal of asbestos-containing materials prior to demolition of the Vanco building. Assumptions used in preparing our opinion of potential costs are presented in Table 6. A more detailed break-down of the costs summarized below is presented in Table 7.

	Item	Cost Range Low	High
1.	Excavation, chemical testing, and disposal of soil associated with the underground storage tanks	53,000	80,000
2.	Monitoring well installation and groundwater monitoring associated with the underground storage tanks	60,800	60,800

3.	Excavation, chemical testing, and disposal of soil associated with the drum storage area	11,400	19,500
4.	Asbestos sampling and removal required prior to demolition of the Vanco building	12,000	17,000
	TOTAL (rounded to the nearest $10,000)	140,000	180,000

As shown in Table 6, the above preliminary estimate is contingent on many assumptions. The most significant assumptions are: (1) no remediation of groundwater is needed, (2) no additional soil beyond the estimated volume will have to be excavated near the drum storage area and UST site, and (3) no modification of the existing grade will be required to accommodate landscape design. If our assumptions are valid, the costs presented above can be considered accurate to ± 50 percent.

We trust that this provides the information required at this time. If you have any questions, please call either of the undersigned.

Yours very truly,

HARDING LAWSON ASSOCIATES

Terence J. McManus
Associate Environmental Scientist

Stephen J. Osborne
Geotechnical Engineer

TJM/SJO/mlw 031403B/L28

Attachments: Plates 1 and 2
Tables 1 through 7

N

SCALE : 1 inch = 2200 feet

PRELIMINARY

Source : Thomas Bros. Maps

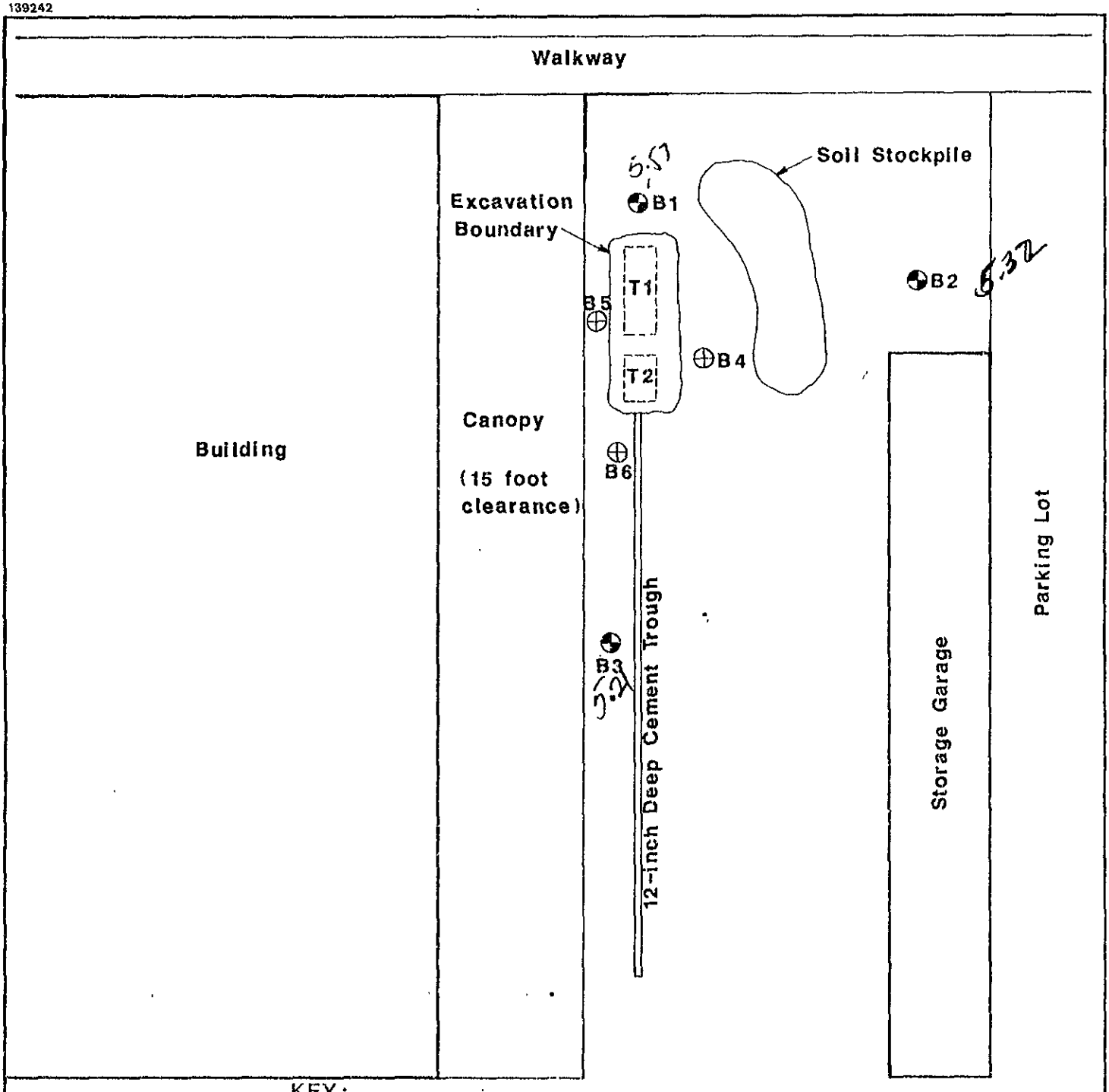
Harding Lawson Associates
Engineering and
Environmental Services

Vicinity Map
Vanco Building
6202 Christie Avenue
Emeryville, California

PLATE 1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
S. Patel	2421.017.03		01/22/91	

139242



KEY:

T1 = Former 1,000-gallon underground diesel tank

T2 = Former 550-gallon underground waste oil tank

B1 = WKA ground water monitoring well

B4 = WKA soil boring

N

SCALE: feet

0 10 20

WALLACE · KUHL & ASSOCIATES INCORPORATED

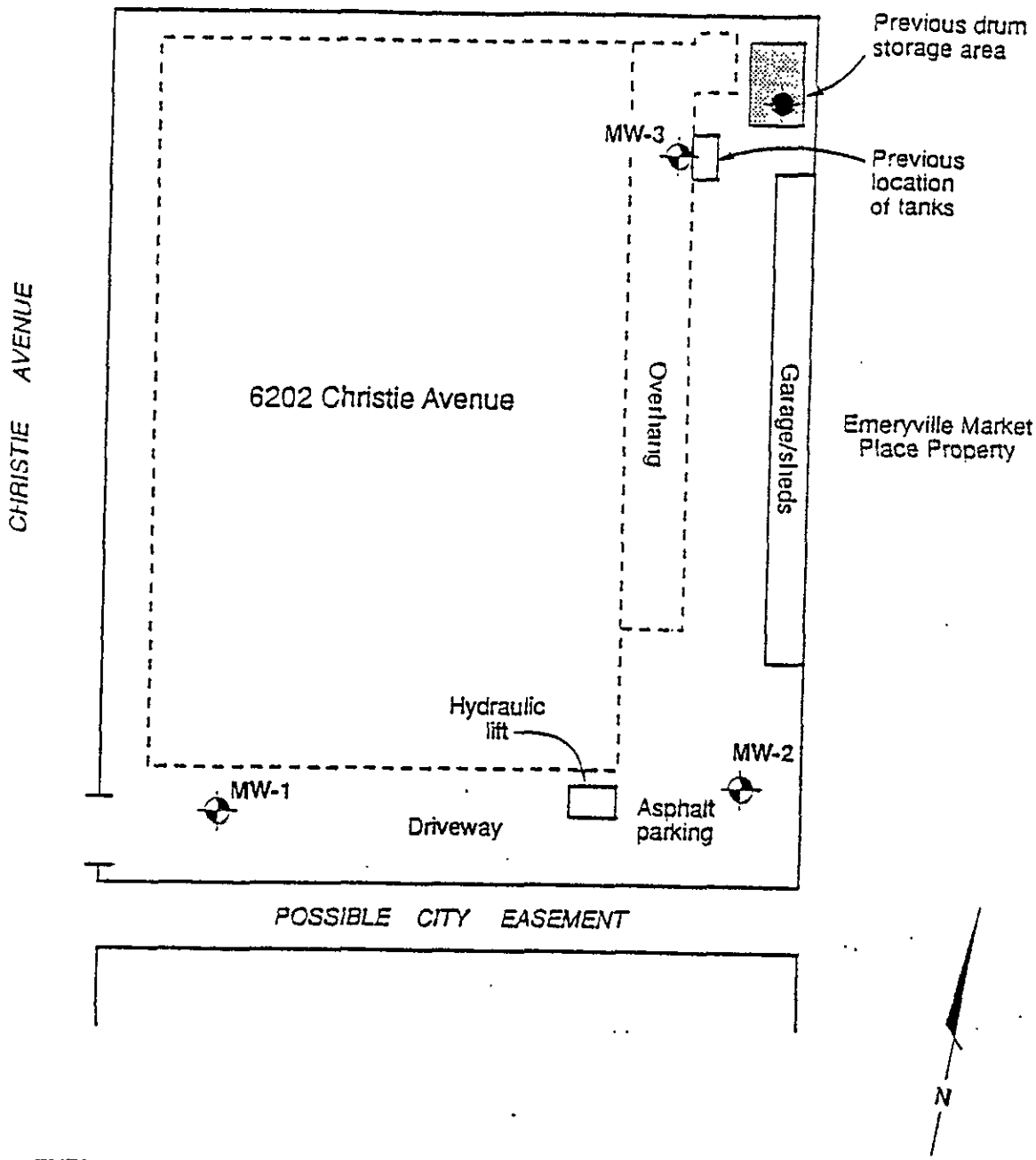
SITE PLAN

KING KNIGHT PROPERTY
6202 Christie Avenue
Emeryville, California

PROJECT NO: 1301.01

DATE: 1/90

PLATE NO: 1



Base: Alameda County Assessors Map, Number 49/1493

Harding Lawson Associates
Engineering and Environmental Services

Site Plan
Emeryville Redevelopment
6202 Christie Avenue
Emeryville, California

PLATE 2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
RHC	2421.017.03		12/90	01/23/91

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Table 1. Concentrations of Organic Compounds in Soil Samples
(results in parts per million (ppm) (mg/kg)

	MW-1 5.5 feet	MW-1 10.5 feet	MW-2 5.5 feet	MW-2 10.5 feet	MW-3 3.0 feet	MW-3 8.0 feet	MW-3 14.0 feet	DSA 0.5
VOCs								
Trichloroethene	ND (.005)	NA	NA	NA	ND (.005)	ND (.005)	NA	.017
Toluene	ND (.005)	NA	NA	NA	ND (.005)	.017	NA	ND (.005)
Remaining Compounds	ND	NA	NA	NA	ND	ND	NA	ND
BTEX								
Benzene	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)
Toluene	.015	.025	.039	.0063	.0064	.0086	.033	.013
Ethylbenzene	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)	ND (.0025)
Xylenes	ND (.0025)	.0028	ND (.0025)	ND (.0025)	.120	ND (.0025)	ND (.0025)	ND (.0025)
SOCs								
All Compounds	ND	NA	ND	NA	ND	NA	NA	ND
TPH								
Gasoline Range	ND (1)	ND (1.0)	ND (1)	ND (1)	20	1.3	ND (1)	ND (1)
Diesel Range	ND (1)	ND (1.0)	ND (1)	ND (1)	8.4	13	ND (1)	ND (1)
Motor Oil Range	ND (10)	19	13	ND (10)	14	68	ND (10)	3,300
Oil and Grease	ND (50)	ND (100)	ND (50)	ND (50)	180	ND (100)	ND (50)	11,000

DSA = Drum Storage Area
ND = Not detected
( ) = Detection limit
NA = Not analyzed
VOCs = Volatile organic compounds using EPA Test Method 8240
BTEX = Benzene, toluene, ethylbenzene, and xylenes using EPA Test Method 8020
SOCs = Semivolatile organic compounds using EPA Test Method 8270
TPH = Total petroleum hydrocarbons using modified EPA Test Method 5030/3550/8015 (purge and trap or extraction, followed by gas chromatography).
Oil and Grease = Non-polar (petroleum based) oil and grease compounds using Standard Method 5520E/F

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Table 2. Concentrations of Heavy Metals in Soil Samples
(reported as mg/kg, parts per million [ppm])

Heavy Metals	TTLC*	MW-1 5.5 feet	MW-2 5.5 feet	MW-3 3.0 feet	DSA** 0.5
Antimony	500	ND (10)	ND (10)	ND (10)	ND (10)
Arsenic	500	12	6.1	12	10
Barium	10,000	75	70	110	180
Beryllium	75	ND (2)	ND (2)	ND (2)	ND (2)
Cadmium	100	2	0.1	0.1	0.1
Chromium (Total)	2,500	27	26	31	14
Cobalt	8,000	6	7	8	74
Copper	2,500	11	15	16	23
Lead	1,000	4.5	2.4	4.1	18
Mercury	20	ND (0.1)	ND (0.1)	ND (0.1)	ND (0.1)
Molybdenum	3,500	ND (5)	ND (5)	ND (5)	ND (5)
Nickel	2,000	29	27	54	13
Selenium	100	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Silver	500	ND (2)	ND (2)	ND (2)	ND (2)
Thallium	700	ND (20)	ND (20)	ND (20)	ND (20)
Vanadium	2,400	20	19	25	19
Zinc	5,000	30	30	47	98

* = Total threshold limit concentration
** = Drum Storage Area
( ). = Detection Limit
ND = Not detected

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Table 3. Concentrations of Organic Compounds in Groundwater Samples
(reported in parts per billion (ppb) µg/L)

Parameter	Drinking Water Standards*	MW-1	MW-2	MW-3
VOCs				
1,1 Dichloroethane	5.0	ND (4.7)	ND (4.7)	7.7
Toluene	100	ND (6.0)	ND (6.0)	6.5
Xylenes	680	ND (5.0)	ND (5.0)	29.0
Remaining Compounds	NE	ND	ND	ND
BTEX				
Benzene	1.0	ND (.5)	ND (.5)	ND (.5)
Toluene	100	ND (.5)	ND (.5)	ND (.5)
Xylenes	680	ND (.5)	ND (.5)	ND (.5)
Ethylbenzene	1,750	ND (.5)	ND (.5)	ND (.5)
SOCs*				
All Compounds	---	ND	ND	ND
TPH*				
Gasoline Range	NE	ND (50)	ND (50)	440
Diesel Range	NE	ND (50)	ND (50)	1,400
Motor Oil Range	NE	ND (500)	ND (500)	2,400
Oil and Grease*	NE	ND (5,000)	ND (5,000)	ND (10,000)

VOCs = Volatile organic compounds using EPA Test Method 624
BTEX = Benzene, toluene, ethylbenzene, and xylenes using EPA Test Method 602
SOCs = Semivolatile organic compounds using EPA Test Method 625
TPH = Total petroleum hydrocarbons using modified EPA Test Method 3510/5030/8015 purge and trap or extraction, followed by gas chromatography
Oil and Grease = Non-polar (petroleum based) oil and grease using Standard Methods 5520B/F

ND = Not detected
( ) = Detection limit
* Action levels specified by the California Department of Health services; where action levels have not been established, maximum contaminant levels (MCLs) are listed.

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Table 4. Concentrations of Heavy Metals in Groundwater Samples (reported as µg/L, parts per billion [ppb])

Heavy Metals	Drinking Water Standard*	MW-1 11/05/90	MW-2 11/05/90	MW-3 11/05/90
Antimony	NE	ND (100)	ND (100)	ND (100)
Arsenic	50	8	6	15
Barium	1000	170	60	120
Beryllium	NE	ND (20)	ND (20)	ND (20)
Cadmium	10	1	2	1
Chromium (Hexavalent)	~~50~~ NE	ND (5)	ND (5)	ND (5)
Chromium (Total)	~~NE~~ 50	ND (20)	ND (20)	ND (20)
Cobalt	NE	ND (50)	ND (50)	ND (50)
Copper	1000	ND (20)	ND (20)	ND (20)
Lead	50	ND (20)	ND (2)	ND (2)
Mercury	2	ND (.5)	ND (.5)	ND (.5)
Molybdenum	NE	ND (50)	ND (50)	ND (50)
Nickel	NE	ND (50)	ND (50)	ND (50)
Selenium	10	ND (5)	ND (5)	ND (5)
Silver	50	ND (20)	ND (20)	ND (20)
Thallium	NE	ND (200)	ND (200)	ND (200)
Vanadium	~~24~~ NE	ND (50)	ND (50)	ND (50)
Zinc	5000	30	ND (20)	ND (20)

* = Primary or secondary drinking water standards established by the USEPA
NE = None established
( ) = Detection Limit
ND = Not detected

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BUILDING: 6202 Christie Avenue
Emeryville, California

Table 5.
SUMMARY OF ASBESTOS SURVEY RESULTS AND COSTS

INSPECTOR: C.A. Dahl

FUNCTIONAL SPACE/ HOMOGENEOUS AREA	SAMPLE # 02421-d19-02-	% ASBESTOS	RECOMMENDED RESPONSE ACTION	COMMENTS	APPROXIMATE QUANTITY	APPROXIMATE REMOVAL COST (CONTRACTOR)
1'x1' Floor tile	-01	5-10%, Ch	O/M or REM*	gray on white	1,000 sf	$3,000
1'x1' Floor tile	-02	nd	na	brown pattern; kitchen	na	0
2'x4' Ceiling panel	-03	nd	na	white	na	0
9"x9" Floor tile	-04	5-10%, Ch	O/M or REM*	beige	600 sf	$1,800
Drywall	-05	nd	na	na	na	0
Drywall	-06	nd	na	na	na	0
Drywall	-07	nd	na	na	na	0
9"x9" Floor tile	-08	15-20%, Ch	O/M or REM*	off-white; beneath brown tile in kitchen	150 sf	$ 900
Drywall	-09	nd	na	na	na	0
1'x1' Floor tile	-10	5-10%, Ch	O/M or REM*	gray on white	200 sf	$ 600
				Total Estimated Contractor Cost		$6,300

RESPONSE ACTIONS (RA)

- O/M - Place under an O/M program
- REM* - Remove ACM that will become friable during demolition

% ASBESTOS

Ch = Chrysotile

na = not applicable
sf = square feet

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Table 6. Assumptions Used to Develop
Opinion of Potential Costs

UST Site

- The volume of soil requiring excavation is approximately 100 cubic yards. This volume is based on an excavation area of approximately 20 feet by 20 feet and a depth of six feet. Because the existing backfill material in the excavation has probably been affected by the free-phase and dissolved hydrocarbons in groundwater, the above excavation volume includes removal of the existing backfill.

- Excavation, transportation, and disposal costs will depend on whether the soil can be disposed at a Class I, II, or III landfill. Class I disposal costs will be approximately $350 per cubic yard; Class II costs will be about $250 per cubic yard; and Class III disposal will average $80 per cubic yard. These costs include excavation, transportation, and disposal of the soil.

- Separate-phase product observed in MW-3 and petroleum-affected soil requiring excavation do not extend far beyond the tank backfill and groundwater remediation will not be required. This assumption is supported by the shallow hydraulic gradient, clay near the surface, and the less rapid migration pace of diesel and oil, compared with gasoline.

Drum Storage Area

- Volume of soil affected by oil and grease and solvents in this area is no greater than 20 x 20 x 2 feet (30 cu. yds.)

- No other contaminants of concern exist in this area of the site.

Groundwater Monitoring

- No groundwater remediation will be required by the regulatory agencies, and two years of groundwater monitoring will be sufficient to gain closure of the groundwater investigation.
- The chemical analyses to be performed as part of monitoring will be limited to tests for petroleum hydrocarbons and chlorinated solvents.

Removal of Asbestos-containing Materials

- Asbestos-containing materials removed prior to demolition will not become friable and will therefore, not require disposal as hazardous waste.
- The quantity of asbestos-containing material to be removed does not exceed 3,000 square feet.
- Current asbestos removal and disposal regulations will still be in effect at the time of the building demolition.

Other General Assumptions

- No other sources of hazardous materials (such as buried drums or other underground tanks) exist on this site.
- No leakage of hydraulic oil has occurred with respect to the on-site hydraulic lift at the southeast corner of the Vanco building, and no sampling or chemical analyses will be required when the lift is removed during building demolition.
- The remediation activities described herein are acceptable to the regulatory agencies.

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Table 7. Break-down of Opinion of Costs
for Additional Work

Item 1 Excavation, chemical testing, and disposal of soil associated with the underground storage tanks

1. Excavation and disposal costs (includes excavation, transportation and disposal fees). Only 1 of the following three possibilities will apply:	
Class I landfill (100 cu. yds. @ $350/yard)	$35,000
Class II landfill (100 cu. yds. @ $250/yard)	25,000
Class III landfill (100 cu. yds. @ $80/yard)	8,000
Cost Range	$8,000 to $35,000
2. Dewater excavation (includes pumping, transportation and disposal at a oil/water recycling facility)	
$2.00/gallon x 10,000 gallons	20,000
3. Backfill and compaction of excavation	
$30/cu. yd. x 100 cu. yds.	3,000
4. Chemical testing of samples	
Excavation samples - 10 soil samples for TPH as diesel and TOG @ $400/sample and 2 samples for volatiles, semi-volatiles, and 5 heavy metals @ $2,000 sample (24 hour results)	8,000
Disposal classification samples - 2 samples (1 sample per 50 cu.yds.) for TPH as diesel and gasoline; BTEX; oil and grease; semi-volatiles; volatiles; 17 heavy metals; reactivity;	

	ignitability; and corrosivity, @ $2,000/sample	4,000
5.	Professional consulting fees for oversight of remediation activities, project management, and report preparation	10,000

	Low	High
ITEM 1 - SUBTOTAL RANGE	53,000	80,000

Item 2 Monitoring Well Installation and Groundwater Monitoring

1.	Drill and install 3 monitoring wells @ $4,000 per well	$12,000
2.	Chemically analyze 6 soil samples (2 per well) for TPH as diesel, TOG, and BTEX @ $300/sample	1,800
3.	Chemically analyze 2 soil samples for volatiles, semi-volatiles, 5 heavy metals @ $1,000/sample	2,000
4.	Sampling of groundwater wells (8 sampling periods @ $1,000 per period)	8,000
5.	Chemically analyze groundwater samples for TPH as diesel, TOG, BTEX, and chlorinated solvents (3 samples and 8 sampling periods = 24 samples) 24 samples @ $500 per sample	12,000
6.	Disposal of purged groundwater ($500/sampling period x 8 periods) and drill cuttings from installation of wells ($200/drum and 5 drums	5,000
7.	Preparation of groundwater monitoring reports and project management, 8 reports @ $2,500/report	20,000
	ITEM 2 - SUBTOTAL	$60,800

Item 3 Drum Storage Area Excavation

1. Excavation (20 feet x 20 feet x 2 feet = 30 cu.yds) and disposal of soils. Includes

excavation, transportation and landfill disposal fees, and backfill and compaction of excavated area. Only 1 of the following three possibilities will apply:

Class I landfill ($350/cu. yd.)	10,500
Class II landfill ($250 cu. yd.)	7,500
Class III landfill ($80/cu. yd.)	2,400
Cost Range	$2,400 to $10,500

2. Chemical analysis of soil samples for hydrocarbons, solvents, and metals (5 samples from excavated area at $1,000 sample and 1 sample for disposal characterization @ $2,000/sample 7,000

3. Professional consulting fees for oversight of remediation activities and project management 2,000

ITEM 3 - SUBTOTAL RANGE $11,400 to $19,500

Item 4 Sampling and Removal of Asbestos-containing Materials

1. Destructive sampling and collection and analysis of additional samples of roofing materials $2,000

2. Professional consulting fees for preparation of plans and specs and oversight of removal activities 5,000

3. Contractor costs for removal (depends on ultimate volume of ACM to be removed) 5,000 to 10,000

ITEM 4 - SUBTOTAL RANGE $12,000 to $17,000

TOTAL RANGE (Items 1 through 4 rounded to the nearest $10,000) $140,000 to 180,000