



**Kaldveer Associates
Geoscience Consultants**

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Vice President Engineering

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Associate

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Associate

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Associate

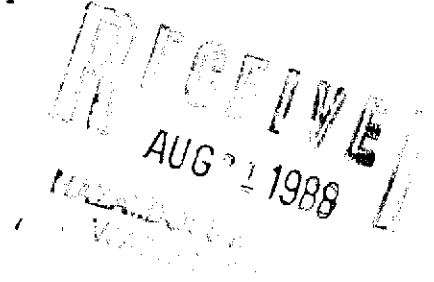
Dawn Rinaldi, P.E.

Barbara L. Potter, P.E.

August 26, 1988
KE431-43A, 12134

CSB Construction
240 Julie Ann Way
Oakland, California 94621

Attention: Mr. Frank Aguon



**RE: SOIL SAMPLING AND
ANALYTICAL TESTING
PROPOSED KRAGEN AUTO
SUPPLY
4200 MAC ARTHUR BOULEVARD
OAKLAND, CALIFORNIA**

Gentlemen:

This letter report presents the results of soil sampling and analytical testing for hydrocarbons. The work has been performed by Kaldveer Associates at the proposed Kragen Auto Supply site in Oakland, California. The subject site is represented on the Site Sketch Map, Figure 1. The purpose of our soil sampling and analytical testing has been to assess the approximate extent of hydrocarbon contamination in stockpiled soils located at the site.

Our scope of work included the following: 1) observe the removal of soils from the tank excavations, 2) select and obtain ten representative soil samples of stockpiled soils, 3) have an analytical laboratory test the samples for the presence of volatile hydrocarbons ("gasoline") with benzene, toluene, xylene, and ethylbenzene, extractable hydrocarbons ("diesel") and waste oil, 4) submit this letter report with analytical results, conclusions and recommendations.

BACKGROUND

On April 12, 1988, three fuel storage tanks and one waste oil tank were removed from the subject site. Subsequent to the removal, soil samples were taken of native soils, fill soils and water seepage. After the

425 Roland Way
Oakland, California 94621
(415) 568-4001
FAX: 415-568-2205

A California Corporation

sampling was performed, the excavated soils were returned to the excavation for temporary storage. Our letter report dated April 22, 1988 and a letter with revised analytical data, dated June 23, 1988, detail the results of our soil and water sampling findings and recommendations for contaminated soil remediation.

OBSERVATIONS AND SAMPLING

On August 3, 1988, Kaldveer Associates' personnel observed the complete removal of all loose and discolored soils from the former tank excavations. The soils were removed using an excavating backhoe. The backhoe placed the soil into a dump truck which transferred the soil to another portion of the site where the soil was placed on plastic sheeting. As soon as the removal was completed, the excavations were backfilled using imported fill materials.

On August 8, 1988, Kaldveer Associates' personnel took ten soil samples from the stockpiled soil piles. The sample locations are shown on Figure 1. The soils were obtained from approximately six inches below the surface of the soil pile by using a hand sampler which contained a two-inch diameter, six-inch long brass liner. The sampler and brass liners were cleaned with a trisodium phosphate solution, rinsed with clean water and then deionized water. The soil samples were rubber-capped, refrigerated and transported under chain-of-custody control to an analytical laboratory.

ANALYTICAL TESTING RESULTS

The analytical testing program consisted of the following analyses:

<u>Test Name</u>	<u>EPA Test Method</u>
Waste Oil Analysis	3550/SM503E
Total Petroleum Hydrocarbons (TPH) (gasoline) with BTXE	5020/8015/8020
Total Petroleum Hydrocarbons (diesel)	3550/8015

A summary of the analytical test results of all the samples is presented in the following table. The complete analytical test data, including the chain-of-custody record, are presented in the attached Appendix A.

SUMMARY OF TEST RESULTS
 (in parts per million, ppm)

Sample Number	Waste Oil	TPH Gasoline	TPH Diesel	Benzene	Toluene	Xylene	Ethylbenzene
1	ND	ND	ND	ND	ND	D	ND
2	ND	ND	ND	ND	ND	D	ND
3	67.0	91.1	21.0	0.29	ND	1.43	0.19
4	ND	4.6	D	D	ND	D	ND
5	ND	D	ND	ND	ND	D	ND
6	49	56.6	ND	0.15	ND	0.29	0.02
7	ND	D	ND	0.04	ND	D	D
8	270	18.8	D	0.06	ND	0.06	ND
9	480	5.9	D	ND	ND	ND	ND
10	ND	D	D	ND	ND	ND	ND

Note:

ND = Not detected

D = Detected but not quantifiable

CONCLUSIONS AND RECOMMENDATIONS

Our observations of the soil removal confirmed that all of the loose and contaminated soils had been removed from the excavations and stockpiled elsewhere on the site. The analytical data from soil samples taken from ten of the piles showed only four samples (Samples 3, 6, 8 and 9) had significant (~~_____~~) hydrocarbon contamination detected. The samples are assumed to be representative of the entire deposit, approximately 40% of the piles exceed 100 ppm TPH. In our opinion, these soils should be disposed of as contaminated soil and the remaining approximately 60% may be reused as fill soils. The approximate extent of contaminated soil is shown on Figure 1.

We understand that the contaminated soils will be removed from the site and disposed of at a Class I disposal site. We recommend that Kaldveer Associates be present during the soil removal process and observe the non-contaminated soils for possible pockets of contamination which should be disposed of with the contaminated soils. The remaining non-contaminated soils do not require any special disposal location.

Limitations

Our services have been performed in accordance with generally accepted soil and environmental engineering principles and practices. No other warranty, either expressed or implied is made. The analysis and conclusions contained in this letter report are based on the site conditions as they existed at the time of our investigation, discussions with site owners and governmental agents and on field and laboratory results from subcontractors. Changes in the information or the data gained from any of these sources could result in changes in our conclusions. If such changes do occur, we should be advised so that we can review our report in light of those charges.

It has been a pleasure to be of service to you. If you have any further questions, please call.

Very truly yours,

KALDVEER ASSOCIATES, INC.



David F. Hoexter, CEG
Manager, Environmental/
Geological Services



Ronald L. Bajuriemi
Vice President Engineering

DFH/RLB:jb

Copies: Addressee (2)

Kragen Auto Supply (2)

Attention: Mr. Tom Brown

Alameda County Hazardous Materials Division (2)

Enclosures: Figure 1 - Site Sketch Map

Appendix A - Analytical Laboratory Results and
Chain-of-Custody

APPENDIX I
CHAIN OF CUSTODY
AND
ANALYTICAL TEST RESULTS

CHAIN-OF-CUSTODY RECORD

Project Number		Project Name					Number/Type of Containers	Analytical Tests				Remarks
KE 431-93		Kragen						TPH-GAS	BTEX	TOG	TPH-DIESEL	
Sampler's Name (printed)												
ERIC SCHNIEWIND												
Boring Number	Date	Time	Soil	Water	Sample Location or Depth	Sample Number						
SP-1	8/8/88	Pm	X		soil pile	-	1	X	X	X	X	
SP-2			X			-	1	X	X	X	X	
SP-3			X			-	1	X	X	X	X	
SP-4			X			-	1	X	X	X	X	
SP-5			X			-	1	X	X	X	X	
SP-6			X			-	1	X	X	X	X	
SP-7			X			-	1	X	X	X	X	
SP-8			X			-	1	X	X	X	X	
SP-9			X			-	1	X	X	X	X	
SP-10			X			-	1	X	X	X	X	

Relinquished by: (Signature) <i>[Signature]</i>	Date/Time 8/9/88 10:20	Received by: (Signature) <i>[Signature]</i>
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time 8-9-88 12:43	Received for Laboratory by (Signature) <i>[Signature]</i>

Ship To: FIREMAN'S FUND LAB
 PETALUMA
 Attention: MARK VALENTINI
 Phone No: _____

Requested Turnaround Time: NORMAL
 Remarks:

Kaldveer Assoc. Contact: ERIC SCHNIEWIND Please address correspondence to:

Kaldveer Associates, Inc.
 425 Roland Way
 Oakland, California 94621
 (415) 568-4001





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3700 Lakeville Highway
Petaluma, CA 94952
800-FFIC-LAB

AUG 18 1988

ENVIRONMENTAL LABORATORY

Eric Schniewind
Kaldveer Associates, Inc.
425 Roland Way
Oakland, CA 94621

Client Code: KALD5
Survey # KE431-93

L A B O R A T O R Y R E S U L T S

Date Collected: 08/08/88

Laboratory Job No.: 883751
Date Received: 08/09/88
Date Reported: 08/16/88

WASTE OIL (EPA 3550/SM503E) MATRIX:SOIL

LAB NUMBER	CLIENT CODE	WASTE OIL mg/kg	DETECTION LIMIT mg/kg
50945	SP-1	<30	30
50946	SP-2	<30	30
50947	SP-3	67	30
50948	SP-4	<30	30
50949	SP-5	<30	30
50950	SP-6	49	30
50951	SP-7	<30	30
50952	SP-8	270	30
50953	SP-9	480	30

Handwritten signature



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L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 883751

LAB NUMBER	CLIENT CODE	WASTE OIL mg/kg	DETECTION LIMIT mg/kg
----- 50954	----- SP-10	----- <30	----- 30

NOTE: THIS IS AN AMENDED REPORT. 8/17/88.

ANALYST:ROBERT REMLINGER



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Date Collected: 08/08/88
Date Extracted: 08/10/88
Date Analyzed: 08/11/88

Laboratory Job No.: 883751
Date Received: 08/09/88
Date Reported: 08/16/88

ASSAY:TPH/GASOLINE & BTEX EPA 5020/8015/8020
MATRIX:SOIL

LABNO SMPLNO-ID -----	RESULTS -----	DET.LIM -----
50945 SP1 GASOLINE	<1.0 mg/kg	1.0 mg/kg
50946 SP2 GASOLINE	<1.0 mg/kg	1.0 mg/kg
50947 SP3 GASOLINE	91.1 mg/kg	1.0 mg/kg
50948 SP4 GASOLINE	4.6 mg/kg	1.0 mg/kg
50949 SP5 GASOLINE	DETECTED	1.0 mg/kg
50950 SP6 GASOLINE	56.6 mg/kg	1.0 mg/kg
50951 SP7 GASOLINE	DETECTED	1.0 mg/kg
50952 SP8 GASOLINE	18.8 mg/kg	1.0 mg/kg
50953 SP9 GASOLINE	5.9 mg/kg	1.0 mg/kg



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Laboratory Job No.: 883751

<u>LABNO</u> <u>SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
50954 SP10 GASOLINE	DETECTED	1.0 mg/kg

ANALYST: JEAN M. BONITE



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Date Collected: 08/08/88
Date Extracted: 08/10/88
Date Analyzed: 08/11/88

Laboratory Job No.: 883751
Date Received: 08/09/88
Date Reported: 08/16/88

MATRIX: SOIL

LABNO SMPLNO-ID	RESULTS	DET.LIM
50945 SP1		
BENZENE	<0.01 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	DETECTED	0.01 mg/kg
50946 SP2		
BENZENE	<0.01 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	DETECTED	0.01 mg/kg
50947 SP3		
BENZENE	0.29 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	0.19 mg/kg	0.01 mg/kg
XYLENE	1.43 mg/kg	0.01 mg/kg
50948 SP4		
BENZENE	DETECTED	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	DETECTED	0.01 mg/kg
50949 SP5		
BENZENE	<0.01 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	DETECTED	0.01 mg/kg



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Laboratory Job No.: 883751

<u>LABNO</u> <u>SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
50950 SP6		
BENZENE	0.15 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	0.02 mg/kg	0.01 mg/kg
XYLENE	0.29 mg/kg	0.01 mg/kg
50951 SP7		
BENZENE	0.04 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	DETECTED	0.01 mg/kg
XYLENE	DETECTED	0.01 mg/kg
50952 SP8		
BENZENE	0.06 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	0.06 mg/kg	0.01 mg/kg
50953 SP9		
BENZENE	<0.01 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	<0.01 mg/kg	0.01 mg/kg
50954 SP-10		
BENZENE	<0.01 mg/kg	0.01 mg/kg
TOLUENE	<0.01 mg/kg	0.01 mg/kg
ETHYLBENZENE	<0.01 mg/kg	0.01 mg/kg
XYLENE	<0.01 mg/kg	0.01 mg/kg

ANALYST: JEAN M. BONITE



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L A B O R A T O R Y R E S U L T S

Laboratory Job No.: 883751
Date Received: 08/09/88
Date Reported: 08/16/88

Date Collected: 08/08/88

ASSAY: SOLVENTS IN SOIL/WASTE BY EXTRACTION(GC/FID)
MATRIX: SOIL

<u>LABNO</u> <u>SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
50945 SP-1 DIESEL	<6.0 mg/kg	6.0 mg/kg
50946 SP-2 DIESEL	<6.0 mg/kg	6.0 mg/kg
50947 SP-3 DIESEL	21 mg/kg	6.0 mg/kg
50948 SP-4 DIESEL	DETECTED	6.0 mg/kg
50949 SP-5 DIESEL	<6.0 mg/kg	6.0 mg/kg
50950 SP-6 DIESEL	<6.0 mg/kg	6.0 mg/kg
50951 SP-7 DIESEL	<6.0 mg/kg	6.0 mg/kg
50952 SP-8 DIESEL	DETECTED	6.0 mg/kg
50953 SP-9 DIESEL	DETECTED	6.0 mg/kg



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Laboratory Job No.: 883751

<u>LABNO SMPLNO-ID</u>	<u>RESULTS</u>	<u>DET.LIM</u>
50954 SP-10 DIESEL	DETECTED	6.0 mg/kg

ANALYST: JEAN M. BONITE