

## **Transmittal Letter**

From: Mr Jim Jacobs	<b>Date:</b> 3 8(93
To: Dr. Ravi Arvlanatham Hameda Co. Dept.ol Environmental Wealth	<u>Via:</u> ★First ClassUPSFed - ExCourier
Subject: SUDSUTFORCE INVENTIGENT ON Report  We discussed on the telephone on You requested We believe you may be interested Is required	Job: Mr. Shernan Balah sik: Wahaner Property 1384 Russ Lun Hayward
We Are Sending: Enclosed Under Separate Aport.	arate Cover Via
Your information Your use Your review & comments Return to you	Please: Keep this material Return within 2 weeks Acknowledge Receipt
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#### ARTESIAN ENVIRONMENTAL CONSULTANTS

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March 9, 1993



Dr. Ravi Arulanatham Alameda County Department of Environmental Health 80 Swan Way, Room 200 Oakland, CA 94621

Re: Assessment of Public Hazards

Hohener Property 1384 Ruus Lane Hayward, California

Dear Dr. Arulanatham:

An Essenes Environmental, Inc., Subsurface Investigation report dated March 1, 1993 was submitted to you for the above mentioned site. Based on that work, the following statements can be made based on the analyses performed and the sample locations selected:

#### SUMMARY

- Shallow soils were impacted by motor oil, kerosene, diesel, toluene, ethylbenzene, xylenes, chlordane, dieldrin, and DDD. The extent of contamination is not fully known at this time. The highest concentrations appear to be associated with surface staining.
- Migration of soil contaminants onto adjacent properties does not appear to have occurred based on the soil samples collected at approximately 10 feet below ground surface.
- Groundwater was not impacted on the property and therefore the groundwater of adjacent properties should not be impacted from the subject property.

#### **ACTION LEVELS**

The highest concentrations of chemicals detected on the property are the low volatility chemicals: motor oil, diesel and kerosene. These chemicals do not have State Action levels described in Title 22 or Title 26. The other chemicals such as chlorinated pesticides (chlordane, dieldrin, DDE and methyoxychlor) are below the TTLC concentrations. The TTLC levels are listed for metals in the soil are listed on Tables 2

and 4 in the Subsurface Investigation report. All concentrations are on an order of magnitude below the listed TTLC and do not appear to pose health problems.

#### HEALTH RISKS

As described in the health and safety literature, the main routes of contamination migration appear to be through ingestion, inhalation, and dermal contact. Migration of contaminants onto adjacent properties through the wind appears remote due to the relatively low concentrations and low volatility of the contaminants. Migration of the contaminants through the shallow soils or groundwater appears to be unlikely based on the concentrations detected during the Subsurface Incestigation. Based on the Subsurface Investigation, it is in my professional opinion that the Hohener Property does not pose a threat to the public health for residents living on adjacent properties or nearby properties.

#### MITIGATION

Mitigation of soil contamination on the Hohener Property can be accomplished by removing the shallow contaminated soils using a backhoe or excavator and transporting the soils to the appropriate Class III landfill.

Please call me at (415) 257-4801 if you have further questions.

Sincerely,

James A. Jacobs, R.G. #4815

Principal Geologist

Olivia facobs

Olivia Jacobs, R.E.A. # 3219

Principal Environmental Assessor

## Essenes Environmental, Inc.

#### SUBSURFACE INVESTIGATION

Site:

Hohener Property 1384 Ruus Lane Hayward, California

Prepared For:

Mr. Sherman Balch Balch Enterprises 30960 Huntwood Avenue Hayward, CA 94544

March 1, 1993

Olivia facolo

Dennis Judd, R.E.A., R.E.H.S.

President

ames A. Jacobs, R.G# 4815

Principal Geologist

NO. 4815

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#### **FIGURES**

- 1. Site Location Map
- 2. Site Map with Soil Boring and Monitor Well Locations

#### **TABLES**

1. Analytic Results: Soil Samples- Soil Boring Samples - Organics and Hydrocarbons

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- 2. Analytic Results: Soil Boring Samples Metals
- 3. Analytic Results: Groundwater Samples Organics and Hydrocarbons
- 4. Analytic Results: Groundwater Samples Metals

#### **APPENDICES**

- A. Permit
- B. Boring Logs and Unified Soil Classification System
- C. Standard Operating Procedures
- D. Lab Reports and Chain of Custody Forms

#### **EXECUTIVE SUMMARY**

Essenes Environmental, Inc. (Essenes) conducted a subsurface investigation on the Hohener property at 1384 Ruus Lane in Hayward, California. The purpose of the investigation was to evaluate whether the groundwater and shallow soil on the property had been impacted from the on-site activities and to evaluate the potential environmental risks posed by the subject property to adjacent properties.

Twelve soil borings, designated as B-1 through B-8, and B-1A through B-4A, were drilled on the property on February 17, 1993. All borings were drilled into native material.

Boring B-1A through B-4A were drilled by licensed driller GUESS Drilling of San Rafael, California. Boring B-1 was drilled with a Mobile B-53 hollow stem auger rig. Due to drilling in inaccessible locations, borings B-1 through B-8 were drilled by licensed driller Artesian Environmental Consultants (#624461) using a 2-inch diameter hand augering tool. The soil borings B-1 through B-8 were drilled to a depth of 3 feet below ground surface. One alternate boring B-8' was drilled to 0.5 feet and abandoned due to resistance.

The soils were logged by a project geologist under the supervision of a California-registered geologist. Soil samples were collected in borings B-1 through B-8 at 6 inches, 18 inches and 36 inches below ground surface for lithologic, hydrologic and characterization and possible chemical analysis. Soil samples were collected in borings B-1A through B-4A at least every 5 feet for lithologic, hydrologic and characterization and possible chemical analysis.

Groundwater was measured to occur at about 11 feet below ground surface. Grab groundwater samples were collected in borings B-1A through B-4A. The samples were collected using a Teflon bailer in temporary well casings on February 17, 1993.

Selected soil and water samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) diesel (TPH-d), kerosene (TPH-k), motor oil (TPH-mo) by EPA Method 8015; benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020. Samples were also analyzed for purgeable halocarbons by EPA Method 8010/601, chlorinated pesticides by EPA Method 8080/608 and the CAM 17 metals by EPA Methods 3010/6010/7470.

#### CONCLUSIONS

SOILS- Purgeable halocarbons and gasoline (TPH-g) were not detected in the soils. Motor oil (TPH-mo) was detected in 9 borings (B-1, B-2, B-4, B-5, B-6, B-7, B-1A, B-2A and B-3A) at levels as high as 230 parts per million (ppm). Kerosene (TPH-k) was detected in B-6 at 5.5 ppm. Diesel (TPH-d) was detected in borings B-6 and B-2A at levels as high as 60 ppm. Toluene, ethylbenzene and xylenes were detected in boring B-5 at levels of 10, 8.7 and 58 ppm,

respectively. Chlorinated pesticides were detected in 2 borings: B-6 contained 7.3 parts per billion (ppb) of p,p' methyoxychlor and B-1A contained 2.7 ppb of dieldrin, 1.2 ppb p,p DDD and 77 ppb chlorodane. Metals were detected at concentrations associated with native soil conditions.

WATER- None of the target analytes were detected, except metals which were at concentrations associated with native conditions.

#### SUMMARY:

- Shallow soils were impacted by motor oil, kerosene, diesel, toluene, ethylbenzene, xylenes, chlorodane, dieldrin, and DDD. The extent of contamination is not fully known at this time. The highest concentrations appear to be associated with surface staining.
- Migration of contaminants onto adjacent properties through the wind appears remote due to the relatively low concentrations and low volatility of the contaminants.
- Migration of soil contaminants onto adjacent properties does not appear to have occurred based on the soil samples collected at approximately 10 feet below ground surface.
- · Groundwater was not impacted.

#### 1 INTRODUCTION

Essenes Environmental Inc. has been retained by Mr. Sherman Balch of Balch Development to conduct a subsurface investigation at the Honeher property at 1384 Ruus Lane in Hayward, California (Figures 1 and 2).

The purpose of the investigation was to evaluate whether the groundwater and shallow soil on the property had been impacted from the on-site activities and to evaluate the potential environmental risks posed by the subject property to adjacent properties. All activities were performed under the supervision of a California-registered geologist.

#### 1.1 Scope of Work

The scope of work for the project was as follows:

- 1) Drill twelve soil borings and collect soil samples in all the borings for lithologic and hydrologic characterization and possible chemical analysis;
- Analyze selected soil and grab groundwater samples for total petroleum hydrocarbons as gasoline (TPH-g) diesel (TPH-d), kerosene (TPH-k), motor oil (TPH-mo) by EPA Method 8015; benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020. Samples were also analyzed for purgeable halocarbons by EPA Method 8010/601, chlorinated pesticides by EPA Method 8080/608 and the CAM 17 metals by EPA Methods 3010/6010/7470.
- 3) Review all field and laboratory data and prepare a report of this investigation.

#### 2 BACKGROUND

#### 2.1 SITE DESCRIPTION

The property is a 2.26 acre vacant lot located at 1384 Ruus Lane in Hayward, California in an industrial zone. The property is bordered to the north by Ruus Land, to the east by a portable sanitary service business; to the south by a vacant lot fronting on Industrial Boulevard; and to the west by a vacant lot fronting on Stratford Road.

#### 2.2 SITE HISTORY

The property is believed to have been used for the storage of various types of junk. Soil staining is present. On June 1, 1992, Essenes conducted surface soil sampling. Four soil samples were analyzed for TPH-g, TPH-d, purgeable halocarbons, chlorinated pesticides and CAM 17 metals. Diesel at levels as high as 7.4 ppm, chlordane as high as 150 ppb, aldrin at 0.61 ppb and DDE at 0.69 ppb were detected on the property. Metals were detected at concentrations associated with naturally occurring levels.

#### 3 SUBSURFACE INVESTIGATION

Essenes obtained permission to drill the borings through Alameda Flood Control - Zone 7, the Alameda County Environmental Health Department and the Hayward Fire Department. The boring permit is included in Appendix A. Underground service alert was notified prior to drilling. Essenes developed a health and safety plan and a magnetic line location survey was conducted prior to field activities.

Essenes supervised the drilling of twelve soil borings on the property. The borings, designated B-1 through B-8, and B-1A through B-4A, were drilled on February 17, 1993. All borings were drilled into native material. Borings B-1A through B-4A were drilled by licensed driller GUESS Drilling of San Rafael, California with a Mobile B-53 hollow stem auger rig. Borings B-1A through B-4A were drilled to a maximum depth of 15 feet below ground surface with an 8-inch diameter hollow stem augers. Due to inaccessible drilling locations, borings B-1 through B-8 were drilled by licensed driller Artesian Environmental Consultants using a 2-inch diameter hand augering tool. The soil borings B-1 through B-8 were drilled to a depth of 3 feet below ground surface. One alternate boring B-8' was drilled to 0.5 feet and abandoned due to resistance.

Field work was performed by a project geologist under the supervision of a California-registered geologist. Soil samples were collected in borings B-1 through B-8 at 6 inches, 18 inches and 36 inches below ground surface and at least every 5 feet in borings B-1A through B-4A. The samples were logged in the field for lithologic, hydrologic characteristics using the Unified Soil Classification System. Boring logs and the Unified Soil Classification System are included in Appendix B. Standard operating procedures for hollow stem auger soil sampling and continuous core sampling are included in Appendix C.

Groundwater was measured to occur at about 11 feet below ground surface. Grab groundwater samples were collected in borings B-1A through B-4A. The samples were collected using a Teflon bailer in temporary well casings on February 17, 1993.

Drilling equipment was decontaminated between borings using a steam cleaner for hollow stem augers or Alconox wash and two deionized water rinses for the hand augering equipment. The rinse water and drill cuttings were stored on site in labeled, 55-gallon, DOT 17-H drums in a manner consistent with agency regulations and guidelines. Borings B-1A through B-4A were abandoned on February 17, 1993 using a neat cement grout. The grout was placed in the bottom of the borehole with a tremie pipe. Shallow 2-inch diameter borings B-1 through B-8 were filled with low permeability native soils.

#### 4 LABORATORY ANALYSES

All soil samples were labeled and packed on crushed ice for transportation to Chromalab, Inc of San Ramon, California, a State certified hazardous materials laboratory. Selected soil and water samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) diesel (TPH-d), kerosene (TPH-k), motor oil (TPH-mo) by EPA Method 8015; benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020. Samples were also analyzed for purgeable halocarbons by EPA Method 8010/601, chlorinated pesticides by EPA Method 8080/608 and the CAM 17 metals by EPA Methods 3010/6010/7470. Chain of Custody documentation included in Appendix D accompanied all samples to the laboratory.

#### 5 ANALYTIC RESULTS

#### 5.1 SOIL ANALYSIS

The soil sample analyses are summarized in Tables 1 and 2. Purgeable halocarbons and gasoline (TPH-g) were not detected in the soils. Motor oil (TPH-mo) was detected in 9 borings (B-1, B-2, B-4, B-5, B-6, B-7, B-1A, B-2A and B-3A) at levels as high as 230 parts per million (ppm). Kerosene (TPH-k) was detected in B-6 at 5.5 ppm. Diesel (TPH-d) was detected in borings B-6 and B-2A at levels as high as 60 ppm. Toluene, ethylbenzene and xylenes were detected in boring B-5 at levels of 10, 8.7 and 58 ppm, respectively. Chlorinated pesticides were detected in 2 borings: B-6 contained 7.3 parts per billion (ppb) of p,p' methyoxychlor and B-1A contained 2.7 ppb of dieldrin, 1.2 ppb p,p DDD and 77 ppb chlordane. Metals were detected at concentrations associated with native soil conditions.

#### 5.2 GROUNDWATER ANALYSIS

The groundwater sample analysis is summarized in Tables 3 and 4. None of the target analytes were detected, except metals which were at concentrations associated with native conditions.

#### 6 DISTRIBUTION

Essenes recommends that the client forward copies of this report to the appropriate regulatory agencies and representatives. Copies of this report have been included for this purpose. Copies sent to the regulators should include a cover letter from the client attesting the validity of this report to the best of the client's knowledge. This letter must be prepared on the client's letterhead and signed by the appropriate individual.

Dr. Ravi Arulanatham Alameda County Department of Environmental Health 80 Swan Way, Room 200 Oakland, CA 94621

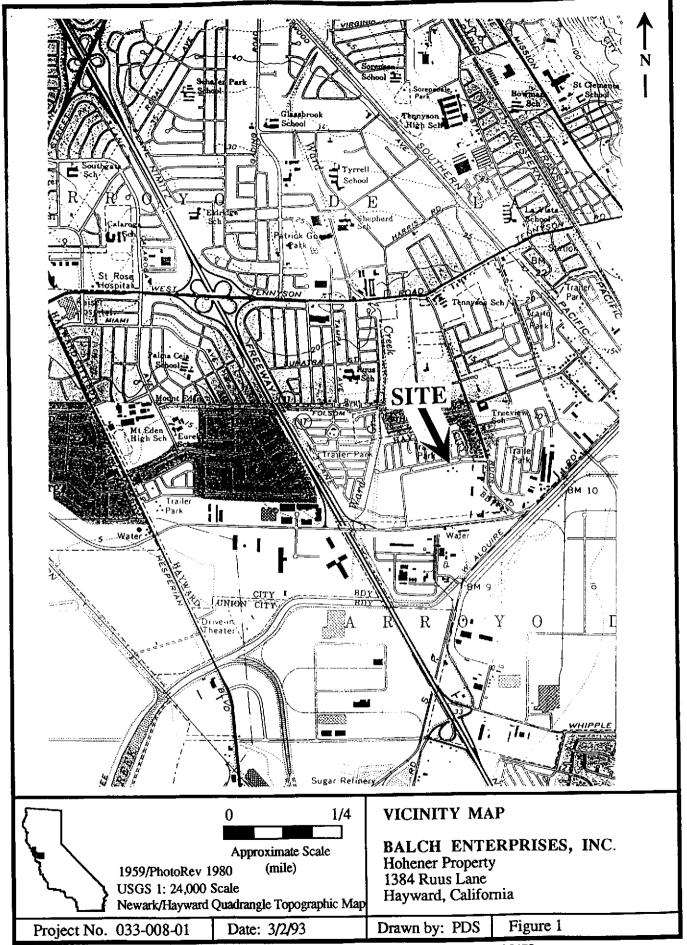
Mr. Hugh Murphy Hayward Fire Department 25151 Clawiter Road Hayward, CA 94545-2731

#### 7 LIMITATIONS

The authors and firm offer no assurance and assume no responsibility for site conditions or activities which were beyond the scope of work requested by the client and referenced in the introduction of this report. The compensation agreed to by the client and the firm corresponds to the scope of work defined, with the associated limitations which are an integral and important part of this report. This report was prepared with generally accepted standards of environmental geological practice in California at the time this investigation was performed. This investigation was conducted solely as a tool in assessing environmental conditions of the soil and/or groundwater with respect to relative hydrocarbon product contamination in the immediate vicinity of the former underground storage tank. No soil engineering or geotechnical recommendations are implied or should be inferred. Evaluation of the geologic conditions at the site for the purpose of this investigation is made from a limited number of observation points. There may be variations in subsurface conditions away from the sample points available. There are no representations, warranties, or guarantees that the points selected for sampling are in anyway representative of the entire site. Data from this report reflects the sample conditions at specific locations at a specific point in time. No other interpretations, representations, warranties, guarantees, express or implied, are included or intended by this report. Additional work, including further subsurface investigation, can reduce the inherent uncertainties associated with this type of investigation. There are no guarantees or warranties, express or implied, that undocumented, nonpermitted, illegally or improperly abandoned subsurface containers (such as underground storage tanks or drums) or other sources of contamination or contaminated soil or groundwater itself, or covered, encapsulated, inaccessible or unobservable hazardous materials either do or do not exist on the property.

This project involved hazardous or toxic compounds and there are certain inherent risk factors involved (such as limitations on laboratory or analytical methods or equipment, variations in subsurface conditions, and risks associated with specific analysis not requested by the client), which may adversely affect the results of the project, even though the services were performed with such skill and care as are generally accepted professional standards for the environmental geology profession.

This report and all matters contained herein were prepared for the sole and exclusive benefit of the client specified herein, and is intended only for the use of the client. Neither all, nor any part of the contents of this report, or copy thereof, shall be used for any purpose by anyone but the client specified herein nor shall it be conveyed or disseminated by anyone without the express written consent of the authors. No one, except for the client specified herein, may rely on this report for any purpose. Any person or entity who obtains or reads this report, or a copy thereof, other than the client specified herein, expressly assumes all risk of damages to himself or third persons arising out of reliance thereon or use thereof and waives the right to bring any action based on this report, directly or indirectly, and the authors shall have no liability to any such person or entity.



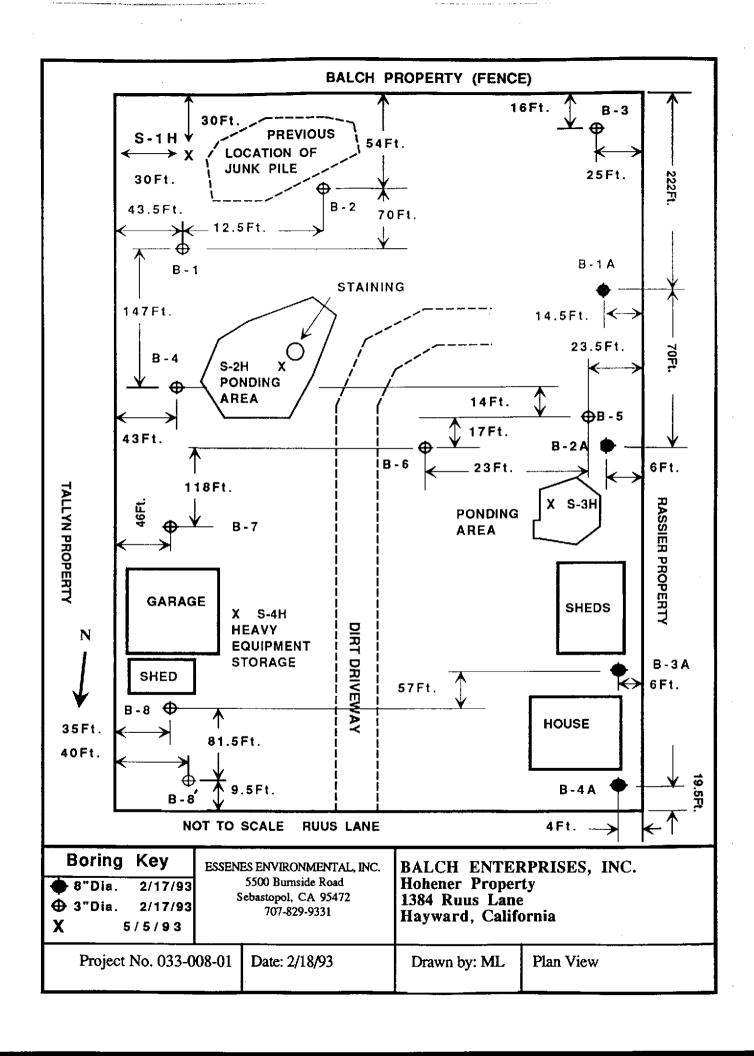


Table 1- Summary of Laboratory Data - Soils Hohener Property 1384 Ruus Lane Hayward, California Sample Date: 2/17/93

Sample I.D.	Depth	TPH-k	TPH-D	TPH-mo	Purg. Hal.	TPH-g	B-T-E-X	Chl. Pest.
	ft	ppm	ppm	ppm	ppb	ppm	ppb	ррб
B-1-1	0-0.5	ND	ND	93	ND	ND	ND-ND-ND-ND	ND
B-2-1	0-0.5	ND	ND	14	ND	ND	ND-ND-ND-ND	ND
B-3-1	0-0.5	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-4-1	0-0.5	ND	ND	31	ND	ND	ND-ND-ND-ND	ND
B-5-1	0-0.5	ND	ND	21	ND	ND	ND-10-8.7-58	ND
B-6-1	0-0.5	5.5	60*	230	ND	ND	ND-ND-ND-ND	7.3 p,p' methyoxychlor
B-7-1	0-0.5	ND	ND	26	ND	ND	ND-ND-ND-ND	ND
B-8-1	0-0.5	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-1A-6	0-0.5	ND	ND	140	ND	ND	ND-ND-ND-ND	2.7 dieldrin; 1.2 p,p'- DDE; 77 chlorodane
B-1-A-11.0-11.5	11.0-11.5	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-2 A-6	0-0.5	ND	3	26	ND	ND	ND-ND-ND-ND	ND
B-2-A-10.5-11.0	10.5-11.0	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-3 A-6	0-0.5	ND	ND	25	ND	ND	ND-ND-ND-ND	ND
B-3-A-10.5-11.0	10.5-11.0	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-4 A-6	0-0.5	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-4-A-11.0-11.5	11.0-11.5	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND

<sup>\*=</sup> unknown hydrocarbon on diesel range

Table 2- Summary of Laboratory Data - Metals Hohener Property 1384 Ruus Lane Hayward, California Sample Date: 2/17/93

Sample	Depth	Sb	As	Ва	Be	Cd	Co	Cr	Cu	Pb	Hg	Mo	Ni	Se	Ab	ΤI	٧	Zn
I.D.	ft	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
B-1-1	0-0.5	2.5	5.2	104	0.44	ND	11	24	4.5	140	0.11	ND	40	ND	ND	ND	39	120
8-2-1	0-0.5	1.2	5.2	83	0.40	ND	9.1	22	17	11	ND	ND	36	ND	ND	10	23	29
B-3-1	0-0.5	1.3	4.3	100	0.51	ND	11	24	60	22	0.12	ND	41	ND	ND	ND	54	58
B-4-1	0-0.5	1.6	1.0	106	0.42	ND	12	17	52	36	0.14	ND	36	ND	ND	ND	34	77
B-5-1	0-0.5	1.1	10	91	0.40	ND	13	28	68	42	0.89	ND	43	ND	ND	ND	46	220
B-6-1	0-0.5	ND	ND	70	0.40	ND	16	60	72	15	0.15	ND	ND	ND	ND	ND	30	43
B-7-1	0-0.5	ND	7.4	91	0.42	ND	11	27	46	14	0.059	ND	38	ND	ND	ND	30	73
B-8-1	0-0.5	ND	7.8	114	0.74	ND	18	8.3	87	39	0.26	ND	31	ND	ND	ND	105	101
B-1A-6	0-0.5	1.6	3.7	91	0.47	ND	12	41	36	35	0.12	ND	39	ND	ND	ND	43	60
B-1-A-11.0-11.5	11.0-11.5	ND	1.7	89	0.19	ND	5.3	27	18	6.1	ND	ND	28	ND	ND	ND	31	33
B-2 A-6	0-0,5	1.1	1.5	68	0.29	ND	11	22	39	61	0.14	ND	31	ND	ND	ND	23	107
B-2-A-10,5-11,0	10.5-11.0	1.2	6.1	92	0.40	ND	9.6	24	20	8.9	ND	ND	41	ND	ND	ND	20	36
B-3 A-6	0-0.5	2.2	6.5	66	0.34	ND	11	37	67	44	0.15	ND	64	ND	70	ND	32	170
B-3-A-10.5-11.0	10.5-11.0	1.6	5.1	96	0.33	ND	8.5	23	20	9.6	ND	ND	37	ND	100	ND	17	300
B-4 A-6	0-0.5	ND	2.4	150	0.70	ND	20	68	61	14	0.24	ND	102	ND	ND	NO	72	62
B-4-A-11.0-11.5	11.0-11.5	1.3	ND	95	0.38	ND	9.6	22	20	9	ND	NO	43	ND	9	ND	24	35
TTLC- (ppm)		500.0	500.0	10000	75.00	100	8000	500	2500	1000	20	3500	2000	100	500	700	2400	5000

Table 3- Summary of Laboratory Data - Groundwater Hohener Property 1384 Ruus Lane Hayward, California

Sample	Sample	TPH-k	TPH-D	TPH-mo	Purg. Hal.	TPH-g	B-T-E-X	Chl. Pest.
I.D.	Date	ppb	ppb	ppb	ppb	ppb	ppb	ppb
B-1 A-AQ	2/17/93	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-2-A-AQ	2/17/93	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-3 A-AQ	2/17/93	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND
B-4 A-AQ	2/17/93	ND	ND	ND	ND	ND	ND-ND-ND-ND	ND

Table 4- Summary of Laboratory Data - Groundwater: Metals

Hohener Property
1384 Ruus Lane
Hayward, California
Sample Date: 2/17/93

Olo	Depth	Sb	As	Ba	Ве	Cd	Co	Cr	a	Pb	Hg	Mo	Ni	Se	Αb	ΤI	٧	Zη
Sample	Y 250				ppm	mag	ppm	ppm	mag	ppm	ppm	ppm	ppm	ppm	ρрπ	ppm	ppm	ppm
I.D.	\1,7_	ppm	ppm	ppm		111	ND	ND	0,01	ND	ND	ΪΝΟ	ND	ND	ND	ND	0.03	0.02
B-1A-AQ	0-10/5	ND	ND	0.07	ND	ND							ND	ND	ND	ND	0.03	0.03
B-2A-AQ	0- <b>A</b> .5	ND	0.01	0.07	ND	ND	ND	ND	0.01	ND	ND	ND				_	0.02	0.02
B-3A-AQ	0/0\5	ND	ND	0.11	ND	ND	ND	NO	0.01	ND								
B-4A-AQ	0.0.3	ND	ND	0.06	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.01
STICE (nem)	J.A	15.0	5.0	100	0.75	1	80	5	25	- 5	0.2	350	20	1	5	7	24	250

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#### ABBREVIATIONS USED IN THE TABLES

ppb= parts per billion

ppm= parts per million

TPH-d= total petroleum hydrocarbons as diesel

TPH-g= total petroleum hydrocarbons as gasoline

TPH-k= total petroleum hydrocarbons as kerosene

TPH-mo= total petroleum hydrocarbons as motor oil

Chl. Pest.= chlorinated pesticides

Purg. Hal.= purgeable halocarbons

B= benzene

T= toluene

E= ethylbenzene

X= xylenes

Sb= antimony

As= arsenic

Ba= barium

Be= beryllium

Cd= cadmium

Co= cobalt

Cr= chromium

Cu= copper

Pb= lead

Hg= mercury

Mo= molybdenum

Ni= nickel

Se= selenium

Ag= silver

Tl= thallium

V= vanadium

Zn= zinc

NA= not analyzed

ND= below measured laboratory detection level



**APPLICANT'S** 

at. mentals 1

## ZONE WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600 FAX (510) 462-3914

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE	FOR OFFICE USE
OCATION OF PROJECT Hohener Property 1384 Rus Lave Hayward et	PERMIT NUMBER 93067 LOCATION NUMBER
client Dennis Jude lame Dennis Jude lame Phone 707-829-9331 City 5-500 Burnisher Zip 9-472	PERMIT CONDITIONS  Circled Permit Requirements Apply
PPLICANT Name  Artestan Environmental Consultanta Independent of the Phone 415-257483  City San Robael CA Zip 74901  TYPE OF PROJECT  Well Construction  Cathodic Protection  General  Water Supply  Contamination  Well Destruction  PROPOSED WATER SUPPLY WELL USE  Lionestic Industrial Other  DRILLING METHOD:  Mud Rotary Air Rotary Auger  DRILLER'S LICENSE NO.  C-624461  C-57  WELL PROJECTS  Drill Holo Diameter  Casing Diameter Nore In.  Depth 20 ft.  Surface Seal Dopth ft.  Number 12	2. Submit to Zono 7 within 60 days after completion of permitted work the original Department of Water Resources Water Wolf Orillers Report or equivalent for well Projects, or dritting logal and location sketch for geotechnical projects.  3. Permit is void if project not begun within 90 days of approval date.  B. WATER WELLS, INCLUDING PIEZOMETERS  1. Minimum surface seal thickness is two inches of cement grout placed by transe.  2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for demestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.  C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two foot with compacted material. In areas of known or suspected contamination, tremied cement grout
Grout Wy Near Constant September 1 April 1980 Maximum Maximum Hole Diameter 8 In. Depth 20' ft.	Approved Wyman Hong Date 10 Feb 9

alaha

# File - Esseres Alayund MISSION DIVISION 24300 CLAWITER RD HAYWARD CA 94545

02-12-93

ARTESIAN ENVIRONMENTAL CONSULTANTS 3175 KERNER BL STE "E" SAN RAFAEL, CA 94901

Thar Customer,

Thank you for notifying us and other utilities through Underground Service Alert (USA) of your intent to work in the vicinity of our underground facilities. Surface markings have been, or will be, provided at the work site.

The material contained in this letter shall apply to all your jobs in our service area which may involve our facilities.

Pacific Gas and Electric Company exercises due care in making these surface markings as complete and accurate as reasonably possible. However, because of the nature of underground construction, the precise location of underground facilities can only be determined by you through careful probing or hand digging in compliance with Article 6 of the California Occupational Safety and Health Administration (Cal/OSHA) Construction Safety Orders.

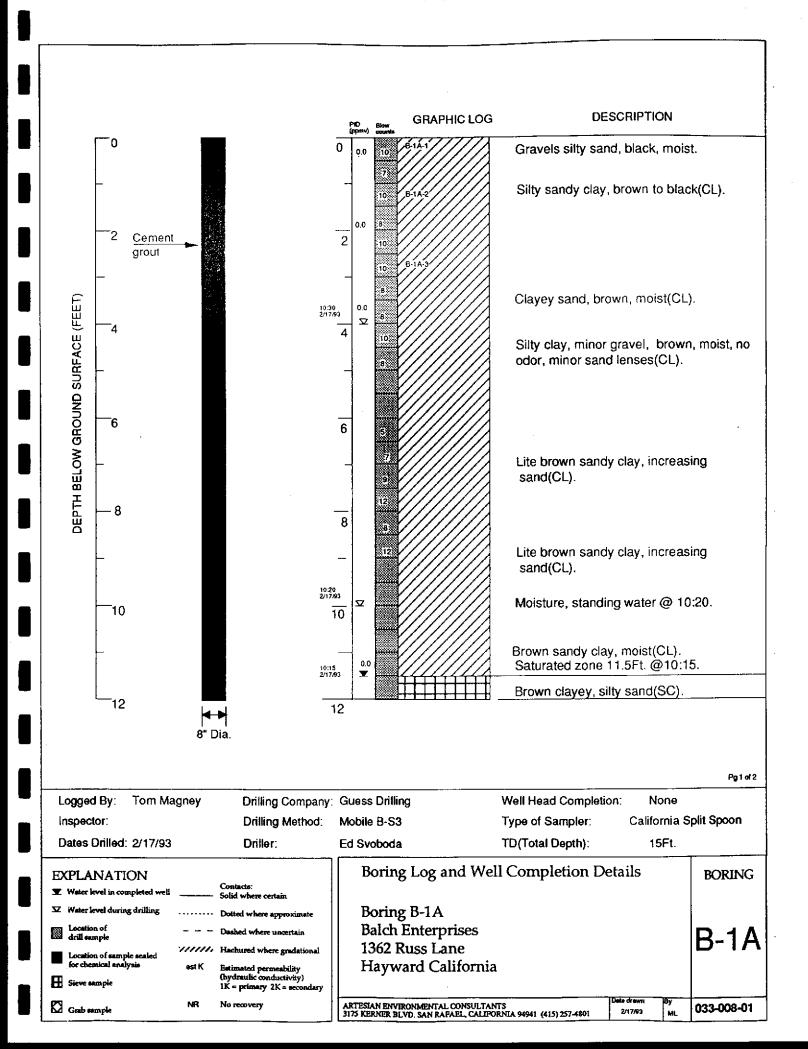
USA markings are only valid for 14 days; therefore, please renew your request with USA every 2 week period until the project is complete. We would like to emphasize the requirement for notifying USA at least two working days prior to the start of the actual construction.

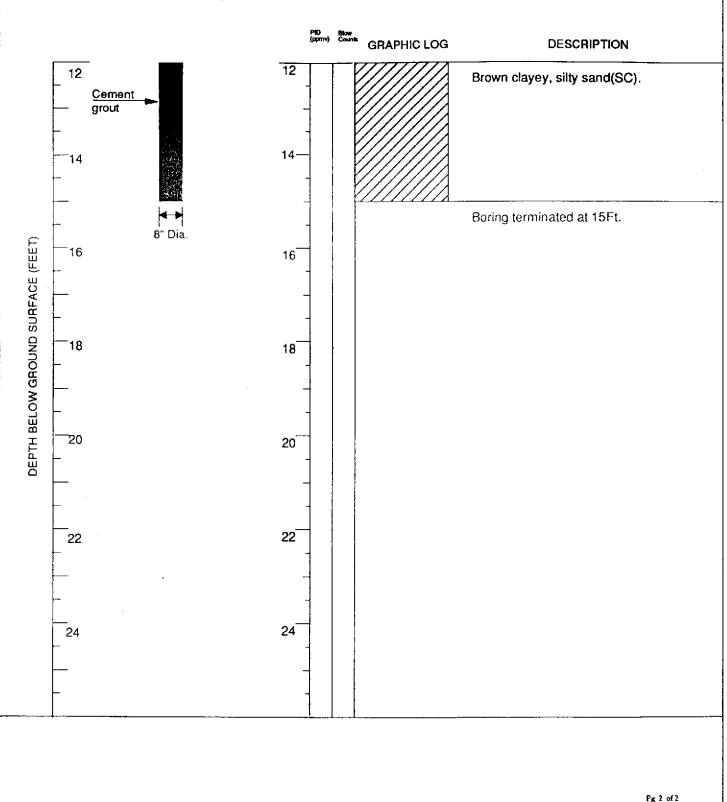
If you have any questions concerning USA, please call Don Baker at (510) 784-3227.

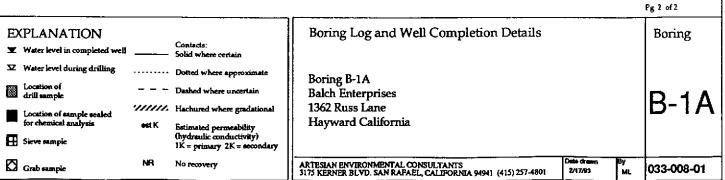
Thank you for your cooperation.

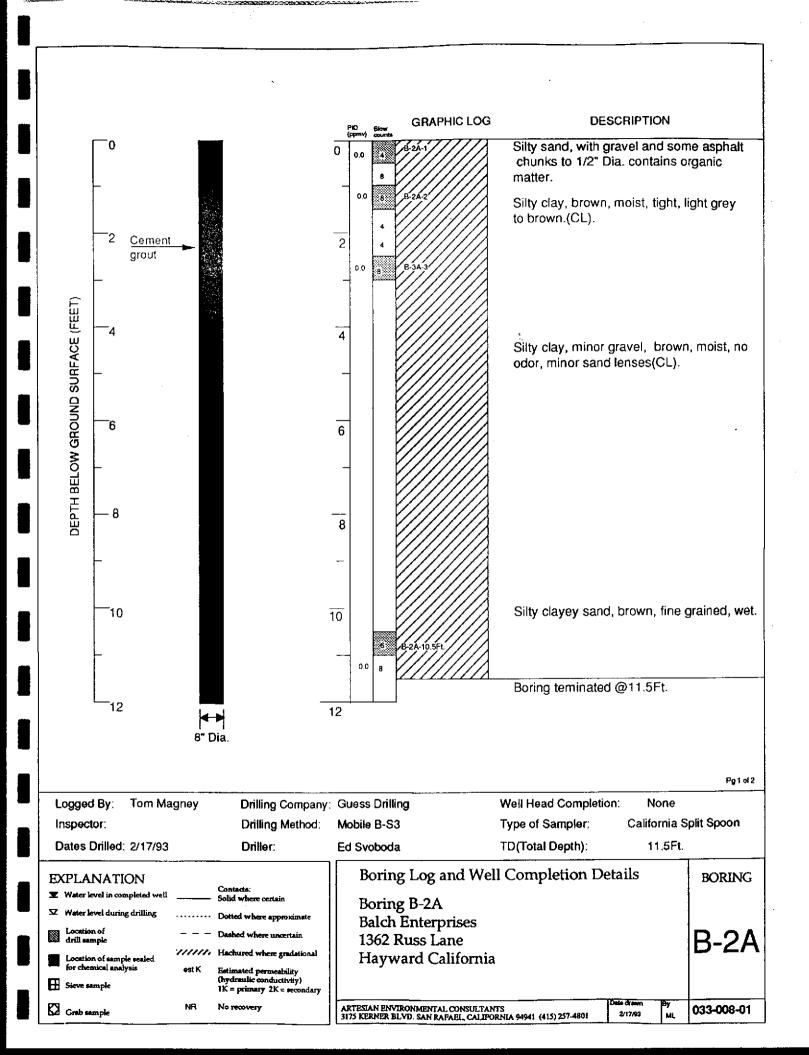
Sincerely,

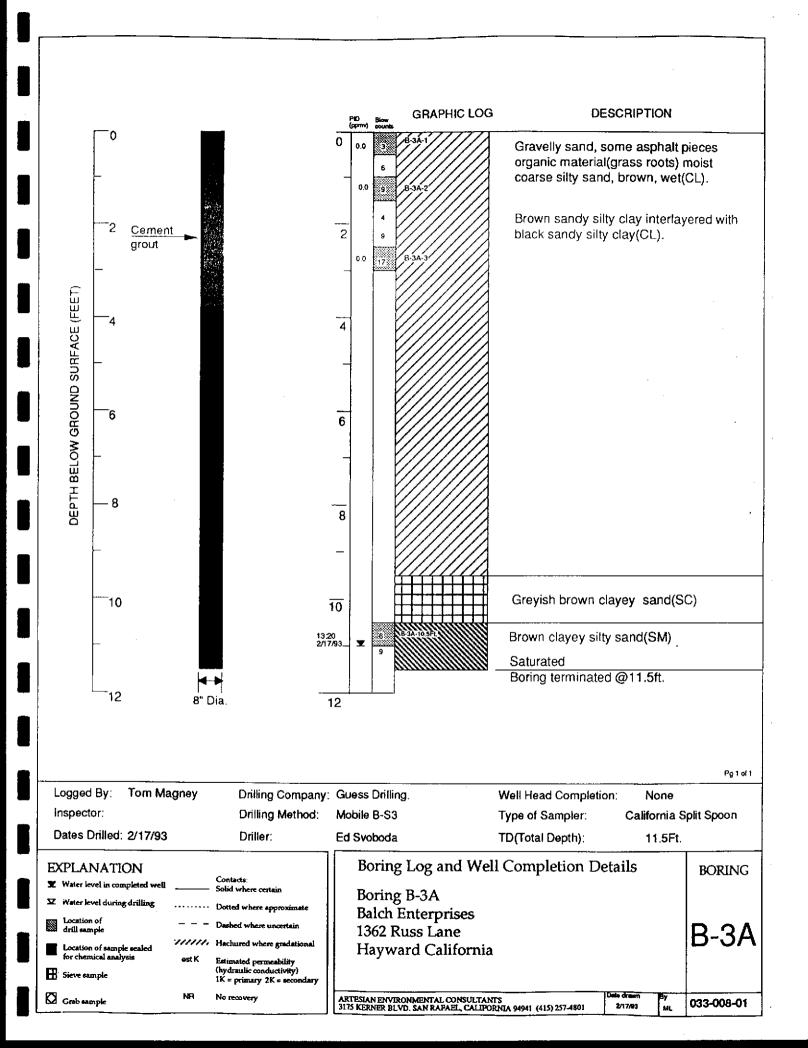
IRENE DEGL'INNOCENTI DIVISION GAS ENGINEER

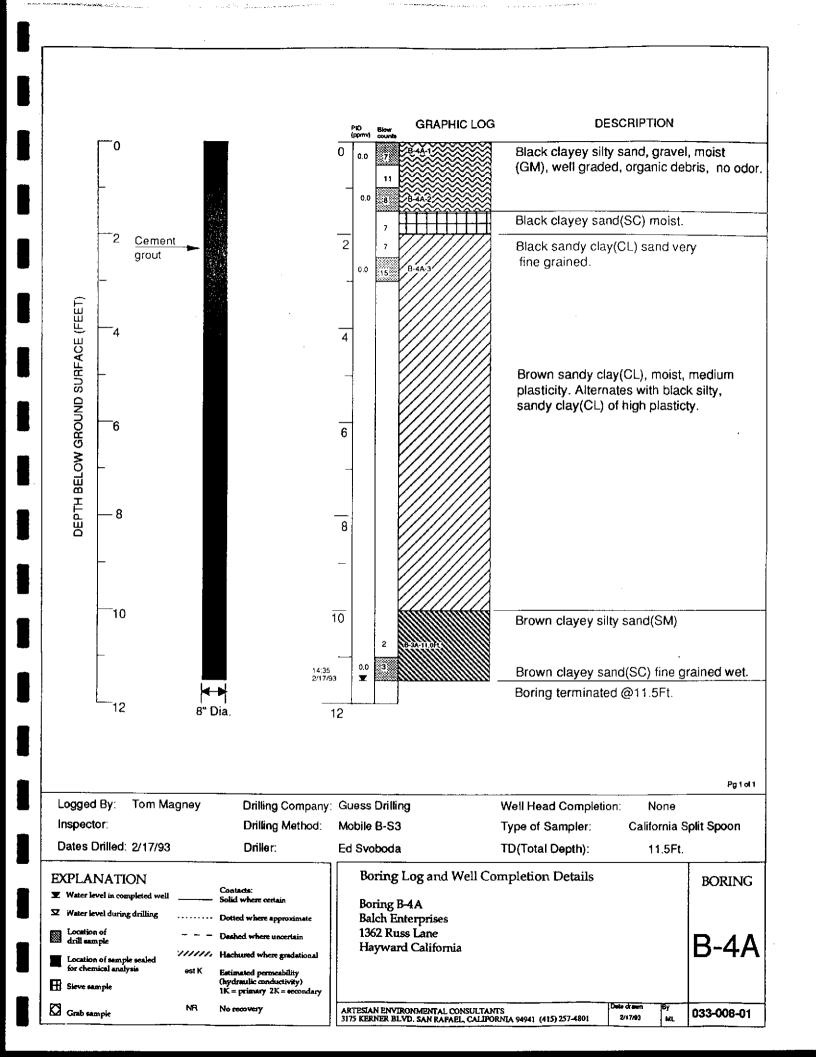


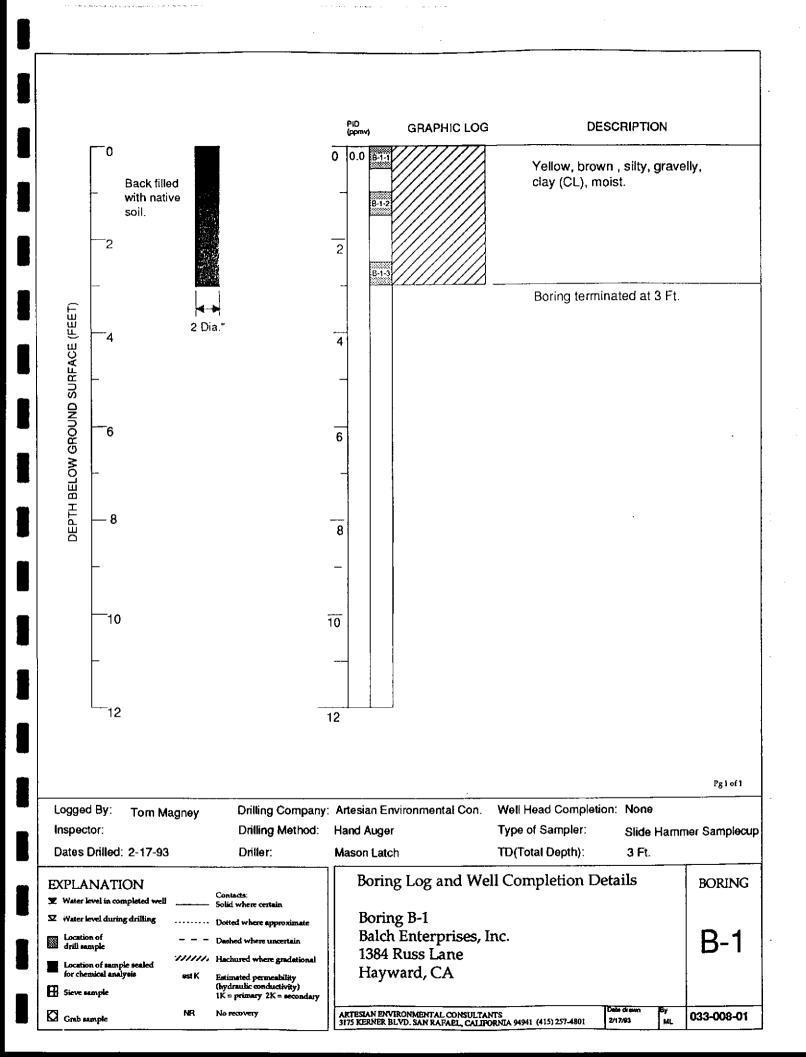


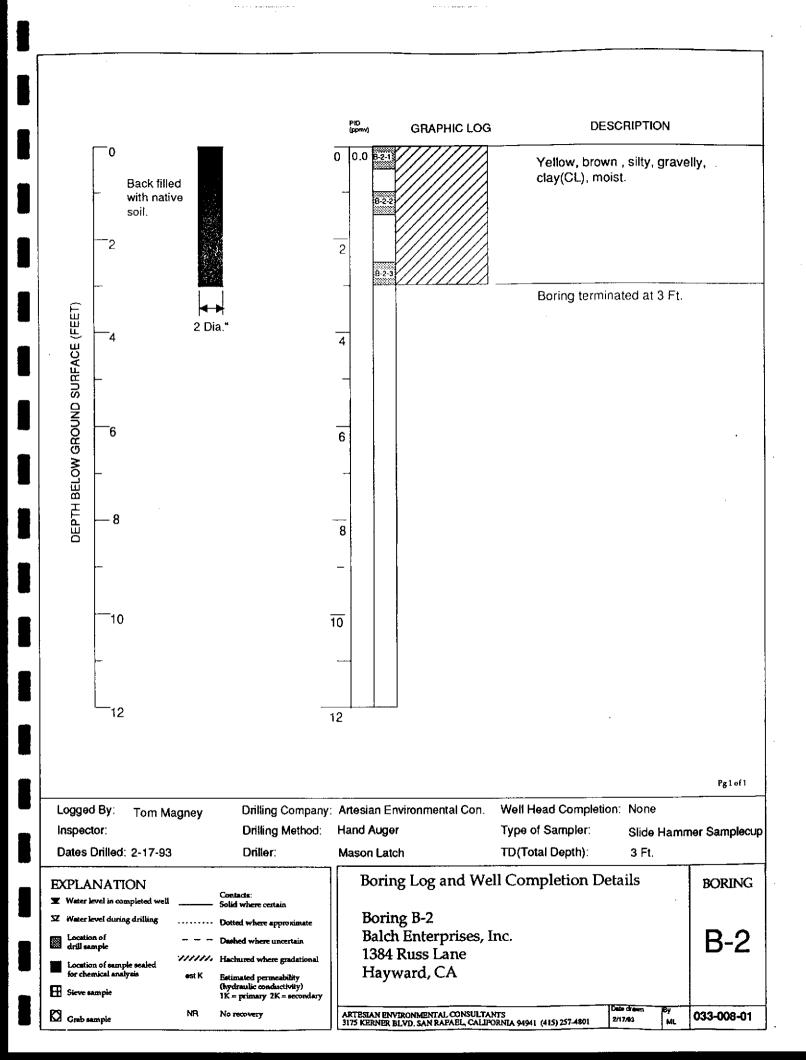


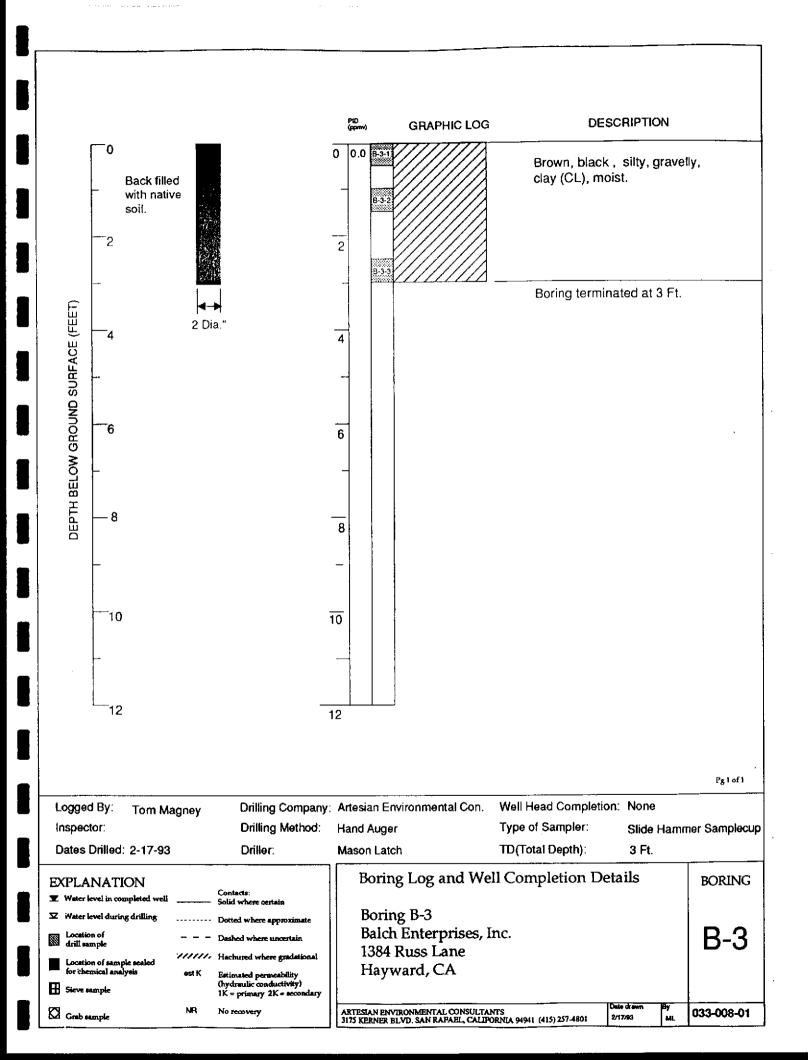


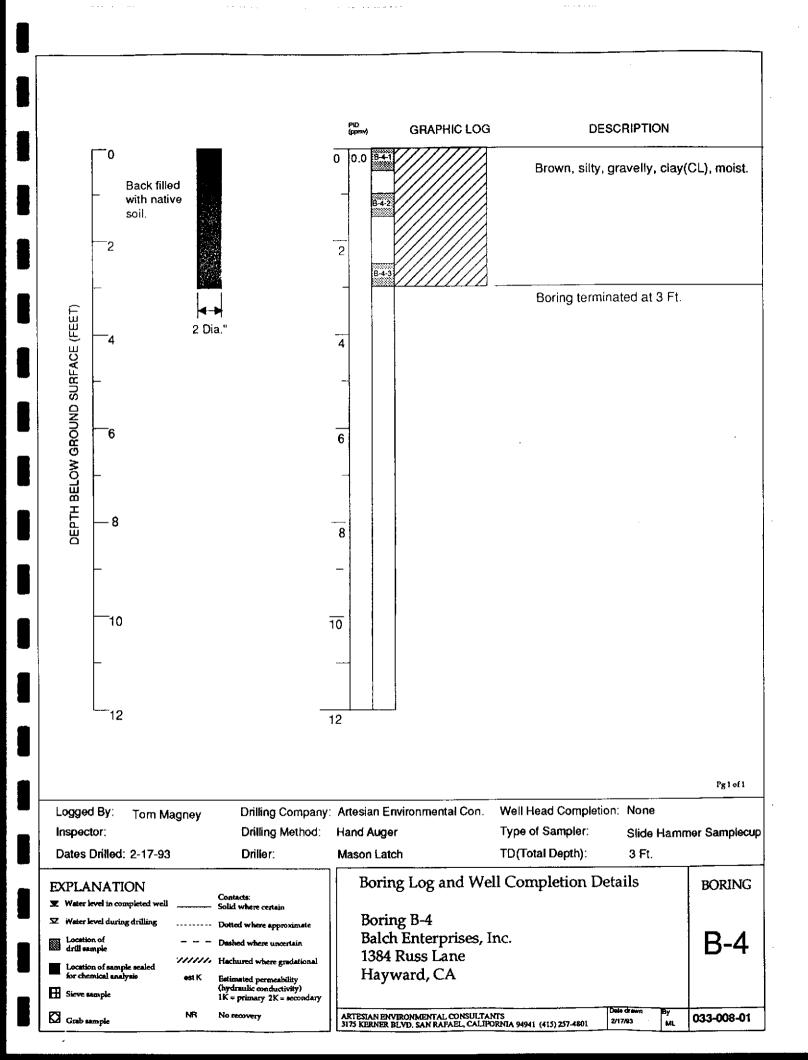


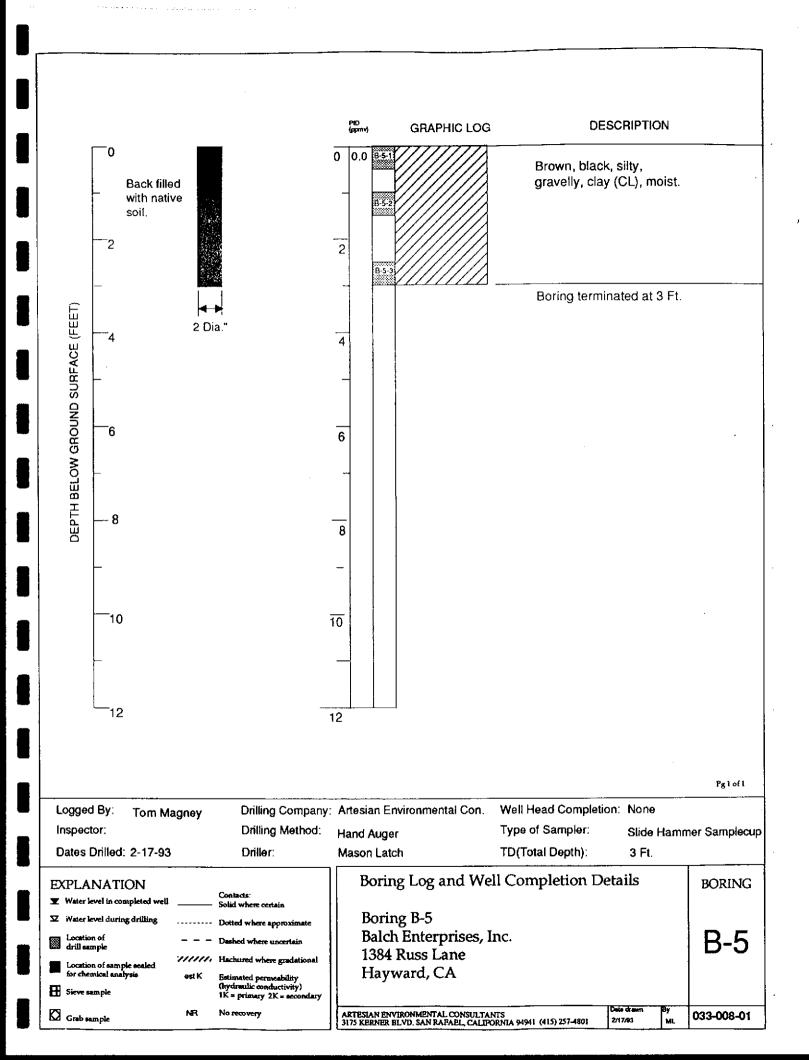


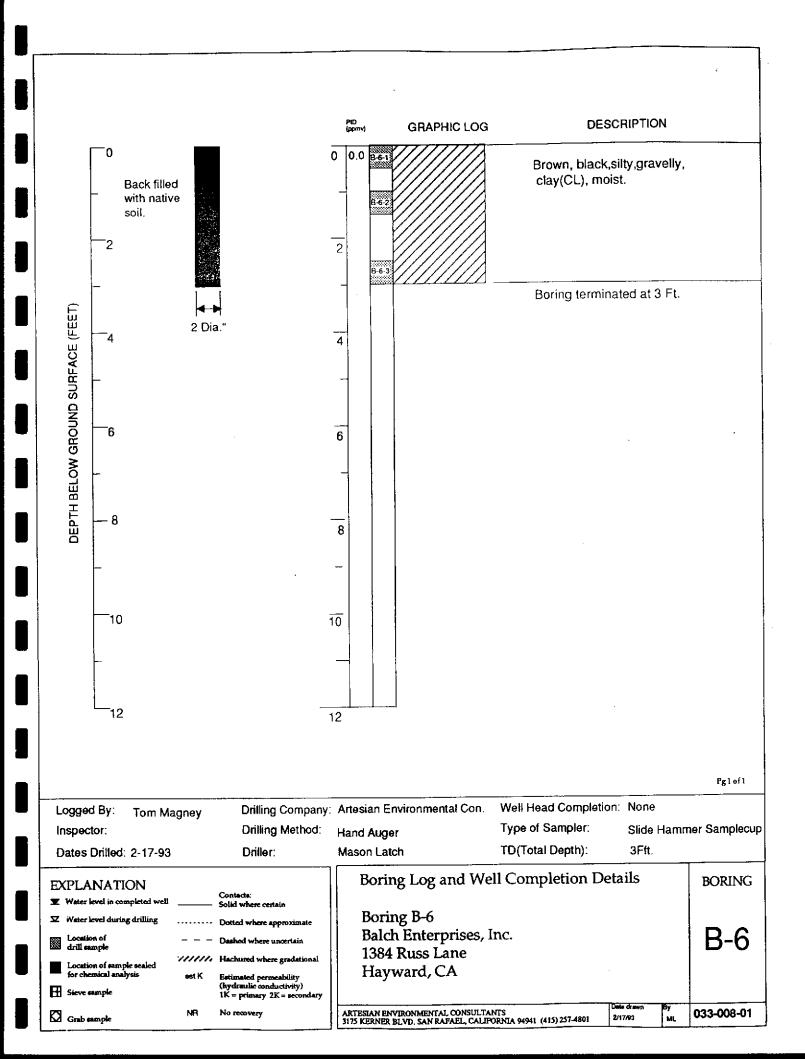


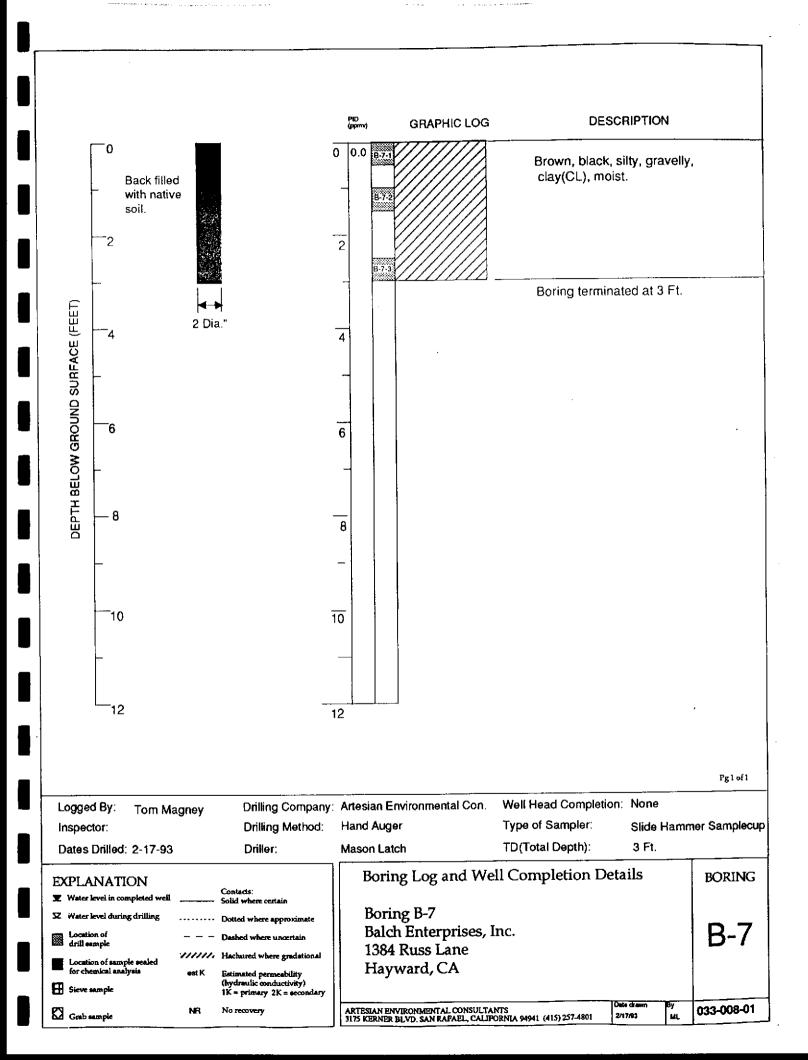


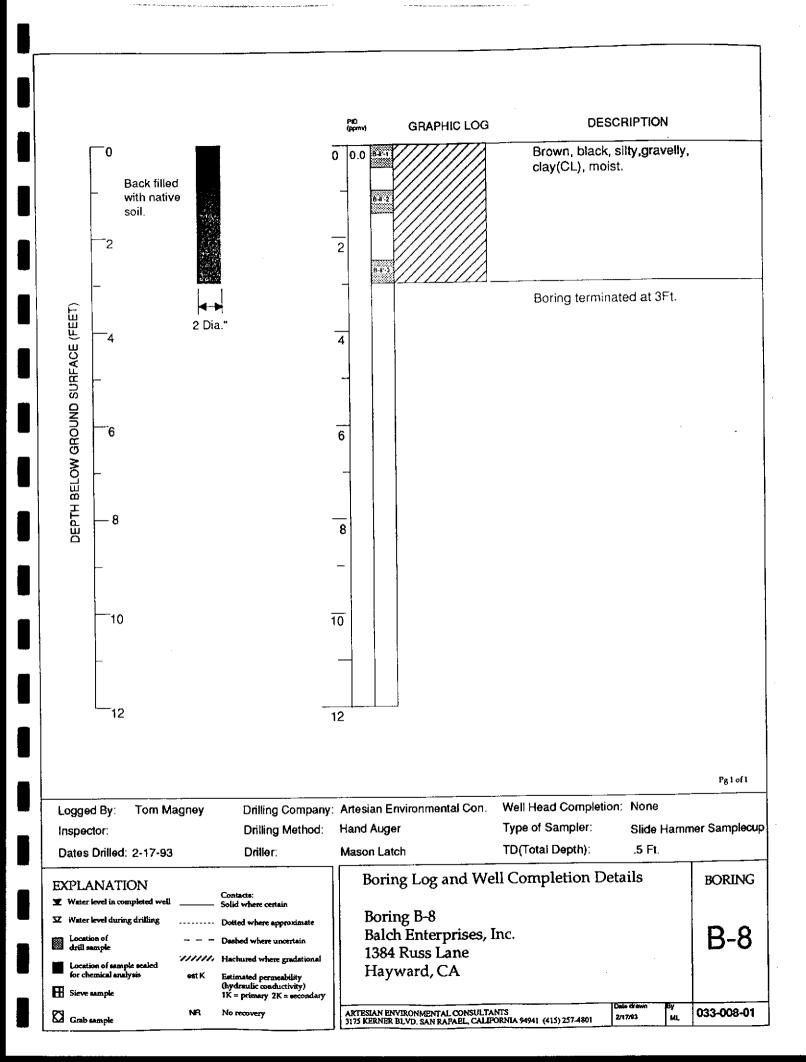


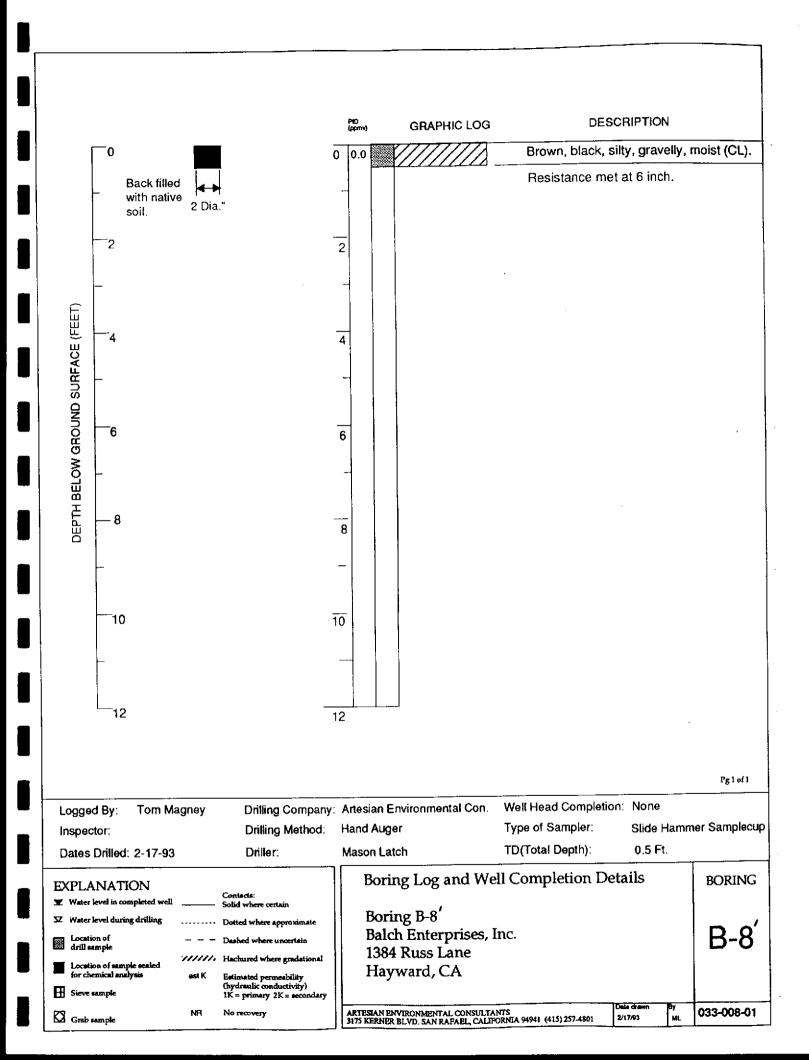












MAJOR DIVISIONS		GRAPHIC SYMBOL		TYPICAL DESCRIPTIONS	
		CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	GRAVEL AND GRAVELLY SOILS	(LITTLE OR NO FINES)	****	G P	POORLY-GRADED GRAVELS, GRAVEL-SAN MIXTURES, LITTLE OR NO FINES
COARSE GRAINED SOILS	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES		G M	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
5011.5		(APPRECIABLE AMOUNT OF FINES)		G C	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50%		CLEAN SAND		s w	WELL-GRADED SANDS, GRAVELLY SANDS LITTLE OR NO FINES
OF MATERIAL IS  LARGER THAN	(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAN LITTLE OR NO FINES	
NO 200 SIEVE SIZE		<b>·</b>		S M	SILTY SANDS, SAND-SILT MIXTURES
				sc	CLAYEY SANDS, SAND-CLAY MIXTURES
				МL	INORGANIC SILTS AND VERY FINE SANDS. ROCK FLOUR, SILTY OR CLAYEY FINE SAN OR CLAYEY SILTS WITH SLIGHT PLASTICT
FINE GRAINED SOILS		ND CLAYS T LESS THAN 50		ar.	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL.	ORGANIC SILTS AND ORGANIC SILTY CLAY OF LOW PLASTICTTY
MORE THAN 50%				мн	INORGANIC SILTS, MICACEOUS OR DIATO MACEOUS FINE SAND OR SILTY SOILS
OF MATERIAL IS SMALLER THAN NO 200 SIEVE SIZE		RD CLAYS GREATER THAN SO		CH	INORGANIC CLAYS OF HIGH PLASTICTLY FAT CLAYS
				ОН	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
	HIGHLY ORGANIC SOILS	, , , , , , , , , , , , , , , , , , ,		PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

### KEY TO LOG OF BORINGS

#### SAMPLES & BLOWCOUNTS LABORATORY TESTS HAMMER BLOWS PER FOOT OF PENETRATION ATTERBERG LIMITS TEST INDICATES UNDISTURBED SAMPLE DSCU DIRECT SHEAR TEST (Consolidated, Undrained) INDICATES DISTURBED SAMPLE CALIFORNIA BEARING RATIO TEST STANDARD PENETRATION TEST SAMPLE COMP COMPACTION TEST NR . INDICATES NO RECOVERY CONFINED COMPRESSION (Consolidation Test) SAMPLES DRIVEN WITH A 140-POUND HAMMER -200 PERCENT PASSING NO. 200 SIEVE DROPPING 30 INCHES (Test Results in Parentheses)

Environmental Laboratory (1094)

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5 DAYS TURNAROUND

February 25, 1993

ChromaLab File No.: 0293186

**ESSENES** 

RE: Sixteen soil samples for Gasoline and BTEX analysis

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Submitted: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

#### RESULTS:

Sample	Gasoline	Pangana	Toluene	Ethyl	Total
I.D.	(mg/Kg)	Benzene (μq/Kq)	(μα/Kα)	Benzene (μα/Kα)	Xylenes
	( mg/ Ng)	(Mg/Ng)	(Mg/Ng)	(Ad/Md)	(µg/Kg)
B-1-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-2-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-3-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-4-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-5-1	N.D.	N.D.	10	8.7	- 58
B-6-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-7-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-8-1	N.D.	N.D.	N.D.	N.D.	N.D.
B-1A-6	N.D.	N.D.	N.D.	N.D.	N.D.
B-1A-11.0-11.5	N.D.	N.D.	N.D.	N.D.	N.D.
B-2A-6	N.D.	N.D.	N.D.	N.D.	N.D.
B-2A-10.5-11.0	N.D.	N.D.	N.D.	N.D.	N.D.
B-3A-6	N.D.	N.D.	N.D.	N.D.	N.D.
B-3A-10.5-11.0	N.D.	N.D.	N.D.	N.D.	N.D.
B-4A-6	N.D.	N.D.	N.D.	N.D.	N.D.
B-4A-11.0-11.5	N.D.	N.D.	N.D.	N.D.	N.D.
BLANK	N.D.	N.D.	N.D.	N.D.	N.D.
SPIKE RECOVERY	108%	98%	99%	91%	91%
DUP SPIKE RECOVERY		98%	96%	93%	93%
DETECTION LIMIT	1.0	5.0	5.0	5.0	5.0
METHOD OF ANALYSIS	5030/8015	8020	8020	8020	8020

ChromaLab, Lnc.

Billy Thach

Analytical Chemist

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File No.: 0293186

**ESSENES** 

RE: Four water samples for Gasoline and BTEX analysis

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Submitted: Feb. 18, 1993

Date Analyzed: Feb. 23, 1993

#### **RESULTS:**

Sample I.D.	Gasoline (µg/L)	Benzene (µg/L)	Toluene $(\mu g/L)$	Ethyl Benzene (µg/L)	Total Xylenes (µg/L)
B-1A-AQ B-2A-AQ B-3A-AQ B-4A-AQ	N.D. N.D. N.D. N.D.	N.D. N.D. N.D.	N.D. N.D. N.D.	N.D. N.D. N.D. N.D.	N.D. N.D. N.D. N.D.
BLANK SPIKE RECOVERY DUP SPIKE RECOVERY DETECTION LIMIT METHOD OF ANALYSIS	N.D. 96%  50 5030/8015	N.D. 98% 96% 0.5 602	N.D. 98% 98% 0.5 602	N.D. 90% 93% 0.5 602	N.D. 93% 95% 0.5 602

ChromaLab, Inc.

Billy Thach

Analytical Chemist

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

February 25, 1993

5 DAYS TURNAROUND

ChromaLab File No.: 0293186 (REVISED)

**ESSENES** 

RE: Sixteen soil samples for TEPH analysis

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993

Date Submitted: Feb. 18, 1993

Date Extracted: Feb. 23, 1993

Date Analyzed: Feb. 24, 1993

#### **RESULTS:**

Sample I.D.	Kerosene (mg/Kg)	Diesel (mg/Kg)	Motor Oil (mg/Kg)
B-1-1	N.D.	N.D.	93
B-2-1	N.D.	N.D.	14
B-3-1	N.D.	N.D.	N.D.
B-4-1	N.D.	N.D.	31
B-5-1	N.D.	N.D.	21
B-6-1	5.5	60*	230
B-7-1	N.D.	N.D.	26
B-8-1	N.D.	N.D.	N.D.
B-1A-6	N.D.	N.D.	140
B-1A-11.0-11.5	N.D.	N.D.	N.D.
B-2A-6	N.D.	3.0	26
B-2A-10.5-11.0	N.D.	N.D.	N.D.
	N.D.	N.D.	25
B-3A-6 B-3A-10.5-11.0	N.D.	N.D.	N.D.
	N.D.	N.D.	N.D.
B-4A-6	N.D.	N.D.	N.D.
B-4A-11.0-11.5	и.Д.	11.5.	22
BLANK	N.D.	N.D.	N.D.
SPIKE RECOVERY		90%	
DUP SPIKE RECOVERY		93%	
DETECTION LIMIT	1.0	1.0	10.0
METHOD OF ANALYSIS	3550/8015	3550/8015	3550/8015

Unknown hydrocarbon found on diesel range quantified as diesel.

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 25, 1993

ChromaLab File No.:

0293186

**ESSENES** 

RE: Four water samples for TEPH analysis

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 24, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 24, 1993

#### RESULTS:

Sample I.D.	Kerosene (μq/L)	Diesel (µg/L)	Motor Oil (mg/L)
B-1A-AQ B-2A-AQ B-3A-AQ B-4A-AQ	N.D. N.D. N.D.	N.D. N.D. N.D.	N.D. N.D. N.D. N.D.
BLANK SPIKE RECOVERY DUP SPIKE RECOVERY DETECTION LIMIT METHOD OF ANALYSIS	N.D.  50 3510/8015	N.D. 87% 93% 50 3510/8015	N.D.  0.5 3510/8015

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

0293186 A ChromaLab File #

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993
Sample I.D.:B-7-1

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0  $\mu$ g/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kg	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	<del></del>
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	~ <del></del>
TRANS-1,3-DICHLOROPROPENE	N.D.	<del></del>
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del>-</del>
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

Mary Cappelli Analytical Chemist Eric Tam

Laboratory Director

**Environmental Laboratory (1094)** 

ChromaLab File # 0293186 B

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993
Sample I.D.: B-8-1

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0  $\mu$ g/Kg

Dilution Factor: None

	uar IVar	Spike Recovery
COMPOUND NAME	μg/Kg N.D.	DDIRC RECOVERY
CHLOROMETHANE VINYL CHLORIDE	N.D.	·
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	102% 101%
1,1-DICHLOROETHENE	N.D.	
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	95% 96%
TRICHLOROETHENE	N.D.	
1,2-DICHLOROPROPANE BROMODICHLOROMETHANE	N.D.	
<b>22,122,1</b>	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	<del></del>
1,1,2-TRICHLOROETHANE	N.D.	99% 91%
TETRACHLOROETHENE	N.D.	
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	104% 91%
1,1,2,2-TETRACHLOROETHANE		TO40 210
1,3-DICHLOROBENZENE	N.D. N.D.	
1,4-DICHLOROBENZENE		
1,2-DICHLOROBENZENE	N.D.	,

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Mary Cappelli Analytical Chemist

Eric Tam Laboratory Director

Environmental Laboratory (1094)

ChromaLab File # 0293186 C

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993
Sample I.D.: B-1A-6

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0  $\mu$ g/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kq	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<del></del>
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	<b></b>
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	<del></del>
	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del></del>
CHLOROBENZENE	N.D.	<del></del>
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	<b></b>
1,4-DICHLOROBENZENE	N.D.	<b></b>
1,2-DICHLOROBENZENE	N.D.	<b></b>

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Mary Cappelli Analytical Chemist

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993
Sample I.D.: B-1A-11.0-11.5 ChromaLab File # 0293186 D

**5 DAYS TURNAROUND** 

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 µg/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kq	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<del></del>
BROMOMETHANE	N.D.	<b></b>
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)		
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE		104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	<del></del>
1,2-DICHLOROBENZENE	N.D.	
TIC DICHESTON		

ChromaLab, Inc.

Mary Cappelli

Analytical Chemist

Eric Tam

Laboratory Director

ما معالم المستخدم المركزية ( <u>( أن كان الرئيس والمستخدم ) و ين و الرئيس و المراز و المستخدم </u>

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File # 0293186 E

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993

Sample I.D.: B-2A-6

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0  $\mu$ g/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kq	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	<b> </b>
CARBON TETRACHLORIDE	N.D.	<b></b>
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	<del></del>
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	<del>*</del>
CIS-1,3-DICHLOROPROPENE	N.D.	<del></del>
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	<b>-</b>
1,4-DICHLOROBENZENE	N.D.	<b></b>
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

Many Cappelle

Mary Cappelli Analytical Chemist Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

James Colored Colored States

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993 Date of Analysis: Feb. 23, 1993 Sample I.D.: B-2A-10.5-11.0

ChromaLab File # 0293186 F

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 μg/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kg	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	· +
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	<b></b>
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	=
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	<del></del>
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	<del>-</del>
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	<del></del>

ChromaLab, Inc.

Many Coppelle Mary Cappelli

Analytical Chemist

Eric Tam

Laboratory Director

**Environmental Laboratory (1094)** 

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993 Date of Analysis: Feb. 23, 1993

Sample I.D.: B-3A-6

ChromaLab File # 0293186 G

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 μg/Kg

Dilution Factor: None

COMPOUND NAME	μ <b>q</b> /Kq	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<del></del>
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	<del></del>
	N.D.	<del></del>
1,2-DICHLOROETHENE (CIS)	N.D.	<del></del>
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	<b></b>
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	- <del></del>
CIS-1,3-DICHLOROPROPENE	N.D.	<b></b>
	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	<b></b>
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

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ChromaLab File # 0293186 H

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993 Date of Analysis: Feb. 23, 1993 Sample I.D.: B-3A-10.5-11.0

Project No: 033-008-01 Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0  $\mu$ g/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kq	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<b></b>
BROMOMETHANE	N.D.	<del>-</del>
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	<b></b>
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	. N . D .	<del></del>
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	<del></del>
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	<b></b>
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del></del>
CHLOROBENZENE	N.D.	<del></del>
BROMOFORM	N.D.	3048 018
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	<b></b>
1,2-DICHLOROBENZENE	N.D.	

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**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993

Date of Analysis: Feb. 23, 1993

Sample I.D.: B-4A-6

Project No: 033-008-01

Method of Analysis: EPA 8010

ChromaLab File # 0293186 I

Matrix: Soil

Reporting Det. Limit: 5.0  $\mu$ g/Kg

Dilution Factor: None

		a '1- D-a
COMPOUND NAME	μ <b>g/Kg</b>	Spike Recovery
CHLOROMETHANE	N.D.	<del></del>
VINYL CHLORIDE	N.D.	<b></b> -
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	<del> •</del>
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	<del></del>
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1.2-DICHLOROETHANE	N.D.	<del></del>
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	<del></del>
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1, 3-DICHLOROPROPENE	N.D.	- <b></b>
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del></del>
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	<del></del>
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 9 <b>1%</b>
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	
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ChromaLab File # 0293186 J

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993 Date of Analysis: Feb. 23, 1993

Sample I.D.: B-4A-11.0-11.5

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit:  $5.0~\mu g/Kg$ 

Dilution Factor: None

	um /Vm	Spike Recovery
COMPOUND NAME	μα/Kα Ν.D.	
CHLOROMETHANE	N.D.	<b></b>
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	<b></b>
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	102% 101%
1,1-DICHLOROETHENE	N.D.	
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	<b></b> -
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE		
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	<b>95%</b> 96%
TRICHLOROETHENE	N.D.	95% 90%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	99% 91%
TETRACHLOROETHENE	N.D.	996 916
DIBROMOCHLOROMETHANE	N.D.	<b></b>
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	1049 019
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	<del></del>
1,4-DICHLOROBENZENE	N.D.	<b></b>
1,2-DICHLOROBENZENE	N.D.	

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ChromaLab File # 0293186 K

**5 DAYS TURNAROUND** 

February 25, 1993

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ESSENES

Project Name: BALCH-HAYWARD
Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993

Sample I.D.: B-1-1

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 µg/Kg

Dilution Factor: None

COMPOUND NAME	μ <b>α/</b> Κ <b>α</b>	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<del>-</del> - <del>-</del>
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D.	<b></b>
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	<del></del>
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	<del></del>
TRANS-1, 3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	<del></del>
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del>-</del>
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

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**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993

Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 23, 1993
Sample I.D.: B-2-1

Project No: 033-008-01

Method of Analysis: EPA 8010

ChromaLab File # 0293186 L

Matrix: Soil

Reporting Det. Limit: 5.0 μg/Kg

Dilution Factor: None

COMPOUND NAME	μq/Kg	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<del></del> <del></del> -
BROMOMETHANE	N.D.	<del></del>
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	<del></del>
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	<b></b> '
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	<b></b>
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del></del>
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
, , ,	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	<b></b>
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	<del>-</del> -

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**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File # 0293186 M

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993 Date of Analysis: Feb. 24, 1993 Sample I.D.: B-5-1

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit:  $5.0 \mu g/Kg$ 

Dilution Factor: None

•		
COMPOUND NAME	μg/Kg	Spike Recovery
CHLOROMETHANE	N.D.	<del>-</del>
VINYL CHLORIDE	N.D.	<b></b>
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	<del></del>
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	- <b></b>
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% <b>96%</b>
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	<b></b>
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1, 3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	<del></del>
CHLOROBENZENE	N.D.	<del></del>
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	<b></b>
1,4-DICHLOROBENZENE	N.D.	<del></del>
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

Mary Cappelli Analytical Chemist Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

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**ESSENES** 

Project Name: BALCH-HAYWARD
Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 24, 1993

Sample I.D.: B-3-1

ChromaLab File # 0293186 N

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 μg/Kg

Dilution Factor: None

	ua /Va	Spike Recovery
COMPOUND NAME	<u>µg/Kg</u> N.D.	
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	102% 101%
1,1-DICHLOROETHENE	N.D.	
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)		
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	95% 96%
TRICHLOROETHENE	N.D.	
1,2-DICHLOROPROPANE_	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1, 3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	99% 91%
TETRACHLOROETHENE	N.D.	996 916
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	- <b></b> 104% 91%
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	<del></del>
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

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Mary Cappelli Analytical Chemist Eric Tam

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Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993

Date of Analysis: Feb. 24, 1993

Sample I.D.: B-4-1

ChromaLab File # 0293186 0

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 μg/Kg

Dilution Factor: None

•		
COMPOUND NAME	μq/Kg	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D.	~
1,1-DICHLOROETHENE	N.D.	102% 10 <b>1</b> %
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)		<del></del>
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
CARBON TETRACHDORIDE	N.D.	
1,2-DICHLOROETHANE TRICHLOROETHENE	N.D.	95% <b>96%</b>
	N.D.	
1,2-DICHLOROPROPANE BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
Z-CHLOROETHILVINILLIIILK	N.D.	<del>-</del> - +
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	99% 91%
TETRACHLOROETHENE	N.D.	
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	<del></del>
BROMOFORM	N.D.	104% 91%
1,1,2,2-TETRACHLOROETHANE	N.D.	
1,3-DICHLOROBENZENE	<u>-</u> · · · -	
1,4-DICHLOROBENZENE	N.D.	<b>_</b>
1,2-DICHLOROBENZENE	N.D.	

ChromaLab, Inc.

Mary Cappelli Analytical Chemist

Eric Tam Laboratory Director

Environmental Laboratory (1094)

February 25, 1993

ChromaLab File # 0293186 P

**ESSENES** 

Project Name: BALCH-HAYWARD
Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 24, 1993

Sample I.D.: B-6-1

Project No: 033-008-01

Method of Analysis: EPA 8010

Matrix: Soil

Reporting Det. Limit: 5.0 μg/Kg

Dilution Factor: None

		G. D.
COMPOUND NAME	μq/Kg	<u> Spike Recovery</u>
CHLOROMETHANE	N.D.	<del></del>
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	<del></del>
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D.	1000 1019
1,1-DICHLOROETHENE	N.D.	102% 101%
METHYLENE CHLORIDE	N.D.	
T'S DICHIDONODIH	N.D.	<del></del>
1,2-DICHLOROETHENE (CIS)	N.D.	<del></del>
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	<del></del>
1,1,1-TRICHLOROETHANE	N.D.	<b></b>
CARBON TETRACHLORIDE	N.D.	<b></b>
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	95% 96%
1,2-DICHLOROPROPANE	N.D.	<b></b>
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	<del></del>
TRANS-1, 3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	99% 91%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	104% 91%
1,3-DICHLOROBENZENE	N.D.	=
1,4-DICHLOROBENZENE	N.D.	<b></b>
1,2-DICHLOROBENZENE	N.D.	
1/2 010111011011111111111111111111111111		

ChromaLab, Inc.

Mary Cappelli

Analytical Chemist

Eric Tam

Laboratory Director

**5 DAYS TURNAROUND** 

Environmental Laboratory (1094)

February 25, 1993

ChromaLab File # 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993 Date of Analysis: Feb. 24, 1993 Sample I.D.: B-1A-AQ

Method of Analysis: EPA 601 Matrix: Water

Limit:  $0.5 \mu g/L$ Dilution Factor: None

Project No: 033-008-01

\_μ**α/**L Spike Recovery COMPOUND NAME Ñ.D. CHLOROMETHANE N.D. VINYL CHLORIDE N.D. BROMOMETHANE N.D. CHLOROETHANE N.D. TRICHLOROFLUOROMETHANE 84% 99% 1,1-DICHLOROETHENE N.D. N.D. METHYLENE CHLORIDE (TRANS) N.D. 1,2-DICHLOROETHENE 1,2-DICHLOROETHENE N.D. 1,1-DICHLOROETHANE N.D. N.D. CHLOROFORM N.D. 1,1,1-TRICHLOROETHANE N.D. CARBON TETRACHLORIDE N.D. 1,2-DICHLOROETHANE 97% 104% N.D. TRICHLOROETHENE N.D. 1,2-DICHLOROPROPANE N.D. BROMODICHLOROMETHANE N.D. 2-CHLOROETHYLVINYLETHER TRANS-1,3-DICHLOROPROPENE N.D. N.D. CIS-1,3-DICHLOROPROPENE 1,1,2-TRICHLOROETHANE N.D. 93% 106% N.D. TETRACHLOROETHENE N.D. DIBROMOCHLOROMETHANE N.D. CHLOROBENZENE N.D. BROMOFORM 106% 99% 1,1,2,2-TETRACHLOROETHANE N.D. 1,3-DICHLOROBENZENE N.D. N.D. 1,4-DICHLOROBENZENE N.D.

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1,2-DICHLOROBENZENE

Mary Cappelli Analytical Chemist Eric Tam

Laboratory Director

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 25, 1993

ChromaLab File # 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993

Date of Analysis: Feb. 24, 1993

Sample I.D.: B-2A-AQ

Project No: 033-008-01

Method of Analysis: EPA 601

Matrix: Water Limit: 0.5 μg/L

Dilution Factor: None

COMPOUND NAME	μq/L	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	84% 99%
METHYLENE CHLORIDE	N.D.	<del></del>
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	97% 104%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	93% 106%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	106% 99%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	<del></del>
1,2-DICHLOROBENZENE	N.D.	

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Mary Cappelli Analytical Chemist Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File # 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD
Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 24, 1993

Sample I.D.: B-3A-AQ

Project No: 033-008-01

Method of Analysis: EPA 601

Matrix: Water Limit: 0.5  $\mu$ g/L

Dilution Factor: None

COMPOUND NAME	μq/L	Spike Recovery
CHLOROMETHANE	N.D.	—— <del>—</del>
VINYL CHLORIDE	N.D.	
BROMOMETHANE	N.D.	
CHLOROETHANE	N.D.	<del></del>
TRICHLOROFLUOROMETHANE	N.D. *	<b></b>
1,1-DICHLOROETHENE	N.D.	84% 99%
METHYLENE CHLORIDE	N.D.	<del>-</del>
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	<b></b>
CARBON TETRACHLORIDE	N.D.	
1,2-DICHLOROETHANE	N.D.	
TRICHLOROETHENE	N.D.	97% 104%
1,2-DICHLOROPROPANE	N.D.	
BROMODICHLOROMETHANE	N.D.	
2-CHLOROETHYLVINYLETHER	N.D.	<del></del>
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	<del></del>
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	93% 106%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	<b></b>
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	106% 99%
1,3-DICHLOROBENZENE	N.D.	
1,4-DICHLOROBENZENE	N.D.	<b></b>
1,2-DICHLOROBENZENE	N.D.	

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Mary Cappelli Analytical Chemist Eric Tam

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February 25, 1993

ChromaLab File # 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD
Date Sampled: Feb. 17, 1993
Date Submitted: Feb. 18, 1993
Date of Analysis: Feb. 24, 1993

Sample I.D.: B-4A-AQ

Project No: 033-008-01

Method of Analysis: EPA 601

Matrix: Water Limit: 0.5 μg/L

Dilution Factor: None

COMPOUND NAME	μq/L	Spike Recovery
CHLOROMETHANE	N.D.	
VINYL CHLORIDE	N.D.	<del></del>
BROMOMETHANE	N.D.	<del></del>
CHLOROETHANE	N.D.	
TRICHLOROFLUOROMETHANE	N.D.	
1,1-DICHLOROETHENE	N.D.	84% 99%
METHYLENE CHLORIDE	N.D.	
1,2-DICHLOROETHENE (TRANS)	N.D.	
1,2-DICHLOROETHENE (CIS)	N.D.	
1,1-DICHLOROETHANE	N.D.	<del></del>
CHLOROFORM	N.D.	
1,1,1-TRICHLOROETHANE	N.D.	
CARBON TETRACHLORIDE	N.D.	<b></b>
1,2-DICHLOROETHANE	N.D.	<b></b>
TRICHLOROETHENE	N.D.	97% 104%
1,2-DICHLOROPROPANE	N.D.	<del></del>
BROMODICHLOROMETHANE	N.D.	<del></del>
2-CHLOROETHYLVINYLETHER	N.D.	<del></del>
TRANS-1,3-DICHLOROPROPENE	N.D.	
CIS-1,3-DICHLOROPROPENE	N.D.	
1,1,2-TRICHLOROETHANE	N.D.	
TETRACHLOROETHENE	N.D.	93% 106%
DIBROMOCHLOROMETHANE	N.D.	
CHLOROBENZENE	N.D.	
BROMOFORM	N.D.	
1,1,2,2-TETRACHLOROETHANE	N.D.	106% 99%
1,3-DICHLOROBENZENE	N.D.	<b></b>
1,4-DICHLOROBENZENE	N.D.	
1,2-DICHLOROBENZENE	N.D.	

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**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993 Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-7-1

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	7.4	0.25
Barium (Ba)	91	0.25
Beryllium (Be)	0.42	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	11	0.50
Chromium (Cr)	27	0.50
Copper (Cu)	46	0.25
Lead (Pb)	14	0.50
Mercury (Hg)	0.059	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	38	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	30	0.50
Zinc (Zn)	73	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

Refaat A. Mankarious

Inorganic Supersvisor

Eric Tam

Laboratory Director

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February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-6-1

<u>Metals</u>	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	N.D.	0.25
Barium (Ba)	70	0.25
Beryllium (Be)	0.40	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	16	0.50
Chromium (Cr)	60	0.50
Copper (Cu)	72	0.25
Lead (Pb)	15	0.50
Mercury (Hg)	0.15	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	N.D.	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	30	0.50
Zinc (Zn)	43	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Eric Tam

Laboratory Director

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5 DAYS TURNAROUND

February 25, 1993

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-1A-AQ

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	N.D.	0.020
Arsenic (As)	N.D.	0.005
Barium (Ba)	0.07	0.005
Beryllium (Be)	N.D.	0.001
Cadmium (Cd)	N.D.	0.001
Cobalt (Co)	N.D.	0.01
Chromium (Cr)	N.D.	0.01
Copper (Cu)	0.01	0.005
Lead (Pb)	N.D.	0.010
Mercury (Hg)	N.D.	0.001
Molybdenum (Mo)	N.D.	0.005
Nickel (Ni)	N.D.	0.020
Selenium (Se)	N.D.	0.01
Silver (Ag)	N.D.	0.005
Thallium (Tl)	N.D.	0.01
Vanadium (V)	0.03	0.01
Zinc (Zn)	0.02	0.005

Method of Analysis: 3010/6010/7470

ChromaLab, Inc.

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Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-2A-AQ

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	N.D.	0.020
Arsenic (As)	0.01	0.005
Barium (Ba)	0.07	0.005
Beryllium (Be)	N.D.	0.001
Cadmium (Cd)	N.D.	0.001
Cobalt (Co)	N.D.	0.01
Chromium (Cr)	N.D.	0.01
Copper (Cu)	0.01	0.005
Lead (Pb)	N.D.	0.010
Mercury (Hg)	N.D.	0.001
Molybdenum (Mo)	N.D.	0.005
Nickel (Ni)	N.D.	0.020
Selenium (Se)	N.D.	0.01
Silver (Ag)	N.D.	0.005
Thallium (T1)	N.D.	0.01
Vanadium (V)	0.03	0.01
Zinc (Zn)	0.03	0.005

Method of Analysis: 3010/6010/7470

ChromaLab, Inc.

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**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Submitted: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-3A-AQ

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	N.D.	0.020
Arsenic (As)	N.D.	0.005
Barium (Ba)	0.11	0.005
Beryllium (Be)	N.D.	0.001
Cadmium (Cd)	N.D.	0.001
Cobalt (Co)	N.D.	0.01
Chromium (Cr)	N.D.	0.01
Copper (Cu)	0.01	0.005
Lead (Pb)	N.D.	0.010
Mercury (Hg)	N.D.	0.001
Molybdenum (Mo)	N.D.	0.005
Nickel (Ni)	N.D.	0.020
Selenium (Se)	N.D.	0.01
Silver (Ag)	N.D.	0.005
Thallium (T1)	N.D.	0.01
Vanadium (V)	0.02	0.01
Zinc (Zn)	0.02	0.005

Method of Analysis: 3010/6010/7470

ChromaLab, Inc.

Refaat A.Mankarious

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Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab File No.: 0293186

**ESSENES** 

RE: One water sample for Total CAM 17 Metals analyses
 (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Submitted: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-4A-AQ

Metals	Concentration (mg/L)	Detection Limit (mg/L)
Antimony (Sb)	N.D. N.D.	0.020 0.005
Arsenic (As) Barium (Ba) Beryllium (Be)	0.06 N.D.	0.005 0.001 0.001
Cadmium (Cd) Cobalt (Co) Chromium (Cr)	N.D. N.D. N.D.	0.01 0.01
Copper (Cu) Lead (Pb)	N.D. N.D. N.D.	0.005 0.010 0.001
Mercury (Hg) Molybdenum (Mo) Nickel (Ni)	N.D. N.D.	0.005 0.020 0.01
Selenium (Se) Silver (Ag) Thallium (Tl)	N.D. N.D. N.D.	0.005 0.01
Vanadium (V) Zinc (Zn)	N.D. 0.01	0.01 0.005

Method of Analysis: 3010/6010/7470

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Laboratory Director

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Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-4A-11-11.5

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.3	1.00
Arsenic (As)	N.D.	0.25
Barium (Ba)	95	0.25
Beryllium (Be)	0.38	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	9.6	<b>0.</b> 50
Chromium (Cr)	22	0.50
Copper (Cu)	20	0.25
Lead (Pb)	9.0	0.50
Mercury (Hg)	N.D.	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	43	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	24	0.50
Zinc (Zn)	35	0.25

Method of Analysis: 3050/6010/7471

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Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-1-1

<u>Metals</u>	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Ch)	2.5	1.00
Antimony (Sb)	5.2	0.25
Arsenic (As)		
Barium (Ba)	104	0.25
Beryllium (Be)	0.44	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	11	0.50
Chromium (Cr)	24	0.50
Copper (Cu)	45	0.25
Lead (Pb)	140	0.50
Mercury (Hg)	0.11	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	40	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	39	0.50
• • • • • • • • • • • • • • • • • • • •		0.25
Zinc (Zn)	120	0.23

Method of Analysis: 3050/6010/7471

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Laboratory Director

Environmental Laboratory (1094)

ChromaLab file number: 0293186

**5 DAYS TURNAROUND** 

February 25, 1993

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Received: Feb. 18, 1993 Date Sampled: Feb. 17, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-2A-6"

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.1	1.00
Arsenic (As)	1.5	0.25
Barium (Ba)	68	0.25
Beryllium (Be)	0.29	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	11	0.50
Chromium (Cr)	22	0.50
Copper (Cu)	39	0.25
Lead (Pb)	61	0.50
Mercury (Hg)	0.14	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	31	0.50
Selenium (Se)	N.D.	0.50
Silver (Aq)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	23	0.50
Zinc (Zn)	107	0.25

Method of Analysis: 3050/6010/7471

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**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-2A-10.5-11

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.2	1.00
Arsenic (As)	6.1	0.25
Barium (Ba)	92	0.25
Beryllium (Be)	0.40	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	9.6	0.50
Chromium (Cr)	24	0.50
Copper (Cu)	20	0.25
Lead (Pb)	8.9	0.50
Mercury (Hg)	N.D.	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	41	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	20	0.50
Zinc (Zn)	36	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

Refaat A.Mankarious

Inorganic Supersvisor

Eric Tam

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Laboratory Director

February 25, 1993

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Environmental Laboratory (1094)

ChromaLab file number: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-3A-6"

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
		1 00
Antimony (Sb)	2.2	1.00
Arsenic (As)	6.5	0.25
Barium (Ba)	<b>6</b> 6	0.25
Beryllium (Be)	0.34	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	11	0.50
Chromium (Cr)	37	0.50
Copper (Cu)	67	0.25
Lead (Pb)	44	0.50
Mercury (Hg)	0.15	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	64	0.50
Selenium (Se)	N.D.	0.50
Silver (Aq)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	32	0.50
Zinc (Zn)	170	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

Refaat A.Mankarious Inorganic Supersvisor Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-3A-10.5-11.0

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.6	1.00
Arsenic (As)	5.1	0.25
Barium (Ba)	96	0.25
Beryllium (Be)	0.33	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	8.5	0.50
Chromium (Cr)	23	0.50
Copper (Cu)	20	0.25
Lead (Pb)	9.6	0.50
Mercury (Hg)	N.D.	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	37	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	17	0.50
Zinc (Zn)	300	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

Refaat A. Mankarious

Inorganic Supersvisor

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD
Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-4A-6"

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Ch)	N.D.	1.00
Antimony (Sb)		0.25
Arsenic (As)	2.4	
Barium (Ba)	150	0.25
Beryllium (Be)	0.70	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	20	0.50
Chromium (Cr)	68	0.50
Copper (Cu)	61	0.25
Lead (Pb)	14	0.50
Mercury (Hg)	0.24	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	102	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	72	0.50
Zinc (Zn)	62	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Refaat A.Mankarious Inorganic Supersvisor Eric Tam

Laboratory Director

Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-8-1

<u>Metals</u>	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	7.8	0.25
Barium (Ba)	114	0.25
Beryllium (Be)	0.74	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	18	0.50
Chromium (Cr)	8.3	0.50
Copper (Cu)	87	0.25
Lead (Pb)	39	0.50
Mercury (Hg)	0.26	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	31	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	105	0.50
Zinc (Zn)	101	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: Sample I.D.: B-1A-6"

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.6	1.00
Arsenic (As)	3.7	0.25
Barium (Ba)	91	0.25
Beryllium (Be)	0.47	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	12	0.50
Chromium (Cr)	41	0.50
Copper (Cu)	36	0.25
Lead (Pb)	35	0.50
Mercury (Hg)	0.12	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	39	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	43	0.50
Zinc (Zn)	60	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Laboratory Director

Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Received: Feb. 18, 1993 Date Sampled: Feb. 17, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-1A-11.-11.5

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	N.D.	1.00
Arsenic (As)	1.7	0.25
Barium (Ba)	89	0.25
Beryllium (Be)	0.19	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	5.3	0.50
Chromium (Cr)	27	0.50
Copper (Cu)	18	0.25
Lead (Pb)	6.1	0.50
Mercury (Hg)	N.D.	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	28	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	31	0.50
Zinc (Zn)	33	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Inorganic Supersvisor

Eric Tam

Laboratory Director

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Environmental Laboratory (1094)

**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-2-1

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.2	1.00
Arsenic (As)	5.2	0.25
Barium (Ba)	83	0.25
Beryllium (Be)	0.40	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	9.1	0.50
Chromium (Cr)	22	0.50
Copper (Cu)	17	0.25
Lead (Pb)	11	0.50
Mercury (Hg)	N.D.	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	36	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	23	0.50
Zinc (Zn)	29	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Laboratory Director

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5 DAYS TURNAROUND

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-3-1

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.3	1.00
Arsenic (As)	4.3	0.25
Barium (Ba)	100	0.25
Beryllium (Be)	0.51	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	11	0.50
Chromium (Cr)	24	0.50
Copper (Cu)	60	0.25
Lead (Pb)	22	0.50
Mercury (Hg)	0.12	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	41	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (T1)	N.D.	2.00
Vanadium (V)	54	0.50
Zinc (Zn)	58	0.25

Method of Analysis: 3050/6010/7471

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Eric Tam

Laboratory Director

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**5 DAYS TURNAROUND** 

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS:

Sample I.D.: B-4-1

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
Antimony (Sb)	1.6	1.00
Arsenic (As)	1.0	0.25
Barium (Ba)	106	0.25
Beryllium (Be)	0.42	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	12	0.50
Chromium (Cr)	17	0.50
Copper (Cu)	52	0.25
Lead (Pb)	36	0.50
Mercury (Hg)	0.14	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	36	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	34	0.50
Zinc (Zn)	77	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

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Environmental Laboratory (1094)

5 DAYS TURNAROUND

February 25, 1993

ChromaLab file number: 0293186

**ESSENES** 

RE: One soil sample for Total CAM 17 Metals analyses (CA Title 22)

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Received: Feb. 18, 1993

Date Analyzed: Feb. 24, 1993

RESULTS: San

Sample I.D.: B-5-1

Metals	Concentration (mg/Kg)	Detection Limit (mg/Kg)
3-4		1 00
Antimony (Sb)	1.1	1.00
Arsenic (As)	10	0.25
Barium (Ba)	91	0.25
Beryllium (Be)	0.40	0.05
Cadmium (Cd)	N.D.	0.05
Cobalt (Co)	13	0.50
Chromium (Cr)	28	0.50
Copper (Cu)	68	0.25
Lead (Pb)	42	0.50
Mercury (Hg)	0.89	0.05
Molybdenum (Mo)	N.D.	0.25
Nickel (Ni)	43	0.50
Selenium (Se)	N.D.	0.50
Silver (Ag)	N.D.	0.25
Thallium (Tl)	N.D.	2.00
Vanadium (V)	46	0.50
Zinc (Zn)	220	0.25

Method of Analysis: 3050/6010/7471

ChromaLab, Inc.

Refaat A.Mankarious

Inorganic Supersvisor

Eric Tam

Laboratory Director

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-1-1

#### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
Compounds	(µq/kq)	Limit (μg/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	. 5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

5 DAYS TURNAROUND

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993

Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-2-1

#### CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (ug/kg)	Reporting Detection Limit (µg/kg)
Compounds		
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE		5
p,p' - METHOXYCHLOR		5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

ChromaLab File No.: 0293186

5 DAYS TURNAROUND

February 26, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-3-1

#### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
Compounds	(µq/kq)	Limit (µg/kg)
	-	
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1 .
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
γ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

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Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-4-1

#### CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Reporting Detection Limit (µg/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

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Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

5 DAYS TURNAROUND

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-5-1

#### CHLORINATED PESTICIDE ANALYSIS

		Reporting Detection
Compounds	(µg/kg)	Limit (µg/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

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Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-6-1

#### CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Reporting Detection Limit (µg/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
$\delta$ - BHC	N.D.	<u>1</u>
ENDOSULFAN SULFATE		5
p,p' - METHOXYCHLOR		5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

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February 26, 1993

5 DAYS TURNAROUND

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-7-1

#### CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Reporting Detection Limit (µg/kg)
Compodition	(23) 3/	
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
γ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	=: : :	5
p,p' - METHOXYCHLOR		5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Éric Tam

Environmental Laboratory (1094)

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

February 26, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993

Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-8-1

### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
Compounds	(µg/kg)	
Compounds	<u> </u>	
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
	N.D.	1
ENDRIN		- 1
HEPTACHLOR	N.D.	
HEPTACHLOR EPOXIDE	N.D.	1_
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam 4

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993 ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993

Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

5 DAYS TURNAROUND

Dilution Factor: None

Sample I.D.: B-1A-6

#### CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration	Reporting Detection Limit (μg/kg)
Compounds		
ALDRIN	N.D.	1
DIELDRIN	2.7	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	1.2	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
γ - BHC (LINDANE)	N.D.	· 1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
-	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	77	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-1A-11.0-11.5

#### CHLORINATED PESTICIDE ANALYSIS

a		Reporting Detection
Compounds	(μq/kq)	Limit ( $\mu$ g/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	_ 1
HEPTACHLOR	N.D.	<u></u>
HEPTACHLOR EPOXIDE	N.D.	ī
p,p' - DDT	N.D.	5
	N.D.	1
p,p' - DDE		5
p,p' - DDD	N.D.	
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
$\delta$ - BHC	N.D.	<b>1</b> .
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR		5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

**5 DAYS TURNAROUND** 

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-2A-6

#### CHLORINATED PESTICIDE ANALYSIS

		Reporting Detection
Compounds	(μg/kg)	Limit (μg/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
γ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

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Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

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February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993

17, 1993 Date Submitted: Feb. 18, 1993 23, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-2A-10.5-11.0

#### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
Compounds	(µg/kg)	Limit (μg/kg)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
β - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

February 26, 1993

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-3A-6

### CHLORINATED PESTICIDE ANALYSIS

_		Reporting Detection
Compounds	<u> (μα/κα)</u>	Limit (µg/kg)
		_
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
$\alpha$ - BHC	N.D.	1
	N.D.	- 1
$\beta$ - BHC		1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	5
ENDOSULFAN SULFATE		
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-3A-10.5-11.0

#### CHLORINATED PESTICIDE ANALYSIS

Compounds	Concentration (µg/kg)	Reporting Detection Limit (µg/kg)
Compounds		
ALDRIN	N.D.	1
DIELDRIN	N.D.	1 '
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
γ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR		5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993
Date Extracted: Feb. 23, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-4A-6

#### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
Compounds	(µq/kq)	
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
$\beta$ - BHC	N.D.	1
γ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01
Date Sampled: Feb. 17, 1993

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 23, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 23, 1993

Dilution Factor: None

Sample I.D.: B-4A-11-11.5

#### CHLORINATED PESTICIDE ANALYSIS

a	Concentration	Reporting Detection Limit (µg/kg)
Compounds	(µg/kg)	LIMIC (EG/AG)
ALDRIN	N.D.	1
DIELDRIN	N.D.	1
ENDRIN ALDEHYDE	N.D.	5
ENDRIN	N.D.	1
HEPTACHLOR	N.D.	1
HEPTACHLOR EPOXIDE	N.D.	1
p,p' - DDT	N.D.	5
p,p' - DDE	N.D.	1
p,p' - DDD	N.D.	5
ENDOSULFAN I	N.D.	5
ENDOSULFAN II	N.D.	5
α - BHC	N.D.	1
β - BHC	N.D.	1
$\gamma$ - BHC (LINDANE)	N.D.	1
δ - BHC	N.D.	1
ENDOSULFAN SULFATE	N.D.	5
p,p' - METHOXYCHLOR	N.D.	5
TOXAPHENE	N.D.	5
PCB'S	N.D.	5
CHLORDANE	N.D.	5

ChromaLab, Inc.

Yiu Tam'

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

**5 DAYS TURNAROUND** 

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 24, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 24, 1993

ChromaLab File No.: 0293186

Dilution Factor: None

Sample I.D.: B-1A-AQ

#### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
Compounds	(ħā/r)	Limit (μg/L)
ALDRIN	N.D.	.10
DIELDRIN	N.D.	.10
ENDRIN ALDEHYDE	N.D.	.50
ENDRIN	N.D.	.10
HEPTACHLOR	N.D.	.10
HEPTACHLOR EPOXIDE	N.D.	.10
p,p' - DDT	N.D.	.50
- · <del>-</del>	N.D.	.10
p,p' - DDD	N.D.	.50
ENDOSULFAN I	N.D.	.50
ENDOSULFAN II	N.D.	.50
$\alpha$ - BHC	N.D.	.10
$\beta$ - BHC	N.D.	.10
γ - BHC (LINDANE)	N.D.	.10
δ - BHC	N.D.	.10
ENDOSULFAN SULFATE	N.D.	.50
p,p' - METHOXYCHLOR	N.D.	.50
TOXAPHENE	N.D.	.50
PCB'S	N.D.	.50
CHLORDANE	N.D.	.50

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

5 DAYS TURNAROUND

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01 Date Sampled: Feb. 17, 1993

Date Extracted: Feb. 24, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 24, 1993

Dilution Factor: None

Sample I.D.: B-2A-AQ

#### CHLORINATED PESTICIDE ANALYSIS

		Reporting Detection
Compounds	(μg/L)	Limit (µg/L)
ALDRIN	N.D.	.10
DIELDRIN	N.D.	.10
ENDRIN ALDEHYDE	N.D.	.50
ENDRIN	N.D.	.10
HEPTACHLOR	N.D.	.10
HEPTACHLOR EPOXIDE	N.D.	.10
p,p' - DDT	N.D.	.50
p,p' - DDE	N.D.	.10
p,p' - DDD	N.D.	.50
ENDOSULFAN I	N.D.	.50
ENDOSULFAN II	N.D.	.50
$\alpha$ - BHC	N.D.	.10
β - BHC	N.D.	.10
γ - BHC (LINDANE)	N.D.	.10
δ - BHC `	N.D.	.10
ENDOSULFAN SULFATE	N.D.	.50
p,p' - METHOXYCHLOR	N.D.	.50
TOXAPHENE	N.D.	.50
PCB'S	N.D.	.50
CHLORDANE	N.D.	.50

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

5 DAYS TURNAROUND

ChromaLab File No.: 0293186

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993 Date Extracted: Feb. 24, 1993 Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 24, 1993

Dilution Factor: None

Sample I.D.: B-3A-AQ

#### CHLORINATED PESTICIDE ANALYSIS

Compounds		Reporting Detection Limit (µg/L)
ALDRIN	N.D.	.10
DIELDRIN	N.D.	.10
ENDRIN ALDEHYDE	N.D.	.50
ENDRIN	N.D.	.10
HEPTACHLOR	N.D.	.10
HEPTACHLOR EPOXIDE	N.D.	.10
p,p' - DDT	N.D.	.50
p,p' - DDE	N.D.	.10
p,p' - DDD	N.D.	.50
ENDOSULFAN I	N.D.	.50
ENDOSULFAN II	N.D.	.50
α - BHC	N.D.	.10
$\beta$ - BHC	N.D.	.10
γ - BHC (LINDANE)	N.D.	.10
δ - BHC	N.D.	.10
ENDOSULFAN SULFATE		.50
p,p' - METHOXYCHLOR	N.D.	.50
TOXAPHENE	N.D.	.50
PCB'S	N.D.	.50
CHLORDANE	N.D.	.50

ChromaLab, Inc.

Yiu Tam

Analytical Chemist

Eric Tam

Environmental Laboratory (1094)

February 26, 1993

ChromaLab File No.: 0293186

5 DAYS TURNAROUND

**ESSENES** 

Project Name: BALCH-HAYWARD Project Number: 033-008-01

Date Sampled: Feb. 17, 1993
Date Extracted: Feb. 24, 1993

Date Submitted: Feb. 18, 1993 Date Analyzed: Feb. 24, 1993

Dilution Factor: None

Sample I.D.: B-4A-AQ

#### CHLORINATED PESTICIDE ANALYSIS

	Concentration	Reporting Detection
<u>Compounds</u>	(µq/L)	Limit $(\mu g/L)$
ALDRIN	N.D.	.10
DIELDRIN	N.D.	.10
ENDRIN ALDEHYDE	N.D.	.50
ENDRIN	N.D.	.10
HEPTACHLOR	N.D.	.10
HEPTACHLOR EPOXIDE	N.D.	.10
p,p' - DDT	N.D.	.50
p,p' - DDE	N.D.	.10
p,p' - DDD	N.D.	.50
ENDOSULFAN I	N.D.	.50
ENDOSULFAN II	N.D.	.50
α - BHC	N.D.	.10
$\beta$ - BHC	N.D.	.10
$\gamma$ - BHC (LINDANE)	N.D.	.10
δ - BHC	N.D.	.10
ENDOSULFAN SULFATE	N.D.	.50
p,p' - METHOXYCHLOR	N.D.	.50
TOXAPHENE	N.D.	.50
PCB'S	N.D.	.50
CHLORDANE	N.D.	.50

ChromaLab, Inc.

Vin Pam

Analytical Chemist

Eric Tam

CHAIN OF CUSTODY

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B-14-6".	2/17/93	9:30	8		BORING B-1A		2/1		RUN
B-1A-18"	40	9:30	9		6 "		KI		HO4D
6-1A-36"		9:40	9		O		* 4		+
B-LA-11-11.	5 4	10:35	8		, 1		11		RUN
B-2A-6" B-2A-18"	4	11/10	a		BORING BZA		777		RUN
3-2A-18"	14	1/10	×		Δ,		7 7 1		HOUD
B-24-36"	٠.	11:10	$\propto$		( (		7		
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3-3A 18"		13:10	$\alpha$		Nr.				Hard
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B-3A-10.5- B-4A-6"		14:20	4		BORING-B-4A		7/2		RUN
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