Erler &
Kalinowski, Inc.

ADDITIONAL OFF-SITE GROUNDWATER INVESTIGATION REPORT

FORMER OIL RECYCLING SITE
4200 ALAMEDA AVENUE
OAKLAND, CALIFORNIA

10 November 1997
(EKI 930040.08)

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10 November 1997

Mr. Barney Chan
Hazardous Materials Specialist
Alameda County Health Department
of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Subject: Additional Off-Site Groundwater
Investigation Report
Former Oil Recycling Site
4200 Alameda Avenue, Oakland, California
(EKI 930040.08)

Dear Mr. Chan:

Erler & Kalinowski, Inc. is pleased to submit the enclosed *Additional Off-Site Groundwater Investigation Report* for the former oil recycling site located at 4200 Alameda Avenue, Oakland California. The report summarizes the findings of the additional off-site groundwater investigation performed in June 1997.

Please call if you have questions.

Very truly yours,

ERLER & KALINOWSKI, INC.

Andrew N. Safford, P.E.
Project Manager

Theodore G. Erler, P.E.
President

attachment

cc: Mr. Larry Webster

Mr. William Wick, Crosby, Heafey, Roach & May

Mr. Sum Arigala, Regional Water Quality Control Board

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PAGE

1.0 EXECUTIVE SUMMARY

In June 1997, Erler & Kalinowski, Inc. ("EKI") conducted an additional off-site groundwater investigation to confirm earlier findings that there has been no significant migration of chemicals from the 4200 Alameda Avenue property ("site"). The investigation was performed in accordance with the work plan, dated 20 November 1996, submitted to and approved by the Regional Water Quality Control Board, San Francisco Bay Region. Previous investigations have found chemicals from more than 50 years of oil recycling operations in soil and groundwater at the site, but virtually no migration of chemicals off-site.

The results of the additional off-site groundwater investigation corroborate previous investigative findings. Petroleum hydrocarbons attributable to releases at the site were not detected in any of the grab groundwater samples analyzed.

Petroleum hydrocarbons have been found in groundwater approximately 50 feet from the down-gradient edge of the site. The petroleum hydrocarbons detected are predominantly high molecular weight, with carbon chain lengths between C_{16} and C_{36}. These petroleum hydrocarbons are not mobile in groundwater due to their limited solubility in water. Consequently, it is unlikely that these high molecular weight petroleum hydrocarbons migrated in groundwater from the site. Other release mechanisms which explain the occurrence of petroleum hydrocarbons off-site include: historical surface releases of waste oil from trucks and rail cars transporting oil to and from the 4200 Alameda Avenue site, leaks from an underground oil pipeline located along East 8th Street, and/or spills of petroleum hydrocarbons from nearby properties.

Only low concentrations of benzene, toluene, ethyl benzene, total xylenes ("BTEX") and volatile organic compounds ("VOCs") have been detected in off-site groundwater. The only compound detected in off-site shallow groundwater above a State of California Maximum Contaminant Level ("MCL") is benzene. Concentrations of benzene above the MCL appear to be associated with immiscible petroleum hydrocarbons present in groundwater approximately 50 feet from the site. The benzene is believed to be dissolved in the oil and therefore not prone to migrate.

On the basis of these findings, no additional investigative activities are proposed. EKI recommends that a risk management plan be developed and implemented to address environmental conditions on the 4200 Alameda Avenue site itself.

2.0 PHYSICAL CHARACTERISTICS OF THE SITE

As shown on Figure 1, the site is located at 4200 Alameda Avenue in Oakland, California. Oil recycling took place on the site from approximately 1925 to 1981. It has been known by various names including "Bonus International, Inc.", "Bayside Oil Company", "Fabian Oil Refining Company", "Economy Refining & Service Company", "Economy Byproducts & Economy Service Company", and "Ekotek Lube, Inc." No activities have occurred on the site since oil recycling was discontinued. Waste oil received by the facility primarily consisted of oils from automobiles, railroad locomotives, aircraft, and electrical transformers. Stoddard solvent was also reportedly recycled at the facility until approximately 1978.

2.1 Surface Features

The site is a small, triangular-shaped property that encompasses less than 35,000 ft^2 or 0.8 acres. The site is bounded by Alameda Avenue along its western side, East 8th Street along its east-southeastern side, and the former American National Can Company ("ANCC") site along its northern side. The Site is fenced and completely covered with asphalt paving.

2.2 Geology and Hydrogeology

Soils immediately underlying pavement on- and off-site consist of artificial fill extending to approximately 1.5 to 4 feet below ground surface ("bgs"). This artificial fill overlays a silty clay that extends to a depth of 6 to 15 feet, bgs. Contained within this silty clay are 1 to 2 foot thick discontinuous lenses of clayey gravel and silty sand. Located beneath the silty clay is the first water-bearing unit. This first water-bearing unit ranges in thickness from approximately 1 to 5 feet and consists of clayey sands, sandy gravel, and gravely sand. Below this first water-bearing unit are clays and silty clays that extend to the maximum depth explored (i.e., 50 feet, bgs). Interbedded in these clays and silts are thin discontinuous sand lenses. The thickest of these discontinuous sand lenses were encountered between 38 and 40 feet, bgs and were 1 to 1.5 feet thick.

Groundwater is generally encountered at a depth of approximately 10 feet, bgs. Bulk groundwater movement at the 4200 Alameda Avenue site is to the south in the direction of San Leandro Bay (Figure 1).

3.0 NATURE AND EXTENT OF CHEMICAL PRESENCE

Several investigations have been performed to characterize the nature and extent of chemical presence on and off the 4200 Alameda Avenue site. Soil and groundwater sampling was performed at the Site in July 1995 (EKI, 1995) and during demolition activities between March and July 1996 (EKI, 1996a). Off-site soil and groundwater sampling was conducted in February 1996 (EKI, 1996b). The findings from these previous investigations are discussed below.

3.1 On-Site Soil and Groundwater Conditions

Chemicals from more than 50 years of oil recycling operations have been found at the site. The primary chemicals of concern detected in soil and groundwater at the site are petroleum hydrocarbons that are characteristic of waste lubricating oils. Also detected are other substances that may have been commingled with the oils. Such substances include polychlorinated biphenyls ("PCBs"), benzene, toluene, ethyl benzene, total xylenes ("BTEX"), and selected metals (chromium, lead, and zinc). Detected concentrations of these substances in groundwater are believed to be associated with free-phase petroleum hydrocarbons, and do not appear to be dissolved in groundwater itself.

The petroleum hydrocarbons detected at the site are predominantly high molecular weight (with carbon chain lengths between C_{16} and C_{36}). Petroleum hydrocarbons of this type are relatively viscous and insoluble in groundwater and relatively immobile in the subsurface (ASTM, 1995) Available data confirms the absence of any appreciable petroleum hydrocarbon migration in groundwater from the site.

3.2 Off-Site Soil and Groundwater Conditions

The off-site investigation performed in February 1996 found no vertical migration of chemicals below the upper water-bearing unit. In the upper water bearing-unit, there was no appreciable migration of BTEX, VOCs, and high molecular weight petroleum hydrocarbons. With the exceptions of two samples within 50 feet of the site, petroleum hydrocarbons were either not detected or were not characteristic of fuel hydrocarbons associated with the Site.

4.0 DESCRIPTION OF ADDITIONAL OFF-SITE GROUNDWATER INVESTIGATION

This section describes the objective and field activities that were performed as part of the additional off-site investigation.

4.1 Objective of Additional Off-Site Groundwater Investigation

On the basis of previous investigative findings, Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB") and Alameda County Department of Environmental Health ("ACDEH") requested additional sampling activities to confirm that immiscible hydrocarbons in groundwater do not exist beyond 50 feet from the site. EKI presented the scope of an additional off-site groundwater investigation intended to accomplish this objective in its letter, dated 20 November 1996.

RWQCB, acting as lead agency, provided comments on the scope of work of the additional off-site investigation in its letter, dated 16 December 1996. EKI modified the scope of work based on these comments and subsequent telephone conversations with RWQCB. Mr. Sumadhu Arigala, of RWQCB, orally approved the scope of work for the additional off-site groundwater investigation on 28 March 1997.

4.2 Additional Off-Site Groundwater Investigation Field Activities

The additional off-site groundwater investigation entailed completing six soil borings and collecting grab groundwater samples through the use of temporary PVC piezometers installed in each bore hole. Grab groundwater samples were analyzed for petroleum hydrocarbons, BTEX, and halogenated VOCs.

Field activities were performed from 23 to 25 June 1997. Using direct push technology, borings EO-1 through EO-6 were completed at the locations shown on Figure 2. These locations were selected to supplement cone penetrometer testing ("CPT") and Push-in-PVC-Piezometer ("PIPP") groundwater sampling previously conducted along public right-of-ways. Previous CPT/PIPP locations, CPT-1 and CPT-3 through CPT-7, also are shown on Figure 2. Because underground pipelines and utilities restricted the sampling locations along City of Oakland streets, borings EO-1 through EO-6 were completed on private properties. Before conducting sampling activities, temporary access agreements were negotiated with property owners and a drilling permit was obtained from the Alameda County Flood Control and Water Conservation District.

4.2.1 Direct Push Technology

EKI retained Precision Sampling, Inc. to complete the soil borings and collect groundwater samples using its direct push technology patented under the trade name Enviro-Core®. The Enviro-Core® system consists of a hydraulically operated sampling rig that simultaneously pushes a 1-5/8 inch diameter outer casing and an inner 3 feet long sample barrel attached to rods. Collection of a continuous soil core is accomplished by pushing the sample barrel into the ground at 3 feet intervals. The sample barrel is removed from the bore hole by pulling the rods to which the sample barrel is attached. The outer casing remains to prevent the bore hole from collapsing. The sample barrel is opened at the surface, the soil core is removed, and the sample barrel is reinserted inside the casing to be pushed the next 3 feet. The process is repeated until the desired depth is reached. Boring EO-1 through EO-6 each were extended to a depth of approximately 16 feet, bgs.

EKI personnel, under the supervision of a State of California Registered Geologist, lithologically logged soil cores from each boring. EKI personnel screened soil cores for the presence of VOCs with an organic vapor meter ("OVM"). OVM screening results were recorded on the soil boring logs. Copies of soil boring logs are presented as Appendix A.

4.2.2 Grab Groundwater Sampling Procedures

Precision Sampling, Inc. inserted a pre-cleaned one-inch diameter PVC slotted casing inside the outer casing pushed into the ground at each sampling location. The outer casing was then removed leaving the PVC slotted casing in the bore hole. EKI had planned to collect at least two groundwater samples from each boring. The first groundwater sample was to have been collected upon inserting the PVC slotted casing into the bore hole. The intent of immediately collecting the first sample was to minimize the potential loss of BTEX and VOCs. The second groundwater sample was to have been collected after the PVC slotted casing had been in the boring for at least 24 hours. The intent of waiting to collect the second sample was to allow time for immiscible petroleum hydrocarbons, if any, to accumulate in the boring. EKI covered each bore hole with metal plate to reduce the potential for dust and other material from entering the slotted casing and potentially interfering with groundwater sample results.

EKI was unable to immediately collect samples because of the slow rates of groundwater recharge, if any, into the borings. For those borings in which water accumulated, EKI had to collect groundwater over several days to obtain a sufficient quantity to perform laboratory analyses. Groundwater samples were collected by lowering a pre-cleaned Teflon bailer into the PVC slotted casing exposed to formation groundwater. Enviro-Core® bore holes were abandoned as discussed in Section 4.2.3.

Groundwater samples were collected in containers as specified by the appropriate EPA Method. Groundwater samples were refrigerated and delivered under chain-of-custody procedure to Sequoia Analytical Laboratory for testing as discussed in Section 4.2.4.

4.2.3 Abandonment of Enviro-Core® Bore Holes

Upon completing sampling, Precision Sampling, Inc. removed the PVC slotted casing from each boring. The remaining open Enviro-Core® bore holes were filled with a bentonite/cement mixture. Precision Sampling, Inc. placed a tremie pipe to the bottom of each hole. Grout was poured down the pipe and the pipe was withdrawn, allowing grout to backfill and seal the hole from the bottom of the hole to ground surface.

4.2.4 Analysis of Grab Groundwater Samples

For those locations where sufficient quantities of groundwater could be obtained, grab groundwater samples were analyzed for the following:

- Total purgeable petroleum hydrocarbons as gasoline by EPA Method 8015m
- Total extractable petroleum hydrocarbons as diesel by EPA Method 8015m
- Fuel Fingerprint as motor oil by EPA Method 8015m
- BTEX by EPA Method 8020
- Halogenated VOCs by EPA Method 8010

Copies of the analytical testing reports are included as Appendix B.

4.2.5 Land Survey Activities

MacLeod and Associates, Inc., a licensed land surveyor, surveyed the Enviro-Core® boring locations. Locations were surveyed to establish elevations and horizontal locations relative to a Site monument. Survey data were used to prepare figures and cross-sections.

Nov 10, 1997 Report.

5.0 RESULTS OF ADDITIONAL OFF-SITE GROUNDWATER INVESTIGATION

The results of the additional off-site groundwater investigation corroborate previous investigative findings. No significant migration of petroleum hydrocarbons or other chemicals in groundwater has occurred from the 4200 Alameda Avenue site.

5.1 Evaluation of Preferential Groundwater Flow Paths

As part of the additional off-site investigation, the RWQCB requested that EKI review available utility drawings to evaluate if chemical-containing groundwater might be moving preferentially in bedding sands surrounding pipes or conduits. Underground pipes and conduits that might serve as preferential groundwater flow paths are located along Alameda Avenue. These underground utilities generally run in an east to west direction that is perpendicular to the southerly bulk groundwater movement towards San Leandro Bay. Underground utilities present along Alameda Avenue include East Bay Municipal Utility District ("EBMUD") storm drains and sanitary sewers, and Pacific Gas and Electrical Company ("PG&E") electrical lines and natural gas mains.

Review of EBMUD drawings indicates that the inverts of the storm drains and sanitary sewers are between 4 and 5 feet, bgs in the vicinity of the site. PG&E representatives stated that PG&E buries all electrical lines and natural gas mains between 2 and 4 feet, bgs. On the basis of information obtained, all underground utilities appear to be at least 5 feet above the first permeable unit that contains groundwater and is encountered at a depth of approximately 10 feet, bgs. Groundwater flow in bedding sands is unlikely because no hydraulic connection exists between underground utilities and the first permeable unit.

Should they provide copies?

Two cross-sections have been prepared to illustrate the stratigraphy along Alameda Avenue. The locations of these cross-sections are shown on Figure 2. Presented on Figure 3 are a south to north cross section (A-A') and a west to east cross-section (B-B'). These cross-sections were compiled from lithologic logs of borings completed on the site and logs obtained from CPT and Enviro-Core® borings completed off-site.

5.2 No Evidence of Significant Migration of Chemicals in Groundwater

Summarized in Table 1 and shown on Figure 4 are total petroleum hydrocarbon ("TPH") analytical results of groundwater samples collected as part of the additional off-site groundwater investigation. Groundwater samples were also analyzed for BTEX and halogenated VOCs. Analytical results for these compounds are summarized in Tables 2 and 3 and shown on Figures 4 and 5.

5.2.1 Petroleum Hydrocarbons in Off-site Groundwater

The results of the additional off-site groundwater investigation corroborate the findings of off-site soil and groundwater sampling that was conducted by EKI in 1996. Previous sampling results found significant concentrations of petroleum hydrocarbons only at locations CPT-1 and CPT-3. These CPT locations are situated approximately 50 feet from the down-gradient edge of the 4200 Alameda Avenue site as shown on Figure 4.

Although approximately equivalent concentrations of TPH as diesel and motor oil were reported in groundwater samples collected from CPT-1 and CPT-3, review of the chromatograms for these samples (Appendix B) indicate that the TPH is predominantly high molecular weight with carbon chain lengths between C_{16} and C_{36}. Equal concentrations of TPH as diesel and TPH as motor oil result from the overlap in carbon chain lengths when quantitating these petroleum hydrocarbon fractions. The high molecular weight hydrocarbons detected at CPT-1 and CPT-3 are not likely to be mobile in groundwater due to their limited solubility in water. Consequently, it is unlikely that petroleum hydrocarbons have migrated in groundwater from the site. The high molecular weight petroleum hydrocarbons in groundwater at CPT-1 and CPT-3 may result from sources in proximity to but not on 4200 Alameda Avenue such as historical surface releases of waste oil from trucks and rail cars transporting oil to and from the 4200 Alameda Avenue site, leaks from an underground oil pipeline located along East 8th Street (Figure 2), and spills of petroleum hydrocarbons from nearby properties.

this is a mix of TPHd+mo

I don't agree

The lack of petroleum hydrocarbon mobility is supported by Enviro-Core® groundwater sampling results. No petroleum hydrocarbons characteristic of diesel or motor oil were detected in the samples from the three borings (i.e., EO-1, EO-2, and EO-3) where sufficient quantities of groundwater could be obtained. As summarized in Table 1 and shown on Figure 4, no TPH as motor oil was measured above Sequoia Analytical laboratory method reporting limit of 500 ug/L in samples obtained from EO-1, EO-2, and EO-3. Sequoia Analytical detected organic compounds that were reported as TPH as diesel. TPH as diesel was measured at 100 ug/L in EO-1, 190 ug/L in EO-2, and 410 ug/L in EO-3. However, compounds quantitated as TPH as diesel are most likely due to some other type of organic matter in the groundwater samples, as noted on the laboratory narratives prepared by Sequoia Analytical (Appendix B). This organic matter is likely to be naturally-occurring and is common in a bay mud environment. Off-site grab groundwater samples collected by EKI in 1996 also contained naturally-occurring organic matter that was quantitated as TPH as diesel at concentrations ranging from 120 ug/L to 990 ug/L.

then should do Silica gel cleanup

EKI could not obtain sufficient quantities of groundwater from Enviro-Core® borings EO-4, EO-5, and EO-6 to perform testing for TPH as diesel or TPH as motor oil. The slow rates of groundwater recharge suggest that sands encountered in these borings are not highly conductive to groundwater flow. TPH as gasoline data further supports the

finding that chemicals in groundwater from 4200 Alameda Avenue are not migrating in the direction of borings EO-4, EO-5, and EO-6. Although TPH as gasoline is a minor fraction of the petroleum hydrocarbons detected in groundwater from the Site, TPH as gasoline is more soluble and, hence, more mobile than either TPH as diesel or TPH as motor oil. If petroleum hydrocarbons were migrating in groundwater towards borings EO-4, EO-5, and EO-6, then some TPH as gasoline would be expected in groundwater samples from these borings. However, TPH as gasoline was not detected in groundwater samples collected from boring EO-4 and EO-6. EKI was unable to collect a sufficient quantity of groundwater from boring EO-5 for analysis of TPH as gasoline.

As shown in Table 1 and Figure 4, only the groundwater sample from boring EO-3 contained detectable concentrations of TPH as gasoline. TPH as gasoline was measured at 77 ug/L in the groundwater sample from EO-3. TPH as gasoline detected in the groundwater sample from this boring may be due to releases unrelated to 4200 Alameda Avenue. Review of regulatory agency files by EKI (1996b) revealed that other sources of petroleum hydrocarbons exist in the vicinity of the 4200 Alameda Avenue site. Sites that stored petroleum products and may have had releases to soil or groundwater include the former ANCC property and the former United States Cold Storage site located at 3925 Alameda Avenue.

TPH as gasoline detected in EO-3 may be associated with petroleum hydrocarbons detected in CPT-5. Boring EO-3 is located approximately 100 feet, in a direction that is cross- or down-gradient of groundwater flow, from CPT-5. The groundwater sample from CPT-5 contained 570 ug/L of TPH as gasoline. No TPH representative of fuel hydrocarbons was detected in the shallow groundwater sample collected from CPT-4. As shown on Figure 4, CPT-4 is located up-gradient of CPT-5 and close to 4200 Alameda Avenue. Given the identified potential release sites and history of manufacturing that has taken place in the area, TPH as gasoline detected in groundwater samples collected from EO-3 and CPT-5 is not believed to originate from 4200 Alameda Avenue.

5.2.2 BTEX and Halogenated VOCs in Off-site Groundwater

Except for Enviro-Core® boring EO-5, EKI obtained sufficient quantities of groundwater to perform testing for BTEX and halogenated VOCs. The small quantity of groundwater obtained from EO-5 permitted only testing for halogenated VOCs. BTEX and certain halogenated VOCs were detected in shallow groundwater samples collected from CPT and Enviro-Core® borings (Tables 2 and 3; Figures 4 and 5).

The only compound detected in off-site shallow groundwater above a State of California Maximum Contaminant Level ("MCL") is benzene. Benzene was measured at 140 ug/L in CPT-1, 11 ug/L in CPT-3, and 7.5 ug/L in CPT-5. The MCL for benzene is 1 ug/L. Concentrations of benzene above the MCL in CPT-1 and CPT-3 appear to be associated with immiscible petroleum hydrocarbons present in groundwater at these locations. The benzene is likely to be dissolved in the oil and therefore not prone to migrate. Benzene

measured in CPT-5 is thought to be associated with TPH detected at this location. Benzene and petroleum hydrocarbons in groundwater at CPT-5 are not believed to be associated with the 4200 Alameda Avenue site as discussed in Section 5.2.1.

The additional off-site groundwater investigation was intended particularly to address RWQCB concerns regarding the migration of vinyl chloride in groundwater from the Site. As shown on Figure 5, vinyl chloride has not been detected above the method reporting limit of 1 ug/L in shallow groundwater samples collected from CPT and Enviro-Core® borings completed by EKI.

6.0 CONCLUSIONS

The results of the additional off-site groundwater investigation corroborate previous investigative findings. These findings are as follows:

- No significant migration of petroleum hydrocarbons in groundwater has occurred from the 4200 Alameda Avenue site. Petroleum hydrocarbons attributable to releases at the site were not detected in any of the grab groundwater samples analyzed. Petroleum hydrocarbons found in groundwater approximately 50 feet from the down-gradient edge of the site are predominantly high molecular weight with carbon chain lengths between C_{16} and C_{36}, and are not mobile in groundwater due to their limited solubility in water. Consequently, it is unlikely that high molecular weight petroleum hydrocarbons migrated in groundwater from the site. The occurrence of petroleum hydrocarbons off-site may be the result of historical surface releases from other sources.

- Only low concentrations of BTEX and halogenated VOCs have been detected in off-site groundwater. Benzene is the only compound that has been detected in off-site shallow groundwater above a State of California Maximum Contaminant Level ("MCL"). Concentrations of benzene above the MCL appear to be associated with immiscible petroleum hydrocarbons present in groundwater approximately 50 feet from the site. The benzene is believed to be dissolved in the oil and therefore not prone to migrate.

No additional investigative activities are proposed based on the above findings. Review of CPT and Enviro-Core® sampling data indicate active control (i.e., groundwater extraction and treatment) of groundwater is not warranted because there has not been appreciable migration of TPH, BTEX, or VOCs in groundwater from the site. EKI recommends that a risk management plan be developed and implemented to address environmental conditions on the 4200 Alameda Avenue site itself.

7.0 REFERENCES

American Society for Testing and Materials ("ASTM"), *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*, 1995

Erler & Kalinowski, Inc. ("EKI"), 12 August 1996a, *Demolition and Excavation Report,* Former Oil Recycling Site, 4200 Alameda Avenue, Oakland, California.

EKI, 16 May 1996b, *Off-site Groundwater Investigation Report*, Former Oil Recycling Site, 4200 Alameda Avenue, Oakland, California.

EKI, September 1995, *Preliminary Investigation Report*, Former Oil Recycling Site, 4200 Alameda Avenue, Oakland, California.

TABLE 1

TOTAL PETROLEUM HYDROCARBON (TPH) ANALYTICAL RESULTS OF GRAB GROUNDWATER SAMPLES

4200 Alameda Avenue, Oakland, California

(EKI 930040.08)

Sample ID	Sample Depth (feet)	Sample Date	TPH (as gasoline) Concentration		TPH (as diesel) Concentration		TPH (as motor oil) Concentration	
			(ug/L)	Description of Chromatogram Pattern	(ug/L)	Description of Chromatogram Pattern	(ug/L)	Description of Chromatogram Pattern
EO-1	11 -16	6/23/97	<50 (a)	--	**100 (b)**	Unidentifiable pattern of hydrocarbons in C_9-C_{24} range	<500	--
EO-2	11 -16	6/24/97	<50	--	**190 (b)**	Unidentifiable pattern of hydrocarbons in C_9-C_{24} range	<500	--
EO-3	11 -16	6/23/97	77	Unidentifiable pattern of hydrocarbons in C_6-C_{12} range	**190 (b)**	Unidentifiable pattern of hydrocarbons in C_9-C_{24} range	<500	--
EO-3 (dup); (d)	11 -16	6/23/97	--	--	**410 (b)**	Unidentifiable pattern of hydrocarbons in C_9-C_{24} range	<500	--
EO-4	11 -16	6/25/97	<50	--	(c)	--	(c)	--
EO-5	11 -16	6/25/97	(c)	--	(c)	--	(c)	--
EO-6	11 -16	6/24/97	<50	--	(c)	--	(c)	--

Notes:

(a) Less than symbol ("<") denotes that compound was not present above the detection limit shown.

(b) According to the laboratory narrative prepared by Sequoia Analytical, quantitated TPH value is most likely due to organic matter other than petroleum fuels.

(c) Insufficient quantity of groundwater in boring to collect adequate sample for laboratory analysis.

(d) Field duplicate sample collected from boring EO-3.

TABLE 2
BENZENE, TOLUENE, ETHYL BENZENE, TOTAL XYLENES (BTEX)
ANALYTICAL RESULTS OF GRAB GROUNDWATER SAMPLES

4200 Alameda Avenue, Oakland, California
(EKI 930040.08)

Sample ID	Sample Depth (feet bgs)	Sample Date	BTEX Concentration (ug/L)			
			Benzene	Toluene	Ethylbenzene	Total Xylenes
EO-1	11 - 16	6/23/97	<0.5 (a)	<0.5	<0.5	<0.5
EO-2	11 - 16	6/24/97	<0.5	<0.5	<0.5	<0.5
EO-3	11 - 16	6/23/97	<0.5	<0.5	<0.5	**0.67**
EO-4	11 - 16	6/25/97	<0.5	<0.5	<0.5	**0.75**
EO-5	11 - 16	6/25/97	(b)	--	--	--
EO-6	11 - 16	6/24/97	<0.5	<0.5	<0.5	<0.5

Notes:

(a) Less than symbol ("<") denotes that compound was not present above the detection limit shown.

(b) Insufficient quantity of groundwater in boring to collect adequate sample for laboratory analysis.

TABLE 3

HALOGENATED VOLATILE ORGANIC COMPOUND ANALYTICAL RESULTS OF GRAB GROUNDWATER SAMPLES

4200 Alameda Avenue, Oakland, California

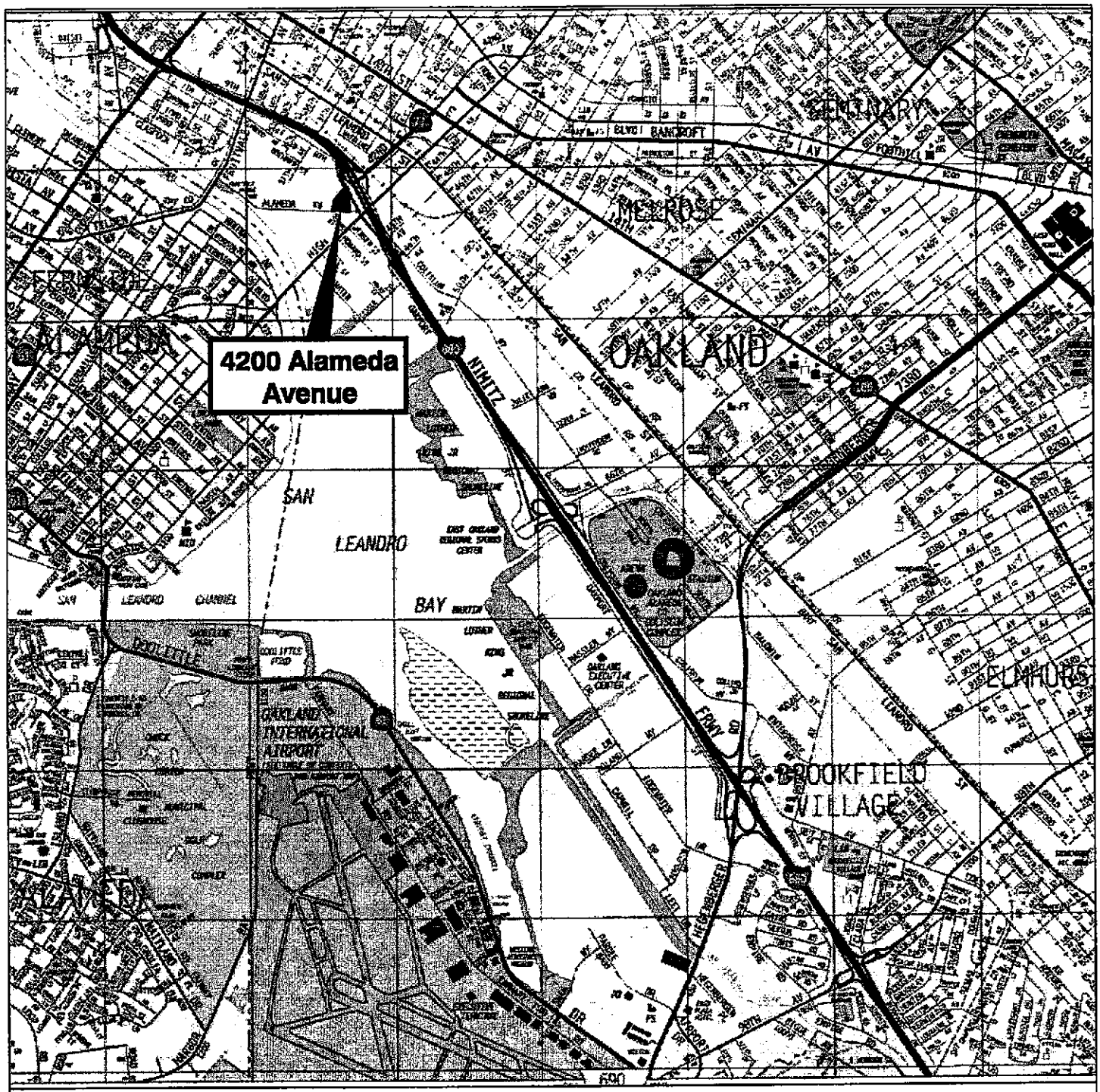
(EKI 930040.08)

Sample ID	Sample Depth Interval (ft. bgs)	Sample Date	Halogenated Volatile Organic Compound Concentration in ug/l															
			1,2-dichloroethane	1,2-dichloropropane	Chlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,1,1-trichloroethane	1,1-dichloroethene	Chloroethane	Tetrachloroethene	Trichloroethene	cis-1,2-dichloroethene	trans-1,2-dichloroethene	Vinyl Chloride	Chloroform	Carbon Tetrachloride
EO-1	10-15	6/23/97	<0.5 (a)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
EO-2	10-15	6/24/97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
EO-3	10-15	6/23/97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5
EO-4	10-15	6/25/97	**1.5**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	**1.2**	<0.5	<1	<0.5	<0.5
EO-5	10-15	6/25/97	<1.2	<1.2	**1.9 (b)**	<1.2	<1.2	<1.2	<1.2	<1.2	<2.5	<1.2	<1.2	<1.2	<1.2	<2.5	<1.2	<1.2
EO-6	10-15	6/24/97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5

Notes:

(a) Less than symbol ("<") denotes that compound was not present above the detection limit shown.

(b) Sequoia Analytical unable to confirm sample result due to limited quantity of sample submitted for testing.



Source: The Thomas Guide, Alameda/Contra Costa Counties; 1997 Edition.

N

0 1500 3000

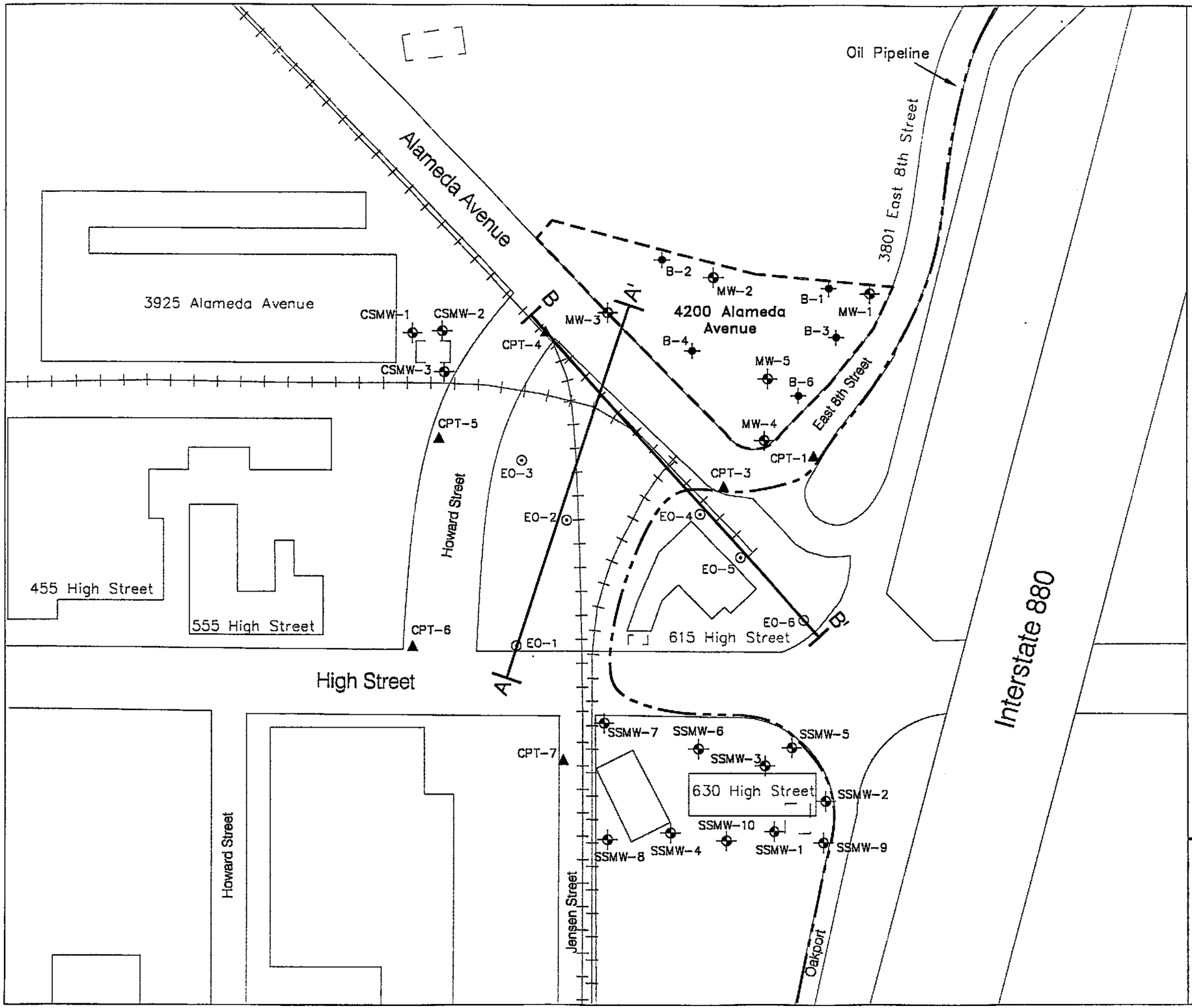
(Approximate Scale in Feet)

Erler & Kalinowski, Inc.

Vicinity Map

4200 Alameda Avenue
Oakland, CA
November 1997
EKI 930040.08

Figure 1



N

0 100 200

(Approximate Scale in Feet)

LEGEND

- Site Boundary
- Cross-Section Location
- Monitoring Well
- Soil Boring
- CPT/PIPP Sampling Location
- EnviroCore Boring
- Approximate Location of Former Underground Storage Tanks

Notes:

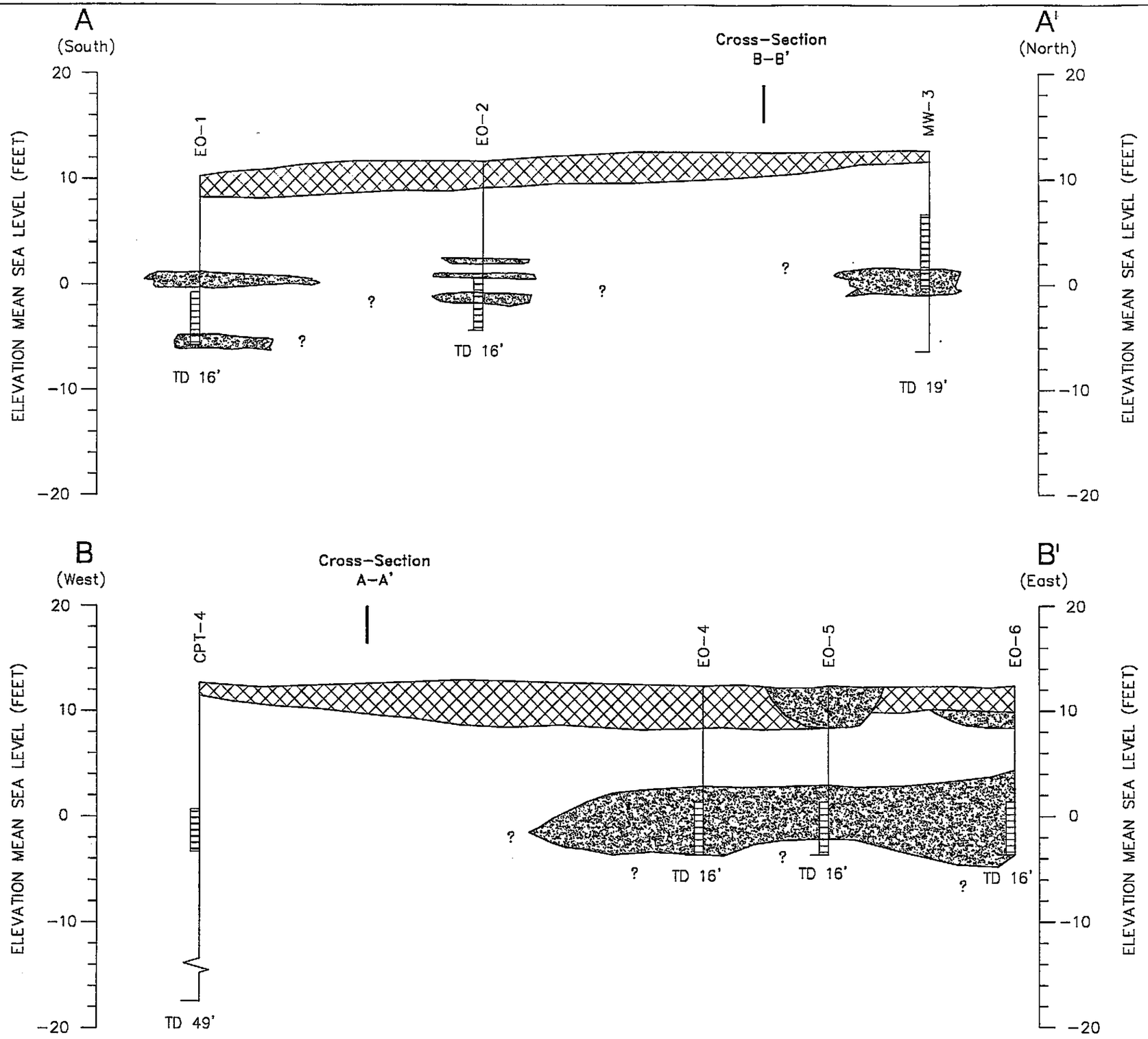
1. All locations are approximate.
2. Basemap from 1993 Pacific Aerial Survey photograph.

Erler & Kalinowski, Inc.

Site Map and Cross-Section Locations

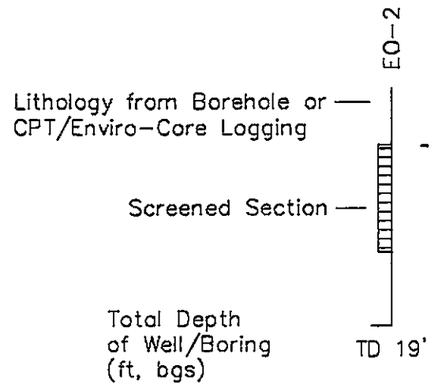
4200 Alameda Avenue
Oakland, CA
November 1997
EKI 930040.08
Figure 2

97 Nov 10 11:36:45 G:\930040.08\NOV97\Site-02.dwg



LEGEND

- Fill
- Clay and Silt (CL, ML)
- Sand and Gravel (SM, SP, SC, GP, GW)



SCALE IN FEET

0 50

0

10

5X VERTICAL EXAGGERATION

Notes:

1. Soils logged using Unified Soil Classification System.

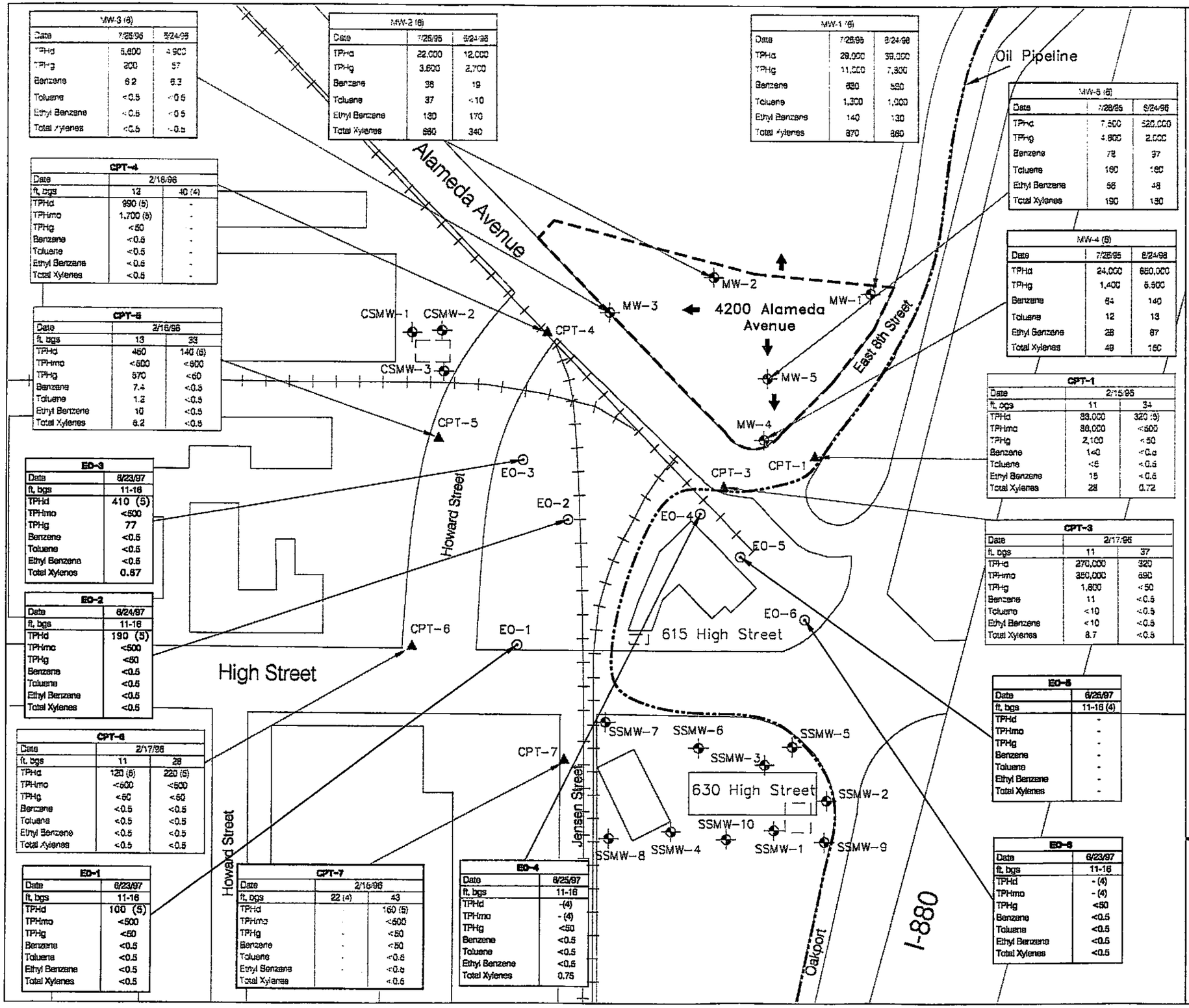
Erler & Kalinowski, Inc.

Cross–Sections A–A' and B–B'

4200 Alameda Avenue
Oakland, CA
November 1997
EKI 930040.08

Figure 3

97 Nov 10 11:37:54 G:\930040.08\NOV97\Xsect-03.dwg



MW-3 (6)		
Date	7/25/95	8/24/98
TPHd	5,800	4,900
TPHg	200	57
Benzene	6.2	6.3
Toluene	<0.5	<0.5
Ethyl Benzene	<0.5	<0.5
Total Xylenes	<0.5	<0.5

MW-2 (6)		
Date	7/26/95	8/24/98
TPHd	22,000	12,000
TPHg	3,600	2,700
Benzene	36	19
Toluene	37	<10
Ethyl Benzene	130	170
Total Xylenes	660	340

MW-1 (6)		
Date	7/25/95	8/24/98
TPHd	29,000	39,000
TPHg	11,000	7,300
Benzene	830	530
Toluene	1,300	1,000
Ethyl Benzene	140	130
Total Xylenes	870	860

MW-5 (6)		
Date	7/26/95	8/24/98
TPHd	7,500	525,000
TPHg	4,800	2,000
Benzene	78	97
Toluene	160	160
Ethyl Benzene	56	48
Total Xylenes	190	130

MW-4 (6)		
Date	7/25/95	8/24/98
TPHd	24,000	650,000
TPHg	1,400	5,500
Benzene	84	140
Toluene	12	13
Ethyl Benzene	28	87
Total Xylenes	48	160

CPT-4		
Date	2/16/96	
ft. bgs	12	40 (4)
TPHd	990 (5)	-
TPHmo	1,700 (5)	-
TPHg	<50	-
Benzene	<0.5	-
Toluene	<0.5	-
Ethyl Benzene	<0.5	-
Total Xylenes	<0.5	-

CPT-5		
Date	2/16/96	
ft. bgs	13	33
TPHd	450	140 (5)
TPHmo	<500	<500
TPHg	570	<50
Benzene	7.4	<0.5
Toluene	1.2	<0.5
Ethyl Benzene	10	<0.5
Total Xylenes	8.2	<0.5

CPT-1		
Date	2/15/96	
ft. bgs	11	34
TPHd	33,000	320 (5)
TPHmo	36,000	<500
TPHg	2,100	<50
Benzene	140	<0.5
Toluene	<5	<0.5
Ethyl Benzene	15	<0.5
Total Xylenes	28	0.72

CPT-3		
Date	2/17/96	
ft. bgs	11	37
TPHd	270,000	320
TPHmo	350,000	690
TPHg	1,800	<50
Benzene	11	<0.5
Toluene	<10	<0.5
Ethyl Benzene	<10	<0.5
Total Xylenes	8.7	<0.5

EO-3	
Date	8/23/97
ft. bgs	11-16
TPHd	410 (5)
TPHmo	<500
TPHg	77
Benzene	<0.5
Toluene	<0.5
Ethyl Benzene	<0.5
Total Xylenes	0.67

EO-2	
Date	8/24/97
ft. bgs	11-16
TPHd	190 (5)
TPHmo	<500
TPHg	<50
Benzene	<0.5
Toluene	<0.5
Ethyl Benzene	<0.5
Total Xylenes	<0.5

EO-5	
Date	8/25/97
ft. bgs	11-16 (4)
TPHd	-
TPHmo	-
TPHg	-
Benzene	-
Toluene	-
Ethyl Benzene	-
Total Xylenes	-

CPT-6		
Date	2/17/96	
ft. bgs	11	28
TPHd	120 (5)	220 (5)
TPHmo	<500	<500
TPHg	<50	<50
Benzene	<0.5	<0.5
Toluene	<0.5	<0.5
Ethyl Benzene	<0.5	<0.5
Total Xylenes	<0.5	<0.5

EO-1	
Date	8/23/97
ft. bgs	11-16
TPHd	100 (5)
TPHmo	<500
TPHg	<50
Benzene	<0.5
Toluene	<0.5
Ethyl Benzene	<0.5
Total Xylenes	<0.5

CPT-7		
Date	2/16/96	
ft. bgs	22 (4)	43
TPHd	-	160 (5)
TPHmo	-	<500
TPHg	-	<50
Benzene	-	<0.5
Toluene	-	<0.5
Ethyl Benzene	-	<0.5
Total Xylenes	-	<0.5

EO-4	
Date	8/25/97
ft. bgs	11-16
TPHd	-(4)
TPHmo	- (4)
TPHg	<50
Benzene	<0.5
Toluene	<0.5
Ethyl Benzene	<0.5
Total Xylenes	0.75

EO-6	
Date	8/23/97
ft. bgs	11-16
TPHd	- (4)
TPHmo	- (4)
TPHg	<50
Benzene	<0.5
Toluene	<0.5
Ethyl Benzene	<0.5
Total Xylenes	<0.5

N

0 100 200

(Approximate Scale in Feet)

LEGEND

- Site Boundary
- Monitoring Well
- CPT/PIPP Sampling Location
- Enviro-Core Boring
- Approximate Location of Former Underground Storage Tanks
- Shallow Groundwater Flow Direction

Abbreviations

TPHD = Total Petroleum Hydrocarbons as Diesel

TPHmo = Total Petroleum Hydrocarbons as Motor Oil

TPHg = Total Petroleum Hydrocarbons as Gasoline

Notes:

1. All locations are approximate.
2. Basemap from 1993 Pacific Aerial Survey photograph.
3. Concentrations in ug/L (ppb).
4. Insufficient groundwater to allow sample collection.
5. Analytical laboratary indicates that concentration may reflect naturally-occuring organic matter present in groundwater.
6. Immiscible hydrocarbons present in groundwater samples. Measured concentrations likely include quantitation of constitutents in both the immiscible and soluble phases.

Erler & Kalinowski, Inc.

Petroleum Hydrocarbons and BTEX in Groundwater

4200 Alameda Avenue
Oakland, CA
November 1997
EKI 930040.08
Figure 4

97 Nov 10 11:38:36 G:\930040.08\NOV97\Btex-04.dwg

CPT-4		
Date	2/16/96	
ft. bgs	12	40 (4)
Chlorobenzene	<0.5	
1,2 - DCB	<0.5	
1,3 - DCB	<0.5	
1,4 - DCB	<0.5	
1,1 - DCA	3.8	
Chloroethane	<1	-
cis - 1,2 - DCE	1.5	-
trans - 1,2 -DCE	<0.5	
Vinyl Chloride	<1	-

CPT-5		
Date	2/16/96	
ft. bgs	13	33
Chlorobenzene	<0.5	<0.5
1,2 - DCB	<0.5	<0.5
1,3 - DCB	<0.5	<0.5
1,4 - DCB	<0.5	<0.5
1,1 - DCA	<0.5	<0.5
Chloroethane	<1	<1
cis - 1,2 - DCE	<0.5	<0.5
trans - 1,2 -DCE	<0.5	<0.5
Vinyl Chloride	<1	<1

EO-3	
Date	6/23/97
ft. bgs	11-16
Chlorobenzene	<0.5
1,2 - DCB	<0.5
1,3 - DCB	<0.5
1,4 - DCB	<0.5
1,1 - DCA	<0.5
Chloroethane	<1
cis - 1,2 - DCE	<0.5
trans - 1,2 -DCE	<0.5
Vinyl Chloride	<1

EO-2	
Date	6/24/97
ft. bgs	11-16
Chlorobenzene	<0.5
1,2 - DCB	<0.5
1,3 - DCB	<0.5
1,4 - DCB	<0.5
1,1 - DCA	<0.5
Chloroethane	<1
cis - 1,2 - DCE	<0.5
trans - 1,2 -DCE	<0.5
Vinyl Chloride	<1

CPT-6		
Date	2/17/96	
ft. bgs	11	28
Chlorobenzene	<0.5	0.54
1,2 - DCB	<0.5	<0.5
1,3 - DCB	<0.5	<0.5
1,4 - DCB	<0.5	<0.5
1,1 - DCA	1.3	<0.5
Chloroethane	<1	<1
cis - 1,2 - DCE	<0.5	<0.5
trans - 1,2 -DCE	<0.5	<0.5
Vinyl Chloride	<1	<1

EO-1	
Date	6/23/97
ft. bgs	11-16
Chlorobenzene	<0.5
1,2 - DCB	<0.5
1,3 - DCB	<0.5
1,4 - DCB	<0.5
1,1 - DCA	<0.5
Chloroethane	<1
cis - 1,2 - DCE	<0.5
trans - 1,2 -DCE	<0.5
Vinyl Chloride	<1

MW-3 (5)		
Date	7/28/95	8/24/98
Chlorobenzene	<0.5	<0.5
1,2-DCB	1.7	<0.5
1,3-DCB	<0.5	<0.5
1,4-DCB	<0.5	<0.5
1,1-DCA	<0.5	<0.5
Chloroethane	1.2	1.0
cis-1,2-DCE	<0.5	<0.5
trans-1,2-DCE	<0.5	<0.5
Vinyl Chloride	<0.5	<0.5

MW-2 (5)		
Date	7/28/95	8/24/98
Chlorobenzene	7.3	7.4
1,2-DCB	48	88
1,3-DCB	1.6	4.0
1,4-DCB	8	16
1,1-DCA	4.8	15
Chloroethane	5.8	8.2
cis-1,2-DCE	<1.3	20
trans-1,2-DCE	<1.3	<2.5
Vinyl Chloride	<2.5	4.1

MW-1 (5)		
Date	7/28/95	8/24/98
Chlorobenzene	<50	<50
1,2-DCB	<50	<50
1,3-DCB	<50	<50
1,4-DCB	<50	<50
1,1-DCA	130	88
Chloroethane	<100	<50
cis-1,2-DCE	2,300	2,800
trans-1,2-DCE	91	110
Vinyl Chloride	3,100	3,100

MW-5 (5)		
Date	7/28/95	8/24/98
Chlorobenzene	<100	<100
1,2-DCB	<100	<100
1,3-DCB	<100	<100
1,4-DCB	<100	<100
1,1-DCA	160	150
Chloroethane	<200	<100
cis-1,2-DCE	3,700	2,800
trans-1,2-DCE	130	160
Vinyl Chloride	5,200	4,200

MW-4 (5)		
Date	7/28/95	8/24/98
Chlorobenzene	<50	<100
1,2-DCB	<50	<100
1,3-DCB	<50	<100
1,4-DCB	<50	<100
1,1-DCA	<50	<100
Chloroethane	<50	<100
cis-1,2-DCE	2,000	3,100
trans-1,2-DCE	50	<100
Vinyl Chloride	3,600	4,200

CPT-1		
Date	2/16/95	
ft. bgs	11	34
Chlorobenzene	28	<0.5
1,2 - DCB	48	<0.5
1,3 - DCB	4.3	<0.5
1,4 - DCB	25	<0.5
1,1 - DCA	<2.5	<0.5
Chloroethane	<5	<1
cis - 1,2 - DCE	<2.5	<0.5
trans - 1,2 -DCE	<2.5	<0.5
Vinyl Chloride	<5	<1

CPT-3		
Date	2/17/96	
ft. bgs	11	37
Chlorobenzene	<1.3	<0.5
1,2 - DCB	40	<0.5
1,3 - DCB	11	<0.5
1,4 - DCB	4.2	<0.5
1,1 - DCA	16	<0.5
Chloroethane	<2.5	<1
cis - 1,2 - DCE	<1.3	<0.5
trans - 1,2 -DCE	<1.3	<0.5
Vinyl Chloride	<2.5	<1

EO-6	
Date	6/24/97
ft. bgs	11-16
Chlorobenzene	<0.5
1,2 - DCB	<0.5
1,3 - DCB	<0.5
1,4 - DCB	<0.5
1,1 - DCA	<0.5
Chloroethane	<1
cis - 1,2 - DCE	<0.5
trans - 1,2 -DCE	<0.5
Vinyl Chloride	<1

CPT-7		
Date	2/16/96	
ft. bgs	22 (4)	43
Chlorobenzene	-	<0.5
1,2 - DCB	-	<0.5
1,3 - DCB	-	<0.5
1,4 - DCB		<0.5
1,1 - DCA	-	<0.5
Chloroethane	-	<1
cis - 1,2 - DCE		<0.5
trans - 1,2 -DCE		<0.5
Vinyl Chloride	-	<1

EO-4	
Date	6/25/97
ft. bgs	11-16
Chlorobenzene	1.5
1,2 - DCB	<0.5
1,3 - DCB	<0.5
1,4 - DCB	<0.5
1,1 - DCA	<0.5
Chloroethane	<1
cis - 1,2 - DCE	1.2
trans - 1,2 -DCE	<0.5
Vinyl Chloride	<1

EO-5	
Date	6/25/97
ft. bgs	11-16
Chlorobenzene	1.9
1,2 - DCB	<1.2
1,3 - DCB	<1.2
1,4 - DCB	<1.2
1,1 - DCA	<1.2
Chloroethane	<2.5
cis - 1,2 - DCE	<1.2
trans - 1,2 -DCE	<1.2
Vinyl Chloride	<2.5

Alameda Avenue
Howard Street
Thatcher Property
High Street
615 High Street
630 High Street
4200 Alameda Avenue
East 8th Street
Jassen Street
Oakport
I-880
Oil Pipeline

CSMW-1 CSMW-2 CSMW-3
MW-1 MW-2 MW-3 MW-4 MW-5
CPT-1 CPT-2 CPT-3 CPT-4 CPT-5 CPT-6 CPT-7
EO-1 EO-2 EO-3 EO-4 EO-5 EO-6
SSMW-1 SSMW-2 SSMW-3 SSMW-4 SSMW-5 SSMW-6 SSMW-7 SSMW-8 SSMW-9 SSMW-10

N

0 100 200

(Approximate Scale in Feet)

LEGEND

- Site Boundary
- Monitoring Well
- CPT/PIPP Sampling Location
- Enviro-Core Boring
- [ ] Approximate Location of Former Underground Storage Tanks
- Shallow Groundwater Flow Direction

Abbreviations

1,2-DCB = 1,2-Dichlorobenzene
1,3-DCB = 1,3-Dichlorobenzene
1,4-DCB = 1,4-Dichlorobenzene
1,1-DCA = 1,1-Dichloroethane
cis-1,2-DCE = cis-1,2-Dichloroethene
trans-1,2-DCE = trans-1,2-Dichloroethene

Notes:

1. All locations are approximate.
2. Basemap from 1993 Pacific Aerial Survey photograph.
3. Concentrations in ug/L (ppb).
4. Insufficient groundwater to allow sample collection.
5. Immiscible hydrocarbons present in groundwater samples. Measured concentrations likely include quantitation of constitutents in both the immiscible and soluble phases.

Erler & Kalinowski, Inc.

Halogenated Volatile Organic Compounds in Groundwater

4200 Alameda Avenue
Oakland, CA
November 1997
EKI 930040.08
Figure 5

97 Nov 10 11:39:24 G:\930040.08\NOV97\Hvocs-05.dwg

Boring & Well Construction Log

BORING LOCATION: 4200 Alameda Avenue, Oakland, California			Boring/Well Name: EO-1	
DRILLING COMPANY: Precision Sampling, Inc.	DRILLER: Stewart King		Project Name: Ekotek	
DRILLING METHOD (S): Direct-Push	DRILL BIT AND SIZE: 2 1/2-inch		Project Number: 930040.07	
ISOLATION CASING: N/A	FROM:	TO: FT	ELEVATION AND DATUM	TOTAL DEPTH: 16 Feet
BLANK CASING: 1 inch Schedule 40 PVC (Temporary)	FROM: 0	TO: 11 FT	DATE STARTED: 6/23/97	DATE COMPLETED: 6/25/97
PERFORATED CASING: 1 inch Machine Slotted (0.010) Sch.40 PVC (Temp)	FROM: 11	TO: 16 FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK: N/A	FROM:	TO: FT	LOGGED BY/CHECKED BY: Jeannine Kessell/ Beth Lamb, C.E.G.	
SEAL: N/A	FROM:	TO: FT	SAMPLING METHODS: Enviro-Core	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite	FROM: 0	TO: 16 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
	.2		1		FILL		10YR 5/4	GRAVELLEY SILT (FILL), yellowish brown (10YR 5/4), angular clasts.	
	.5								
	.5		2					SILTY CLAY, black (IGL 2.5/), < 5% oxidized rootlets, medium plasticity, firm, moist.	
	.5								
	.5		3						
	.5						IGL 2.5/		
	.5		4						
	.5								
	.5		5						OVM S=3.4 ppm
	.5				CL				
	.5		6	Cement/ Bentonite Grout				@ 6 feet, change to dark gray (5YR 4/1), increased silt content.	
	.5						5YR 4/1		
	.5		7					@ 7 feet, change to dark yellowish brown (10YR 4/4), mottled spots.	
	.5						10YR 4/4	@ 7.5 feet to 8.5 feet, increased gravel (10-15%).	
	.5		8						
	.5								
	.5		9		SP		10YR 4/4	GRAVELLEY SAND, dark yellowish brown (10YR 4/4), < 5% oxidation spots, 25-35% gravel, 10-15% clay, fine to medium grained sand, loose, moist.	
	.5								
	.5		10						
	.5							SILTY CLAY, brown (10YR 5/3), mottled with black (IGL 2.5), medium plasticity, firm, moist.	
	.5		11				10YR 5/3		
	.5								
	.5		12		CL				
	.5							@ 12.5 feet, change to light yellowish brown (10YR 6/4).	
	.5		13				10YR 6/4		
	.5								
	.5		14					SILTY SAND/SANDY SILT (INTERBEDDED), yellowish brown (10YR 5/4), mottled with yellowish red and black streaks and spots, fine-coarse grained sand, 5-15% gravel, clasts < 3 inches, medium dense, moist.	
	.5								
	.5		15		SM		10YR 5/4		
	.5							@ 15.5 feet, increase in moisture.	
			16					Total Depth = 16 feet.	
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION 4200 Alameda Avenue, Oakland, California		Boring/Well Name: **EO-2**	
DRILLING COMPANY Precision Sampling, Inc.	**DRILLER** Stewart King	Project Name: Ekotek	
DRILLING METHOD (S) Direct-Push	**DRILL BIT AND SIZE** 2 1/2-inch	Project Number: 930040.07	
ISOLATION CASING N/A	FROM TO FT	**ELEVATION AND DATUM**	**TOTAL DEPTH** 16 Feet
BLANK CASING 1 inch Schedule 40 PVC (Temporary)	FROM 1 TO 9 FT	**DATE STARTED** 6/23/97	**DATE COMPLETED** 6/25/97
PERFORATED CASING 1 inch Machine Slotted (0.010) Sch.40 PVC (Temp)	FROM 9 TO 16 FT	**DEPTH TO WATER**	
SIZE AND TYPE OF FILTER PACK N/A	FROM TO FT	**LOGGED BY/CHECKED BY** Jeannine Kessell/ Beth Lamb, C.E.G.	
SEAL N/A	FROM TO FT	**SAMPLING METHODS** Enviro-Core	**WELL COMPLETION** ☐ Surface Housing ☐ Stand Pipe ft.
GROUT Cement/Bentonite	FROM 0 TO 16 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
	0		1		FILL		10YR 5/4	GRAVELLEY SILT (FILL), yellowish brown (10YR 5/4), 30-40% gravel, angular clasts, very loose, dry.	
	0							@ 2 1/2 feet, 2-inch sand lense overlying 3-inch silty clay lense, light olive brown (2.5 YR 5/3).	
	0		2						
	.5								
	.5		3					SILTY CLAY, black (1GL 2.5/), 15-25% silt, medium plasticity, firm, moist.	
	.5								
	.5								
	.1		4				1GL 2.5/	@ 4 feet, change to hard.	
	.5								
	.5								
	.5		5						
	.5								OVM S=3.5 ppm
	.5		6	Cement/ Bentonite Grout	CL			@ 6 feet, change to dark gray (1GL 4/).	
	.5						1GL 4/		
	.5								
	.5		7				1GL 4/1	@ 7 feet, color change to dark greenish gray (1GL 4/1).	
	.5								
	.5		8				2.5Y 5/6	@ 8 feet, color change to light olive brown (2.5Y 5/6) with dark greenish gray mottling, increased silt content (25-35%), < 5% coarse sand, low-medium plasticity, hard.	OVM S=0.8 ppm
	.5								
	.5		9					GRAVELLEY CLAY/CLAYEY SAND (INTERBEDDED), brown (10YR 5/3), 25-35% fine gravel, interbedded with clayey sand, 35-45% clay, 10-15% gravel, < 5% oxidation spots, low plasticity, hard, moist.	
	.5								
	.3		10						
	.5								
	.5		11		CL/ SP		10YR 5/3		
	.5								
	.5		12						
	.5								
	.5		13						
	.5				SP		10YR 4/2	GRAVELLEY SAND, mottled dark grayish brown (10YR 4/2) and yellowish brown (10YR 5/6), medium-coarse grained sand, 35-45 % fine gravel, loose, wet.	
	.5		14						
	.5								
	.5		15		CL		10YR 5/3	SILTY CLAY, brown (10YR 5/3), mottled with black (1GL 2.5/) streaks, and yellowish red (5YR 5/6) spots, medium plasticity, firm to hard, moist.	
	.5								
			16					Total depth = 16 feet.	
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION 4200 Alameda Avenue, Oakland, California			Boring/Well Name: **EO-3**
DRILLING COMPANY Precision Sampling, Inc.	**DRILLER** Stewart King		Project Name: Ekotek
DRILLING METHOD(S) Direct-Push	**DRILL BIT AND SIZE** 2 1/2-inch		Project Number: 930040.07
ISOLATION CASING N/A	FROM TO FT	**ELEVATION AND DATUM**	**TOTAL DEPTH** 16 Feet
BLANK CASING 1 inch Schedule 40 PVC (Temporary)	FROM 0 TO 11 FT	**DATE STARTED** 6/23/97	**DATE COMPLETED** 6/25/97
PERFORATED CASING 1 inch Machine Slotted (0.010) Sch.40 PVC (Temp)	FROM 11 TO 16 FT	**DEPTH TO WATER**	
SIZE AND TYPE OF FILTER PACK N/A	FROM TO FT	**LOGGED BY/CHECKED BY** Jeannine Kessell/ Beth Lamb, C.E.G.	
SEAL N/A	FROM TO FT	**SAMPLING METHODS** Enviro-Core	**WELL COMPLETION** ☐ Surface Housing ☐ Stand Pipe ft.
GROUT Cement/Bentonite	FROM 0 TO 16 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
	.1		1		FILL		10YR 5/3	GRAVELLEY SILT (FILL), brown (10YR 5/3), loose, dry.	
	.1							@ 1.5 feet, increased medium grained sand, loose, moist.	
	.1								
	.2		2						
	.5								
	.3		3						
	.3							SILTY CLAY, black (1GL 2.5/), medium plasticity, firm, moist.	
	.2		4		CL		1GL 2.5/		
	.3								
	.5		5						
	.5								
	.5		6	Cement/ Bentonite Grout				CLAYEY SAND, light olive brown (2.5Y 5/3), with < 5% oxidation spots, mottled yellowish red (5YR 5/6), greenish gray (1GL 5/1) and black (1GL 2.5/), 25-35% clay, 10-15% gravel, fine to coarse grained sand, medium dense moist.	
	.3				SC		2.5Y 5/3		OVM S=0.3 ppm
	.5		7						
	.5								
	.5		8					SILTY CLAY, light olive brown (2.5Y 5/4), medium plasticity, hard, moist.	
	.5								
	.5		9						
	.5								
	.3		10				2.5Y 5/4		
	.5								
	.5		11						
	.5								OVM S=0.9 ppm
	.5		12		CL				
	.5								
	.5		13						
	.5						1GL 4/1	@ 13 feet, 1-foot thick clayey sand lense, dark greenish gray (1GL 4/1), mottled with dark gray (1GL 4/), fine grained sand.	
	.5		14						
	.5						2.5Y 5/4		
	.5		15					@ 15 feet, increased sand content (30-40%).	
	.5								
			16					Total depth = 16 feet.	
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION: 4200 Alameda Avenue, Oakland, California			Boring/Well Name: EO-4
DRILLING COMPANY: Precision Sampling, Inc.	DRILLER: Stewart King		Project Name: Ekotek
DRILLING METHOD (S): Direct-Push	DRILL BIT AND SIZE: 2 1/2-inch		Project Number: 930040.07
ISOLATION CASING: N/A	FROM / TO / FT	ELEVATION AND DATUM	TOTAL DEPTH: 16 Feet
BLANK CASING: 1 inch Schedule 40 PVC (Temporary)	FROM 0 TO 9 FT	DATE STARTED: 6/23/97	DATE COMPLETED: 6/25/97
PERFORATED CASING: 1 inch Machine Slotted (0.010) Sch.40 PVC (Temp)	FROM 9 TO 16 FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK: N/A	FROM / TO / FT	LOGGED BY/CHECKED BY: Jeannine Kessell/ Beth Lamb, C.E.G.	
SEAL: N/A	FROM / TO / FT	SAMPLING METHODS: Enviro-Core	WELL COMPLETION: ☐ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite	FROM 0 TO 16 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
	0		1					Asphalt, 4 inches	
	0							GRAVELLEY SILT (FILL), brown (10YR 5/3), cement clasts, loose dry.	
	0		2		FILL		10YR 5/3		
	0								
	.1		3						
	.1								
	.1		4						
	0							SILTY CLAY, dark gray (2.5Y 4/1), <5 % fine gravel, subangular lithic clasts, medium plasticity, hard, moist.	
	0		5						
	0						2.5Y 4/1		
	0		6	Cement/ Bentonite Grout					
	.5				CL				
	.5		7					@ 7 feet, color change to light olive brown (2.5 Y 5/4).	
	.5								
	.5		8				2.5Y 5/4		
	.5								
	.5		9						
	.5								
	.5		10					SAND, dark yellowish brown (10YR 4/4), 15-25% fines, < 5% anguiar to subangular gravel clasts, fine to coarse grained sand, fining upwards, loose, moist.	
	0								
	0		11						
	0								
	.3		12				10YR 4/4		
	.5								
	.5				SP				
	0		13						
	0								
	0		14						
	.5							@ 14.5 feet, color change to dark greenish gray (1GL 4/1), wet.	odor detected
	.5		15						
	.5						1GL 4/1		OVM S=32 ppm
			16					Total depth = 16 feet.	
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION 4200 Alameda Avenue, Oakland, California			Boring/Well Name: **EO-5** Project Name: Ekotek Project Number: 930040.07
DRILLING COMPANY Precision Sampling, Inc.	**DRILLER** Stewart King		
DRILLING METHOD (S) Direct-Push	**DRILL BIT AND SIZE** 2 1/2-inch		
ISOLATION CASING N/A	FROM TO FT	**ELEVATION AND DATUM**	**TOTAL DEPTH** 16 Feet
BLANK CASING 1 inch Schedule 40 PVC (Temporary)	FROM 0 TO 9 FT	**DATE STARTED** 6/23/97	**DATE COMPLETED** 6/25/97
PERFORATED CASING 1 inch Machine Slotted (0.010) Sch.40 PVC (Temp)	FROM 9 TO 16 FT	**DEPTH TO WATER**	
SIZE AND TYPE OF FILTER PACK N/A	FROM TO FT	**LOGGED BY/CHECKED BY** Jeannine Kessell/ Beth Lamb, C.E.G.	
SEAL N/A	FROM TO FT	**SAMPLING METHODS** Enviro-Core	**WELL COMPLETION** ☐ Surface Housing ☐ Stand Pipe ft.
GROUT Cement/Bentonite	FROM 0 TO 16 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
	0		0					Asphalt, 6 inches	
	0		1					SAND, 4 inches dark brown (7.5YR 3/3), 2 inches black (1GL 2.5/), 3 inches light gray (1GL 7/), 10-15% fines, 10-15% gravel, medium to coarse grained, loose, moist.	
	0							@ 7 inches, increased angular clasts.	
	.4		2		SP			@ 3 feet, color change to brown (10YR 4/3), gravel absent.	
	.5		3						
	.5								
	.5		4					SILTY CLAY, black (1GL 2.5/), medium plasticity, firm, moist.	
	.1								
	.5		5				1GL 2.5/		
	.5								
	.5				CL				
	.5		6	Cement/ Bentonite Grout				@ 6 feet, change to dark gray (1GL 4/), mottled with black (1GL 2.5/)	
	.5							@ 6.5 feet, change to dark gray (5Y 4/1), mottled with dark yellowish brown spots (10YR 4/6).	
	.5		7						
	0								
	.5		8					SANDY CLAY, gray (2.5Y 4/1), larger grains dark yellowish brown (10YR 4/6), 25-35% coarse sand, low-medium plasticity, very hard, moist.	
	.5				CL		2.5Y 4/1		
	.5		9						
	.5								
	.5		10					SAND, yellowish brown (10YR 5/6), <5% fine gravel, medium- coarse grained sand, loose-medium dense, moist.	
	.5								
	.5		11						
	.5								
	.5		12		SP		10YR 5/6		
	.5								
	.5		13						
	.5								
	.5		14					@ 14 feet, wet.	
	.5								
	.5		15					SILTY CLAY, yellowish brown (10YR 5/6), mottled with black (1GL 2.5/) streaks, medium plasticity, soft, moist.	
	.5				CL		10YR 5/4		
			16					Total depth = 16 feet.	
			17						
			18						
			19						
			20						

Boring & Well Construction Log

BORING LOCATION 4200 Alameda Avenue, Oakland, California		**Boring/Well Name: EO-6**	
DRILLING COMPANY Precision Sampling, Inc.	**DRILLER** Stewart King	**Project Name: Ekotek**	
DRILLING METHOD (S) Direct-Push	**DRILL BIT AND SIZE** 2 1/2-inch	**Project Number: 930040.07**	
ISOLATION CASING N/A	FROM TO FT	**ELEVATION AND DATUM**	**TOTAL DEPTH** 16 Feet
BLANK CASING 1 inch Schedule 40 PVC (Temporary)	FROM 0 TO 9 FT	**DATE STARTED** 6/23/97	**DATE COMPLETED** 6/25/97
PERFORATED CASING 1 inch Machine Slotted (0.010) Sch.40 PVC (Temp)	FROM 9 TO 16 FT	**DEPTH TO WATER**	
SIZE AND TYPE OF FILTER PACK N/A	FROM TO FT	**LOGGED BY/CHECKED BY** Jeannine Kessell/ Beth Lamb, C.E.G.	
SEAL N/A	FROM TO FT	**SAMPLING METHODS** Enviro-Core	**WELL COMPLETION** ☐ Surface Housing ☐ Stand Pipe ft.
GROUT Cement/Bentonite	FROM 0 TO 16 FT		

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
	0		1		FILL		2.5Y 3/1	Asphalt, 5 inches GRAVELLEY SAND (FILL), very dark gray (2.5Y 3/1), 35-45% gravel, loose, dry.	
	0		2						
	0		3		SC			CLAYEY SAND, very dark grayish brown (10YR 3/2), 25-35% clay, fine-medium grained, medium dense, moist.	
	.2		4				1GL 2.5/	@ 3 feet, change to black (1GL 2.5/).	
	.5		5					SILTY CLAY, black (1GL 2.5/), medium plasticity, hard, moist.	
	.5		6	Cement/ Bentonite Grout	CL		5YR 4/1	@ 5 feet, change to dark gray (1GL 4/), mottled with light gray (1GL 7/1).	
	.5		7					@ 6 feet, change to dark grayish brown (10YR 4/2), mottled with yellowish brown spots (10YR 4/6), increased silt content (25-25%), increased pebbles 5-10%.	OVM S=0.5 ppm
	.5		8					@7.5 feet, mottled with greenish gray (1GL 5/1), and increased pebbles 15-25%.	
	.5		9					CLAYEY SAND, greenish gray (1GL 5/1), 10-15% gravel pebbles, fine to medium grained sand, dense, moist.	
	.5		10				10YR 4/2		
	.5		11		SC			@ 11 feet, 2-inch gravel lense	
	.5		12					@ 11.5, mottled with yellowish brown (10YR 4/6) spots (1 foot).	
	.2		13					@12.5, decreased clay (10-20% clay).	
	.5							SAND, greenish gray (1GL 5/1), medium to coarse grained sand, loose, moist.	
	.1		14				1GL 5/1		
	0				SP				
	0		15					@ 15 feet, change to dark yellowish brown (10YR 4/4).	
	.5						10YR 4/4		
	.5		16					Total depth = 16 feet.	
			17						
			18						
			19						
			20						

Sequoia Analytical

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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402
Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Lab Proj. ID: 9706H53

Received: 06/25/97
Reported: 07/10/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 19 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

8010: Unable to confirm sample #4 because we were provided with very limited sample.

The total extractable petroleum hydrocarbon and fuel fingerprint chromatogram pattern for sample EO-1 does not resemble a petroleum product. The quantitated values is most likely due to some other type of organic matter in the water sample.

SEQUOIA ANALYTICAL

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Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/25/97
1730 South Amphlett, Ste 320	Sample Descript: EO-1	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706H53-01	Reported: 07/10/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	100
Chromatogram Pattern: **Unidentified HC**		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/25/97
1730 South Amphlett, Ste 320	Sample Descript: EO-1	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706H53-01	Reported: 07/10/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/25/97
1730 South Amphlett, Ste 320	Sample Descript: EO-4	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706H53-03	Reported: 07/10/97

QC Batch Number: GC070197BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	**0.50**	**0.75**
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/25/97
1730 South Amphlett, Ste 320	Sample Descript: EO-4	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/03/97
Attention: Paul Hoffey	Lab Number: 9706H53-03	Reported: 07/10/97

QC Batch Number: GC0703978010O8A
Instrument ID: GCHP08

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	**0.50**	**1.5**
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	**0.50**	**1.2**
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	102

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: EO-5
Matrix: LIQUID
Analysis Method: EPA 8010
Lab Number: 9706H53-04

Sampled: 06/25/97
Received: 06/25/97

Analyzed: 07/03/97
Reported: 07/10/97

QC Batch Number: GC070397801008A
Instrument ID: GCHP08

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	1.2	N.D.
Bromoform	1.2	N.D.
Bromomethane	2.5	N.D.
Carbon Tetrachloride	1.2	N.D.
Chlorobenzene	**1.2**	**1.9***
Chloroethane	2.5	N.D.
2-Chloroethylvinyl ether	2.5	N.D.
Chloroform	1.2	N.D.
Chloromethane	2.5	N.D.
Dibromochloromethane	1.2	N.D.
1,2-Dichlorobenzene	1.2	N.D.
1,3-Dichlorobenzene	1.2	N.D.
1,4-Dichlorobenzene	1.2	N.D.
1,1-Dichloroethane	1.2	N.D.
1,2-Dichloroethane	1.2	N.D.
1,1-Dichloroethene	1.2	N.D.
cis-1,2-Dichloroethene	1.2	N.D.
trans-1,2-Dichloroethene	1.2	N.D.
1,2-Dichloropropane	1.2	N.D.
cis-1,3-Dichloropropene	1.2	N.D.
trans-1,3-Dichloropropene	1.2	N.D.
Methylene chloride	12	N.D.
1,1,2,2-Tetrachloroethane	1.2	N.D.
Tetrachloroethene	1.2	N.D.
1,1,1-Trichloroethane	1.2	N.D.
1,1,2-Trichloroethane	1.2	N.D.
Trichloroethene	1.2	N.D.
Trichlorofluoromethane	1.2	N.D.
Vinyl chloride	2.5	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	100

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/25/97
1730 South Amphlett, Ste 320	Sample Descript: EO-5	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8020	Analyzed: 07/03/97
Attention: Paul Hoffey	Lab Number: 9706H53-04	Reported: 07/10/97

QC Batch Number: GC070397802008A
Instrument ID: GCHP08

Aromatic Volatile Organics (EPA 8020)

Analyte	Detection Limit ug/L	Sample Results ug/L
Benzene	1.2	N.D.
Chlorobenzene	**1.2**	**1.3***
1,2-Dichlorobenzene	1.2	N.D.
1,3-Dichlorobenzene	1.2	N.D.
1,4-Dichlorobenzene	1.2	N.D.
Ethyl benzene	1.2	N.D.
Toluene	1.2	N.D.
Total Xylenes	1.2	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	100

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
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Sequoia Analytical

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404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: Method Blank
Matrix: LIQUID
Analysis Method: EPA 8010
Lab Number: 9706H53-05

Sampled:
Received: 06/25/97

Analyzed: 07/03/97
Reported: 07/10/97

QC Batch Number: GC070397801008A
Instrument ID: GCHP08

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	103

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8020	Analyzed: 07/03/97
Attention: Paul Hoffey	Lab Number: 9706H53-05	Reported: 07/10/97

QC Batch Number: GC070397802008A
Instrument ID: GCHP08

Aromatic Volatile Organics (EPA 8020)

Analyte	Detection Limit ug/L	Sample Results ug/L
Benzene	0.50	N.D.
Chlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
Ethyl benzene	0.50	N.D.
Toluene	0.50	N.D.
Total Xylenes	0.50	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	105

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706H53-05	Reported: 07/10/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706H53-05	Reported: 07/10/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil	500	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/25/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706H53-05	Reported: 07/10/97

QC Batch Number: GC070197BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

Analytes reported as N.D. were not present above the stated limit of detection.

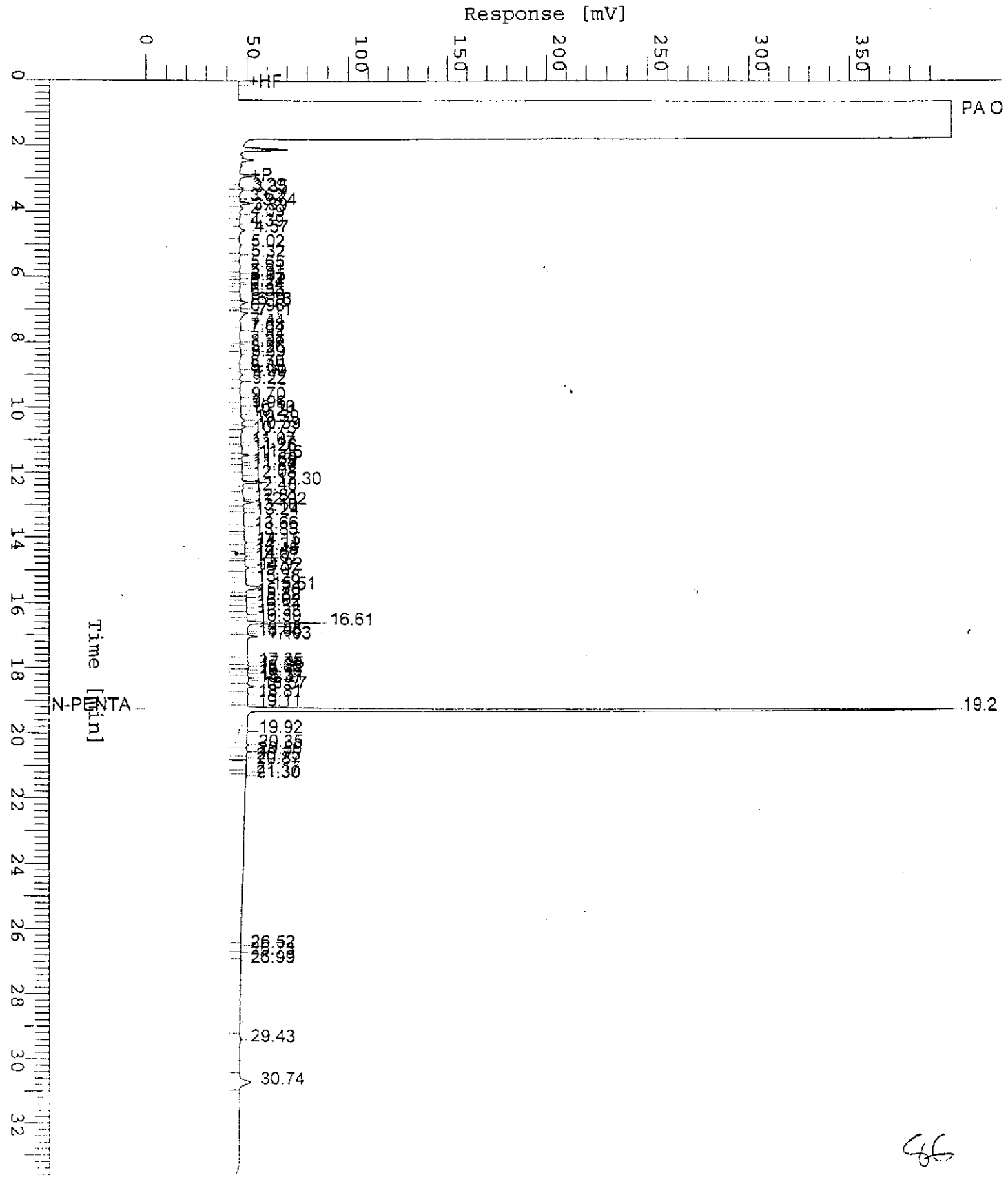
SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Chromatogram

Sample Name : DW9706H53-1 (500:1)
FileName : S:\GHP_04\0706\702B012.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

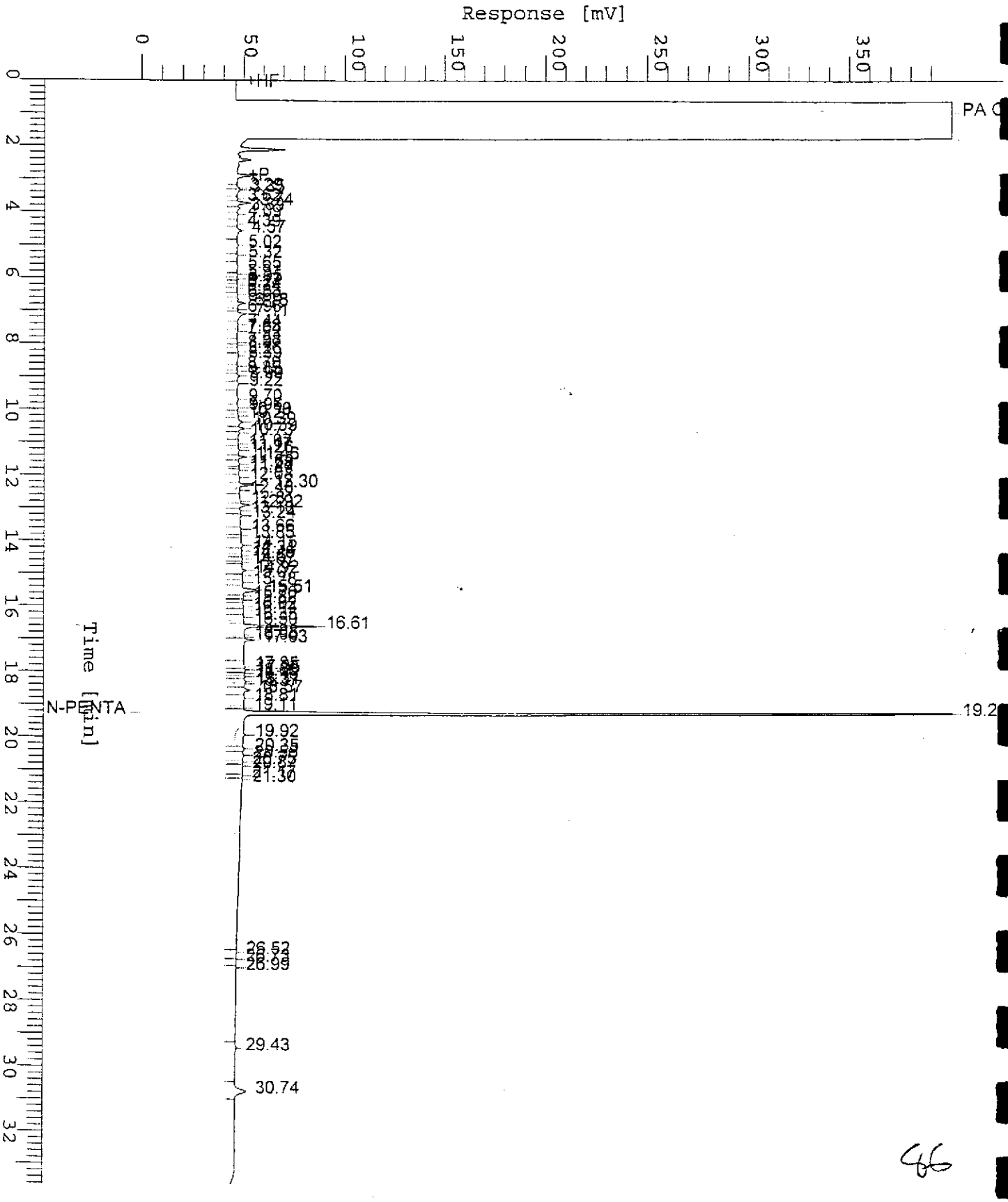
Sample #: EO-1 Page 1 of 1
Date : 7/2/97 17:48
Time of Injection: 7/2/97 17:15
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



Chromatogram

Sample Name : DW9706H53-1 (500:1)
FileName : S:\GHP_04\0706\702B012.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: EO-1 Page 1 of 1
Date : 7/2/97 17:48
Time of Injection: 7/2/97 17:15
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



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Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek		
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID		
San Mateo, CA 94402	Sample Descript.:	XSD		
Attention: Paul Hoffey	Work Order #:	9706H53	-01, 05	Reported: Jul 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0630970HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	G. Fish
MS/MSD #:	9706958-06-XSD
Sample Conc.:	150
Prepared Date:	06/30/97
Analyzed Date:	07/01/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
Result:	840
MS % Recovery:	69
Dup. Result:	920
MSD % Recov.:	77
RPD:	9.1
RPD Limit:	0-50

LCS #:	LCS070197-LCS
Prepared Date:	07/01/97
Analyzed Date:	07/02/97
Instrument I.D.#:	GCHP4B
Conc. Spiked:	1000 µg/L
LCS Result:	750
LCS % Recov.:	75

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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Erler & Kalinowski, Inc.
1730 So. Amphlett Blvd., Suite 320
San Mateo, CA 94402
Attention: Paul Hoffey

Client Project ID: 930040.07/Ekotek
Matrix: LIQUID
Sample Descript.: EO-1
Work Order #: 9706H53-03, 05

Reported: Jul 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC070197BTEX02A	GC070197BTEX02A	GC070197BTEX02A	GC070197BTEX02A	GC070197BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP02	GCHP02	GCHP02	GCHP02	GCHP02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	9.9	9.9	30	70
MS % Recovery:	100	99	99	100	117
Dup. Result:	10	10	10	31	70
MSD % Recov.:	100	100	100	103	117
RPD:	0.0	1.0	1.0	3.3	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS
Prepared Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP02	GCHP02	GCHP02	GCHP02	GCHP02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.5	8.3	8.4	25	53
LCS % Recov.:	85	83	84	83	88
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	XSD	
Attention: Paul Hoffey	Work Order #:	9706H53-03-05	Reported: Jul 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-Benzene
QC Batch#:	GC070397801008A	GC070397801008A	GC070397801008A
Analy. Method:	EPA 8010	EPA 8010	EPA 8010
Prep. Method:	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9706E43-01-XSD	9706E43-01-XSD	9706E43-01-XSD
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	07/03/97	07/03/97	07/03/97
Analyzed Date:	07/03/97	07/03/97	07/03/97
Instrument I.D.#:	GCHP08	GCHP08	GCHP08
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Result:	22	22	21
MS % Recovery:	88	88	84
Dup. Result:	23	22	22
MSD % Recov.:	92	88	88
RPD:	4.4	0.0	4.7
RPD Limit:	0-25	0-25	0-25

LCS #:	LCS070397-LCS	LCS070397-LCS	LCS070397-LCS
Prepared Date:	07/03/97	07/03/97	07/03/97
Analyzed Date:	07/03/97	07/03/97	07/03/97
Instrument I.D.#:	GCHP08	GCHP08	GCHP08
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	23	23	22
LCS % Recov.:	92	92	88

MS/MSD	60-140	60-140	60-140
LCS	65-135	70-130	70-130
Control Limits			

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	XSD	
Attention: Paul Hoffey	Work Order #:	9706H53-04, 05	Reported: Jul 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Chloro-Benzene
QC Batch#:	GC070397802008A	GC070397802008A	GC070397802008A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030
Analyst:	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9706E43-01-XSD	9706E43-01-XSD	9706E43-01-XSD
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	07/03/97	07/03/97	07/03/97
Analyzed Date:	07/03/97	07/03/97	07/03/97
Instrument I.D.#:	GCHP08	GCHP08	GCHP08
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Result:	24	24	23
MS % Recovery:	96	96	92
Dup. Result:	24	24	23
MSD % Recov.:	96	96	92
RPD:	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25

LCS #:	LCS070397-LCS	LCS070397-LCS	LCS070397-LCS
Prepared Date:	07/03/97	07/03/97	07/03/97
Analyzed Date:	07/03/97	07/03/97	07/03/97
Instrument I.D.#:	GCHP08	GCHP08	GCHP08
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	24	24	23
LCS % Recov.:	96	96	92

MS/MSD	60-140	60-140	60-140
LCS	70-130	70-130	70-130
Control Limits			

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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9706453

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 930040.07 Page 1 of 1

Project Name: Ekotek

Source of Samples: 16 foot borings

Location: Oakland, CA

Analytical Laboratory:

Date Sampled: 6/25/97

Sampled By: Jeannine Kessell

Report Results To: Paul Hoffe

Phone Number: (415) 578-1172

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
1	EO-1	water	1 Amber Liter	9:30	8015m, 8020, 8010 *	Standard
2	EO-2	water	1 Amber Liter	10:00	"	"
3	EO-4	water	2 VOAs	9:00	"	"
4	EO-5	water	1 VOA	9:10	"	"

Special Instructions: *8015m: total purgeable hydrocarbons (as gas), total extractable petroleum hydrocarbons (as diesel), & fuel finger print (as motor oil)

*8020: BTEX, *8010: Halogenated VOCs

Relinquished By:

Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
Jeannine Kessell / Jeannine Kessell EKI	6/25/97	1310	Alan ABAD Segura

Sequoia Analytical

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Erler & Kalinowski, Inc. 1730 South Amphlett, Ste 320 San Mateo, CA 94402 Attention: Paul Hoffey	Client Proj. ID: 930040.07/Ekotek Lab Proj. ID: 9706E03	Received: 06/24/97 Reported: 07/07/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 18 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

The total extractable petroleum hydrocarbon and fuel fingerprint chromatogram pattern for sample EO-3 does not resemble a petroleum product. The quantitated value is most likely due to some other type of organic matter in the water sample.

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/23/97
1730 South Amphlett, Ste 320	Sample Descript: EO-1	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E03-01	Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	92

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/23/97
1730 South Amphlett, Ste 320	Sample Descript: EO-1	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-01	Reported: 07/07/97

QC Batch Number: GC070197BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/23/97
1730 South Amphlett, Ste 320	Sample Descript: EO-3	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E03-02	Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/23/97
1730 South Amphlett, Ste 320	Sample Descript: EO-3	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-02	Reported: 07/07/97

QC Batch Number: GC070197BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**77**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	**0.50**	**0.67**
Chromatogram Pattern:		
Unidentified HC		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	113

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/23/97
1730 South Amphlett, Ste 320	Sample Descript: EO-3	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/30/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-02	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	**50**	**190**
Chromatogram Pattern:		
Unidentified HC		**C9-C24**

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/23/97
1730 South Amphlett, Ste 320	Sample Descript: EO-3	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/30/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-02	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	89

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 06/30/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-03	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4A

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	82

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: Method Blank
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9706E03-03

Sampled:
Received: 06/24/97
Extracted: 06/30/97
Analyzed: 07/01/97
Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	82

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-03	Reported: 07/07/97

QC Batch Number: GC070197BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	99

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: Method Blank
Matrix: LIQUID
Analysis Method: EPA 8010
Lab Number: 9706E03-03

Sampled:
Received: 06/24/97

Analyzed: 07/02/97
Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E03-04	Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	94

Analytes reported as N.D. were not present above the stated limit of detection.

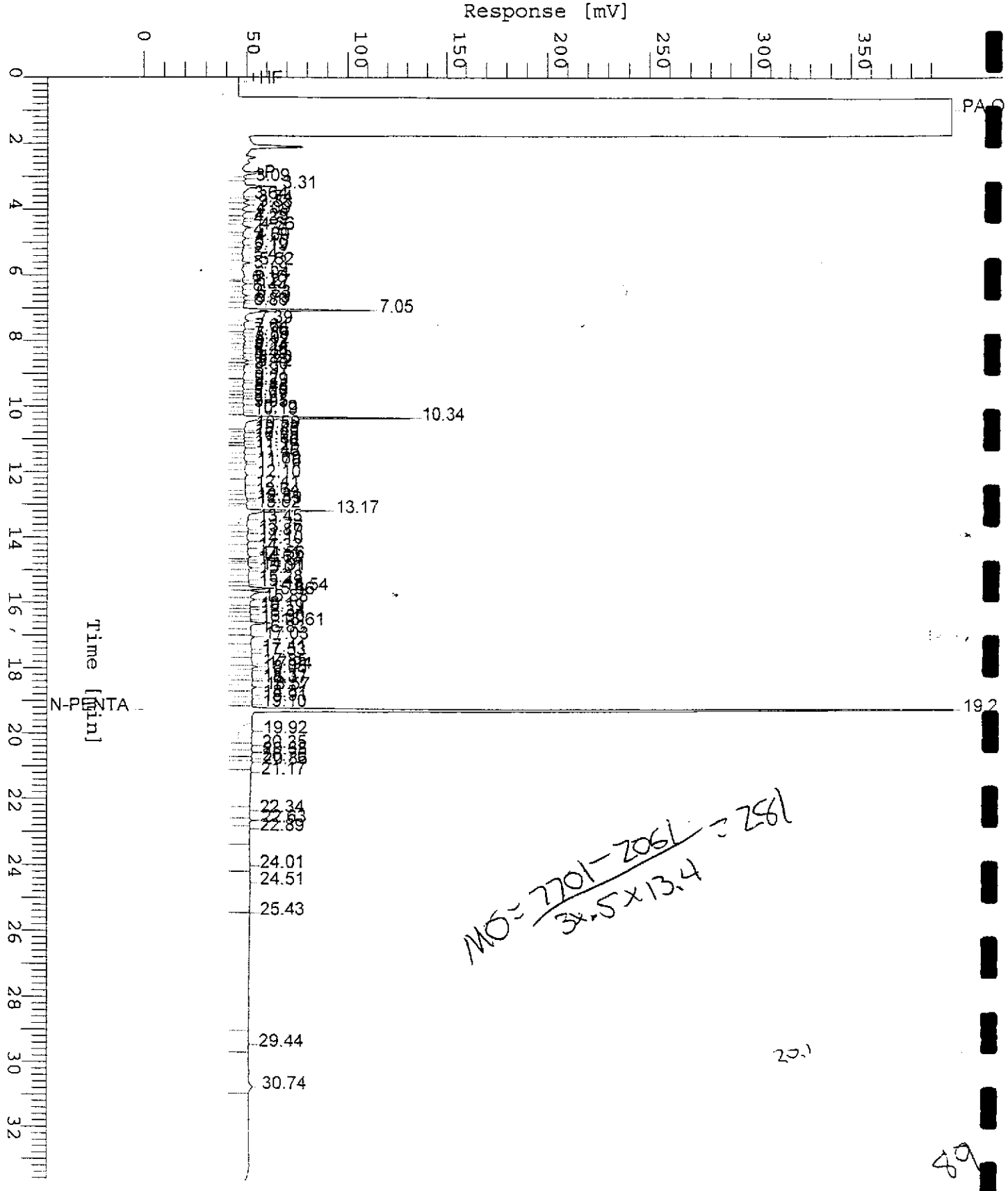
SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Chromatogram

Sample Name : DW9706E03-2 (500:1)
FileName : S:\GHP_04\0706\630B045.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: EO-3 Page 1 of 1
Date : 7/1/97 21:05
Time of Injection: 7/1/97 20:31
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



$MO = \frac{2201 - 2061}{3.5 \times 13.4} = 2.61$

2.1

49

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	EO-1	
Attention: Paul Hoffey	Work Order #:	9706E03 -01-03	Reported: Jul 8, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC070197BTEX02A	GC070197BTEX02A	GC070197BTEX02A	GC070197BTEX02A	GC070197BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	9.9	9.9	30	70
MS % Recovery:	100	99	99	100	117
Dup. Result:	10	10	10	31	70
MSD % Recov.:	100	100	100	103	117
RPD:	0.0	1.0	1.0	3.3	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS
Prepared Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.5	8.3	8.4	25	53
LCS % Recov.:	85	83	84	83	88
MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	EO-1	
Attention: Paul Hoffey	Work Order #:	9706E03-01, 04	Reported: Jul 8, 1997

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-Benzene
QC Batch#:	GC070297801009A	GC070297801009A	GC070297801009A
Analy. Method:	EPA 8010	EPA 8010	EPA 8010
Prep. Method:	EPA 5030	EPA 5030	EPA 5030
Analyst:	E. Cunanan	E. Cunanan	E. Cunanan
MS/MSD #:	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/02/97	07/02/97	07/02/97
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Result:	26	27	24
MS % Recovery:	104	108	96
Dup. Result:	27	26	23
MSD % Recov.:	108	104	92
RPD:	3.8	3.8	4.3
RPD Limit:	0-25	0-25	0-25

LCS #:	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS
Prepared Date:	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	26	27	25
LCS % Recov.:	104	108	100

MS/MSD	60-140	60-140	60-140
LCS	65-135	70-130	70-130
Control Limits			

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	EO-1	
Attention: Paul Hoffey	Work Order #:	9706E03-02, 03	Reported: Jul 8, 1997

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-Benzene
QC Batch#:	GC070297801009A	GC070297801009A	GC070297801009A
Analy. Method:	EPA 8010	EPA 8010	EPA 8010
Prep. Method:	EPA 5030	EPA 5030	EPA 5030
Analyst:	E. Cunanan	E. Cunanan	E. Cunanan
MS/MSD #:	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/02/97	07/02/97	07/02/97
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Result:	26	27	24
MS % Recovery:	104	108	96
Dup. Result:	27	26	23
MSD % Recov.:	108	104	92
RPD:	3.8	3.8	4.3
RPD Limit:	0-25	0-25	0-25

LCS #:	LCS070297-LCS	LCS070297-LCS	LCS070297-LCS
Prepared Date:	07/02/97	07/02/97	07/02/97
Analyzed Date:	07/02/97	07/02/97	07/02/97
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	26	27	25
LCS % Recov.:	104	108	100

MS/MSD	60-140	60-140	60-140
LCS	65-135	70-130	70-130
Control Limits			

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	XSD	
Attention: Paul Hoffey	Work Order #:	9706E03-02, 03	Reported: Jul 8, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0630970HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	G. Fish
MS/MSD #:	9706958-06-XSD
Sample Conc.:	150
Prepared Date:	06/30/97
Analyzed Date:	07/01/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
Result:	840
MS % Recovery:	69
Dup. Result:	920
MSD % Recov.:	77
RPD:	9.1
RPD Limit:	0-50

LCS #:	LCS063097-LCS
Prepared Date:	06/30/97
Analyzed Date:	07/01/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
LCS Result:	760
LCS % Recov.:	76

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 930040.07 Page 1 of 1

Project Name: Ekotek

Source of Samples: 16-foot borings

Location: Oakland, CA

Analytical Laboratory:

Date Sampled: 6/23/97

Sampled By: Jeannine Kessell

Report Results To: Paul Hoffey

Phone Number: (415) 578-1172

9706E03

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
1	EO-1	SW	3 VOA's	13:25	8015m, 8020, 8010 *	Standard
	EO-2	SW	1 Amber Liter	13:25		HOLD
2	EO-3	SW	3 VOA's	15:45		Standard
2	EO-3	SW	1 Amber Liter	15:55		Standard
			ok to run	EO-1	Jeannine Kessell	

Special Instructions:
* 8015m: total purgeable petroleum hydrocarbon (as gas), total extractable pet. hydrocarbons (as diesel) + fuel fingerprint (as motor oil)
+ 8020: BTEX , * 8010: Halogenated VOCs

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
Jeannine Kessell Jeannine Kessell	6/24/97	11:50	PHIL / [illegible] / Sequoia

Sequoia Analytical

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Erler & Kalinowski, Inc. 1730 South Amphlett, Ste 320 San Mateo, CA 94402 Attention: Paul Hoffey	Client Proj. ID: 930040.07/Ekotek Lab Proj. ID: 9706E11	Received: 06/24/97 Reported: 07/07/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 19 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

The total extractable petroleum hydrocarbon and fuel fingerprint chromatogram pattern for sample EO-2 does not resemble a petroleum product. The quantitated value is most likely due to some other type of organic matter in the water sample.

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/24/97
1730 South Amphlett, Ste 320	Sample Descript: EO-2	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-01	Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: EO-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9706E11-01

Sampled: 06/24/97
Received: 06/24/97

Analyzed: 07/01/97
Reported: 07/07/97

QC Batch Number: GC070197BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	98

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/24/97
1730 South Amphlett, Ste 320	Sample Descript: EO-2	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-01	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	190
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/24/97
1730 South Amphlett, Ste 320	Sample Descript: EO-2	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-01	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4A

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	91

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/24/97
1730 South Amphlett, Ste 320	Sample Descript: EO-3	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-02	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	410
Chromatogram Pattern:		
Unidentified HC		C9-C24

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: EO-3
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9706E11-02

Sampled: 06/24/97
Received: 06/24/97
Extracted: 07/01/97
Analyzed: 07/02/97
Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	88

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled: 06/24/97
1730 South Amphlett, Ste 320	Sample Descript: EO-6	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-03	Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	86

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: EO-6
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9706E11-03

Sampled: 06/24/97
Received: 06/24/97

Analyzed: 07/01/97
Reported: 07/07/97

QC Batch Number: GC070197BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	92

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: EPA 8010	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-04	Reported: 07/07/97

QC Batch Number: GC070297801009A
Instrument ID: GCHP09

Halogenated Volatile Organics (EPA 8010)

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limits %		% Recovery
1-Chloro-2-fluorobenzene	70	130	84

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/01/97
Attention: Paul Hoffey	Lab Number: 9706E11-04	Reported: 07/07/97

QC Batch Number: GC070197BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	101

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Erler & Kalinowski, Inc.	Client Proj. ID: 930040.07/Ekotek	Sampled:
1730 South Amphlett, Ste 320	Sample Descript: Method Blank	Received: 06/24/97
San Mateo, CA 94402	Matrix: LIQUID	Extracted: 07/01/97
	Analysis Method: EPA 8015 Mod	Analyzed: 07/02/97
Attention: Paul Hoffey	Lab Number: 9706E11-04	Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel	50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

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Erler & Kalinowski, Inc.
1730 South Amphlett, Ste 320
San Mateo, CA 94402

Attention: Paul Hoffey

Client Proj. ID: 930040.07/Ekotek
Sample Descript: Method Blank
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9706E11-04

Sampled:
Received: 06/24/97
Extracted: 07/01/97
Analyzed: 07/02/97
Reported: 07/07/97

QC Batch Number: GC0630970HBPEXA
Instrument ID: GCHP4B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.

Surrogates	Control Limits %		% Recovery
n-Pentacosane (C25)	50	150	81

Analytes reported as N.D. were not present above the stated limit of detection.

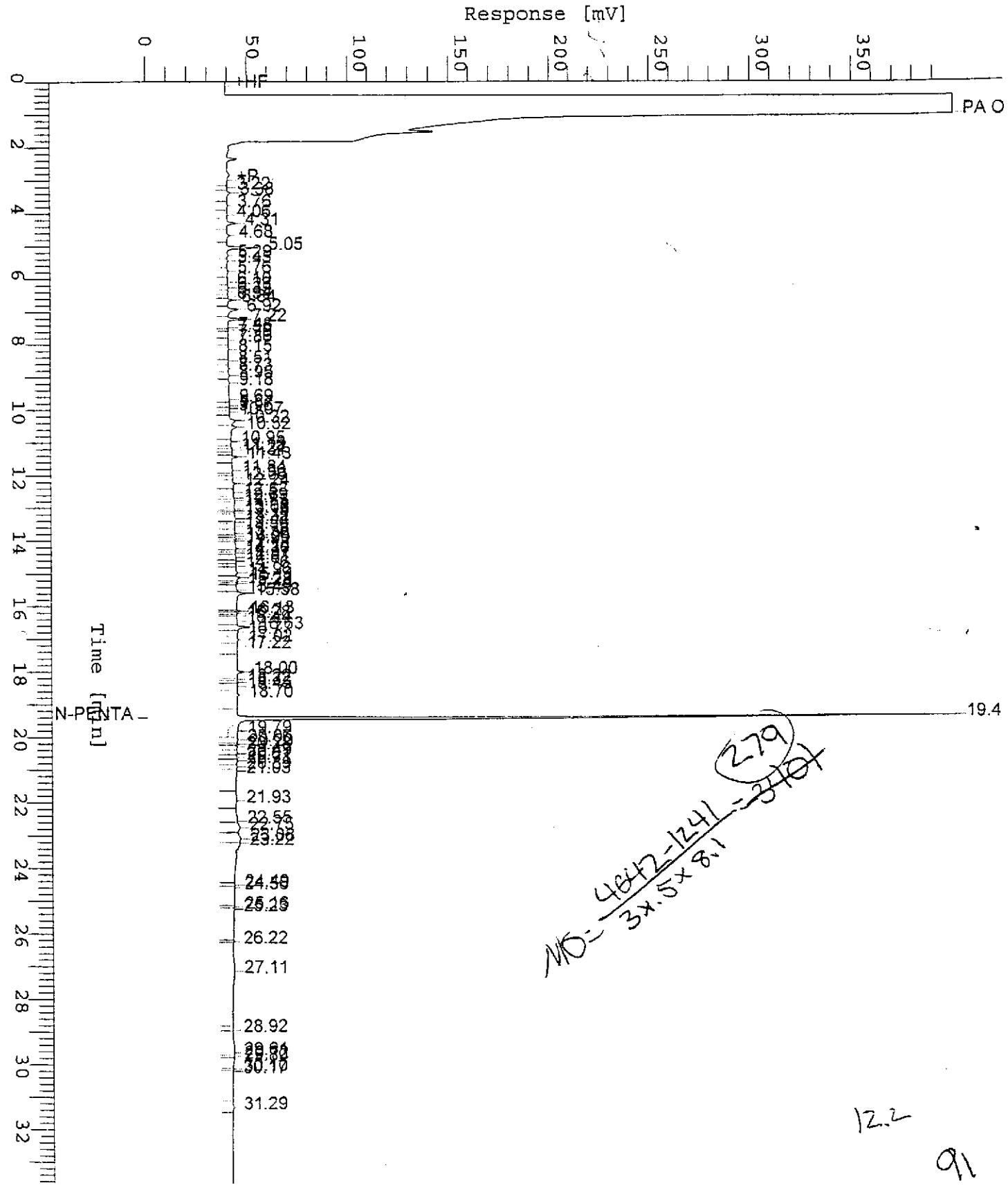
SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Chromatogram

Sample Name : DW9706E11-1 (500:1)
FileName : S:\GHP_04\0706\702A009.raw
Method : TPH04A
Start Time : 0.00 min End Time : 33.65 min
Scale Factor: 0.0 Plot Offset: 0 mV

Sample #: EO-2
Date : 7/2/97 15:45
Time of Injection: 7/2/97 15:11
Low Point : 0.00 mV High Point : 400.00 mV
Plot Scale: 400.0 mV



$MD = \frac{4642 - 1241 - 310}{3 \times .5 \times 8.1} (279)$

12.2

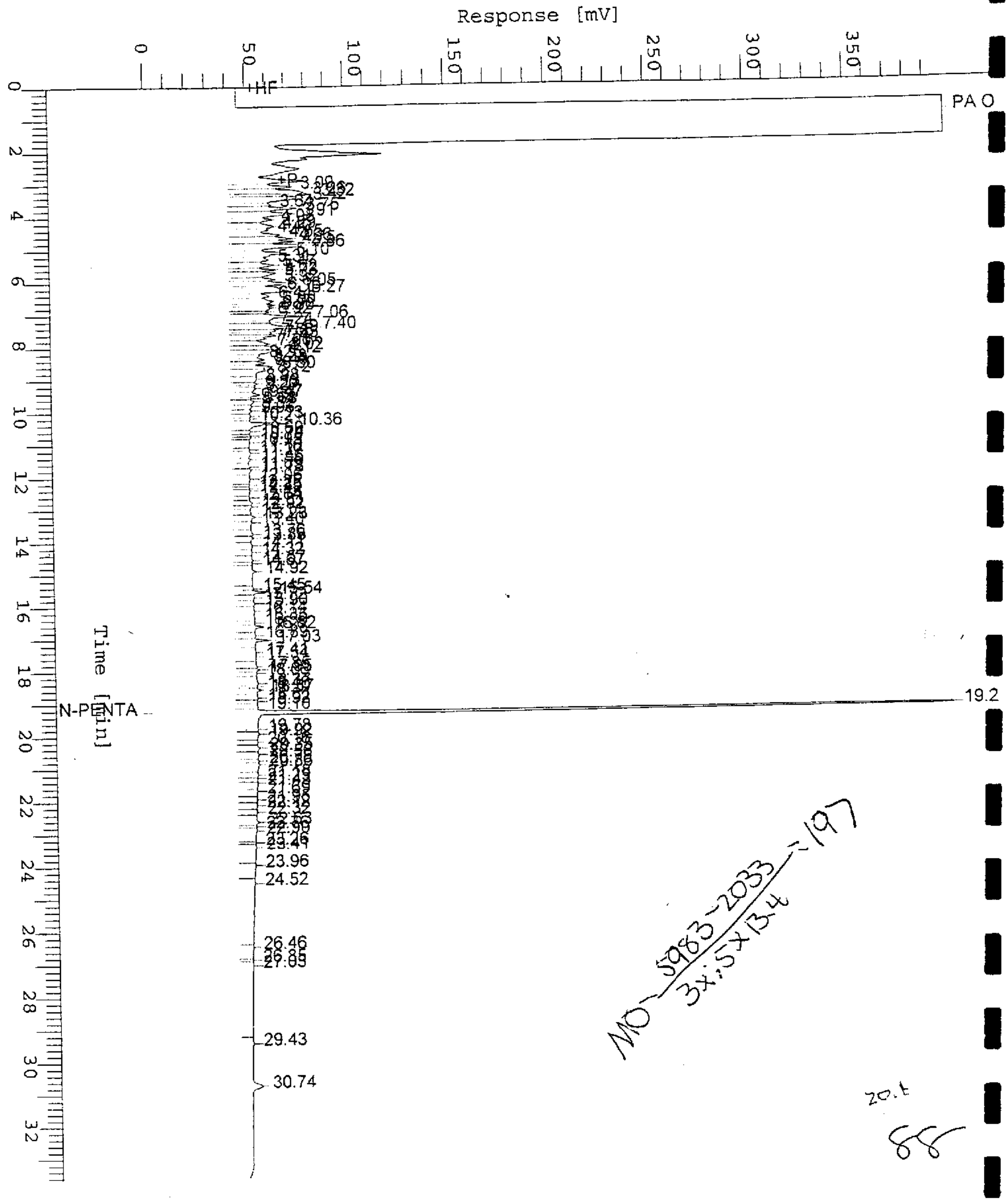
Chromatogram

Sample Name : DW9706E11-2 (500:1)
FileName : S:\GHP_04\0706\702B011.raw
Method : TPH04A
Start Time : 0.00 min
Scale Factor: 0.0

End Time : 33.65 min
Plot Offset: 0 mV

Sample #: EO-3
Date : 7/2/97 17:07
Time of Injection: 7/2/97 16:33
Low Point : 0.00 mV
Plot Scale: 400.0 mV

High Point : 400.00 mV



MO-5983-2033-197
3x,5x13.4

20.t
88

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek		
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID		
San Mateo, CA 94402	Sample Descript.:	XSD		
Attention: Paul Hoffey	Work Order #:	9706E11	-01, 02, 04	Reported: Jul 7, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0630970HBPEXA
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3510
Analyst:	G. Fish
MS/MSD #:	9706958-06-XSD
Sample Conc.:	150
Prepared Date:	06/30/97
Analyzed Date:	07/01/97
Instrument I.D.#:	GCHP4A
Conc. Spiked:	1000 µg/L
Result:	840
MS % Recovery:	69
Dup. Result:	920
MSD % Recov.:	77
RPD:	9.1
RPD Limit:	0-50

LCS #:	LCS070197-LCS
Prepared Date:	07/01/97
Analyzed Date:	07/02/97
Instrument I.D.#:	GCHP4B
Conc. Spiked:	1000 µg/L
LCS Result:	750
LCS % Recov.:	75

MS/MSD	50-150
LCS	60-140
Control Limits	

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	EO-1	
Attention: Paul Hoffey	Work Order #:	9706E11-01, 03, 04	Reported: Jul 7, 1997

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-Benzene
QC Batch#:	GC070297801009A	GC070297801009A	GC070297801009A
Analy. Method:	EPA 8010	EPA 8010	EPA 8010
Prep. Method:	EPA 5030	EPA 5030	EPA 5030
Analyst:	E. Cunanan	E. Cunanan	E. Cunanan
MS/MSD #:	9706E03-01-MSD	9706E03-01-MSD	9706E03-01-MSD
Sample Conc.:	N.D.	N.D.	N.D.
Prepared Date:	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/02/97	07/02/97	07/02/97
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Result:	26	27	24
MS % Recovery:	104	108	96
Dup. Result:	27	26	23
MSD % Recov.:	108	104	92
RPD:	3.8	3.8	4.3
RPD Limit:	0-25	0-25	0-25

LCS #:	LCS070297-LCS	LCS070297-LCS	LCS070297-LCS
Prepared Date:	07/02/97	07/02/97	07/02/97
Analyzed Date:	07/02/97	07/02/97	07/02/97
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	26	27	25
LCS % Recov.:	104	108	100
MS/MSD	60-140	60-140	60-140
LCS	65-135	70-130	70-130
Control Limits			

Please Note:
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SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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Erler & Kalinowski, Inc.	Client Project ID:	930040.07/Ekotek	
1730 So. Amphlett Blvd., Suite 320	Matrix:	LIQUID	
San Mateo, CA 94402	Sample Descript.:	EO-2	
Attention: Paul Hoffey	Work Order #:	9706E11-01, 03, 04	Reported: Jul 7, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC070197BTEX03A	GC070197BTEX03A	GC070197BTEX03A	GC070197BTEX03A	GC070197BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	9706E11-01-MSD	9706E11-01-MSD	9706E11-01-MSD	9706E11-01-MSD	9706E11-01-MSD
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.5	9.5	9.5	27	46
MS % Recovery:	95	95	95	90	77
Dup. Result:	6.0	6.0	6.4	16	29
MSD % Recov.:	60	60	64	53	48
RPD:	45	45	39	51	45
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS	LCS070197-LCS
Prepared Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Analyzed Date:	07/01/97	07/01/97	07/01/97	07/01/97	07/01/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.0	8.9	8.9	25	43
LCS % Recov.:	90	89	89	83	72
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

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CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 930040.07 Page 1 of 1

Project Name: EKotels

Source of Samples: 16-foot borings

Location: Oakland, CA

Analytical Laboratory:

Date Sampled: 6/24/97

Sampled By: Jeannine Kessell

Report Results To: Paul Hoffey

Phone Number: (415) 578-1172

9706E11

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
1	EO-2		4 VOAAs	9:25	8015m, 8020, 8010 *	Standard
1	EO-2		1 Amber Liter	10:00	↓	↓
2	EO-3		1 Amber Liter	10:20	↓	
3	EO-6		4 VOA's	9:35	↓	

Special Instructions:

* 8015m: total petroleum hydrocarbons (as gas), total extractable petroleum hydrocarbons (as diesel) + fuel fingerprint (as motor oil)

+ 8020: BTEX, * 8010: Halogenated VOCs

Relinquished By:

Name / Signature / Affiliation: Jeannine Kessell Jeannine Kessell / E&K

Date: 6/24/97 Time: 11:50

Received By:

Name / Signature / Affiliation: PHIL / Sequoia